MICROLEPIDOPTERA OF NEW GUINEA

RESULTS OF THE THIRD ARCHBOLD EXPEDITION

(AMERICAN—NETHERLANDS INDIAN EXPEDITION 1938—1939)

PART I

BY

A. DIAKONOFF

Rijksmuseum van Natuurlijke Historie, Leiden

(WITH 1 PLATE, TEXT FIGURES 1—208
AND 1 MAP)

VERHANDELINGEN DER KONINKLIJKE NEDERLANDSE
AKADEMIE VAN WETENSCHAPPEN, AFD. NATUURKUNDE

TWEEDE REEKS, DEEL XLIX, No. 1

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DEDICATED TO THE MEMORY OF
DR LAMBERTUS JOHANNES TOXOPEUS

... Science is not limited by the boundaries of countries, nor prejudiced by dissimilarity of nations and national institutions, nor restricted in its range of sympathies by distance; the domain of mind is a region superior to that which is temporal; one in which its votaries live to benefit and elevate their fellow-men.

Brackenridge Clemens, 1857.

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Plate 1. *Chionothennum placida* gen. nov., spec. nov., on the sand of the beach of Lake Habbema, 3300 meters, August, 1938.

Phot. L. J. Toxopeus

INTRODUCTION

The present paper is the first part of a report on Microlepidoptera collected by the Third Archbold Expedition of 1938—1939 (which is also called the American-Netherlands Indian Expedition) to Central Netherlands New Guinea.

For the itinerary of this Expedition, the description of collecting localities and other particulars we refer to the publications by Mr RICHARD ARCHBOLD, Dr A. L. RAND and Dr L. J. BRASS (1942)¹), by Dr L. J. BRASS (1941)²), and by Dr L. J. TOXOPEUS (1938—1950)³), (1940)⁴).

The intention of the Expedition was to collect material and data on fauna and flora of the hitherto very little known mountainous region of Central New Guinea, in which task it fully succeeded.

The collecting group of the Dutch party of the Expedition consisted of the late Dr L. J. TOXOPEUS, of his assistant, the late J. OLTJOF and of a number of Indonesian collectors of the Buitenzorg Museum. This party was chiefly entrusted with the collecting of insects. The collection of Microlepidoptera brought together by them fully deserves to be called unrivaled. It is probably the largest collection of this group of insects ever brought home by a single expedition which operated during one year. This material enables us for the first time to get a glimpse of the constitution of the microlepidopterous fauna of New Guinea, as previous records, with a few exceptions, are fragmentary and incidental, and mostly concern coastal regions. From the high mountains of Central New Guinea no records were hitherto available.

Purposely we use the word glimpse. For, however rich the present collection may be, the number of genera and species which becomes known still represents in our conviction an infinitesimally small percentage of the whole fauna, the true extent of which we do not venture at present to estimate. New Guinea possesses one of the richest and most varied faunas

¹) ARCHBOLD, RICHARD, A. L. RAND and L. J. BRASS, 1942. Results of the Archbold Expeditions No. 41. Summary of the 1938—1939 New Guinea Expedition. *Bull. Amer. Mus. Nat. Hist.*, vol. 79, pp. 197—228, plates I—XXV.

²) BRASS, L. J., 1941. The 1938—1939 Expedition to the Snow Mountains, Netherlands New Guinea. *Journ. Arnold Arboretum*, vol. 22, pp. 271—342, plates I—III.

³) TOXOPEUS, L. J., 1938—1950. Entomologische notities uit Nieuw-Guinea. 1938. *Entomol. Meded. Ned.-Indië*, vol. 4, pp. 37—43; 1939. *Ibidem*, vol. 5, pp. 11—17, 24—37, 59—71, pl. 2, 3—4, 9—10. 1940. *Ibidem*, vol. 6, pp. 17—21, 37—43, pl. 3. 1941. *Ibidem*, vol. 7, pp. 13—18, 45—48, pl. 1—2. 1950. *Idea*, vol. 8, pp. 24—30, pl. I.

⁴) TOXOPEUS, L. J., 1940. Netherlands Indian—American Expedition to Netherlands New Guinea (3rd Archbold Expedition to New Guinea 1938—'39). List of Collecting Stations. *Treubia*, vol. 17, pp. 277—283, map.

of the Tropics; the total area of the localities explored by the Expedition shrinks into insignificance in comparison with the expanse of this enormous island.

In saying this we are far from having the intention to belittle the results of the Expedition. On the contrary, these are excellent; and we wish to express at this place our admiration for the zeal and the energy of the leader of the Expedition, Mr RICHARD ARCHBOLD, and of his collaborators, and to bring tribute to the perseverance and skill of the Dutch Entomologists, the late Dr L. J. TOXOPEUS and the late J. OLTHOR, and to their Indonesian assistants, for the results achieved.

The very satisfactory condition of the collection is due to the great care with which the material has been captured, killed, labelled, and treated afterwards. We can hardly understand how the collectors could find time and opportunity to treat their spoils in such a careful way in the conditions of the collecting camps, while preventing damage by moisture and ants. They attended to the preservation of the collected material immediately after capture, often after long and tiresome trips through rough country. Small moths were killed separately from large specimens, and immediately afterwards stuck on minute pins, and put in cardboard boxes to prevent rubbing off; larger species were preserved in paper triangles. As the expedition was in possession of an airplane, the collections were quickly transported to the base camp at Hollandia, whence they were sent by steamer to Batavia, and further by motorcar to the Buitenzorg Museum. Scrupulous labelling of every specimen on the spot, with records of place, date and elevation, appeared afterwards to be extremely useful.

The study of the present collection was started in the end of 1941 but at first proceeded slowly, due to the tiresome setting of hundreds of specimens, mainly by the author himself. The outbreak of the Pacific War put a stop to this work. It could be resumed not before the middle of the year 1947. Fortunately the entire collection stood at the Buitenzorg Museum the years of the Japanese occupation of Java.

The collective name "Microlepidoptera" comprises the group of families of Lepidoptera joined together not only on account of their true taxonomic relationship but also out of habit of long usage. Thus the isolated group of the Plume Moths or Alucitidae is included in the present paper, while the entire extensive superfamily Pyraloidea, with which the Alucitidae may possess certain affinities, is excluded.

In order to facilitate the discrimination of newly described forms, a key to all genera known to occur in the Papuan region is given for every family dealt with in this paper, and, for every genus dealt with, a key to the Papuan species. It seemed desirable to include in these keys also the genera and species recorded from the Bismarek Archipelago, the Kei Islands and the satellite islands of New Guinea¹⁾. Such keys are also

¹⁾ Of the Aru Islands no records of Microlepidoptera seem to be available.

very helpful for giving a survey of the known forms; they should be added to descriptions as much as possible.

Sketches of genitalia, wing neuration, and head were made by the author in pencil with the aid of a camera lucida and put in ink afterwards by the Indonesian artist of the Buitenzorg Museum, RADEN SALEH.

To avoid confusion it may be useful to stipulate in this place that in our descriptions of colouring and markings we use the terms "inwardly oblique" and "outwardly oblique" always in the same sense, i.e. following the given fascia or marking in the wing of a set specimen in downward direction (i.e. from costa to dorsum), not upwards (i.e. from dorsum to costa, in which manner these terms would have an exactly opposite meaning). Furthermore it may be stipulated that the insects were studied for the making of descriptions with a magnification of 30 times.

On account of our lacunary knowledge of the fauna of Microlepidoptera of New Guinea and of that of the neighbouring regions, it is evident that this paper had to be kept almost entirely systematic. We hope to venture a few general remarks on the character of the New Guinean fauna in due course.

The following numbers will give an impression of the size of the collection; it comprises about 1400 specimens, belonging to 582 species and subspecies of 30 families; 1 family, 67 genera, 516 species, and 10 subspecies appear to be new to science. In the present part the families Alucitidae, Phaloniidae and a part of Tortricidae are treated; 6 genera, 94 species and one variety are described as new.

The types are deposited in the Rijksmuseum van Natuurlijke Historie, Leiden. Paratypes and duplicates are to be deposited in The American Museum of Natural History, New York, and in the Museum Zoologicum, Bogor, Indonesia.

The author wishes to express his sincere gratitude to many colleagues, who continuously and generously helped him with material and information throughout this work. It is this disinterested and generous help which inspired him to choose the memorable words of the American entomologist BRACKENRIDGE CLEMENS as a motto for this paper.

Our thanks are due to Mr J. D. BRADLEY, Department of Entomology, Division of Lepidoptera, British Museum (Natural History), London, England; Mr J. F. GATES CLARKE, United States Department of Agriculture, Bureau of Entomology and Plant Quarantine, Division of Insect Identification, Washington, D.C., U.S.A.; the late T. BAINBRIGGE FLETCHER, Rodborough Fort, Gloss., England; Dr G. C. VARLEY, the HOPE Professor, University Museum, Oxford, England; Mr JAN B. COMMON, Commonwealth Scientific and Industrial Research Organization, Canberra, Australia; the late A. JEFFERIS TURNER, Brisbane, Australia; Dr C. O. VAN REGTEREN ALTENA, Rijksmuseum van Natuurlijke Historie, Leiden, the Netherlands; Dr G. KRUSEMAN and the late J. B. CORPORAAL, Zoologisch Museum, Amsterdam, the Netherlands.

Furthermore we wish to thank our friend, Dr M. A. LIEFTINCK, Director, Museum Zoologicum Bogoriense, Bogor (formerly Buitenzorg), Java, Indonesia, for his constant interest and numerous suggestions during the progress of this study which was undertaken at that Museum.

Last not least, the author wishes to express his thanks to his wife for her constant help with the preparation of the manuscript of this paper.

With the deepest regret the author commemorates his lamented friend, Dr L. J. TOXOPEUS, the collector of the present material. This eminent lepidopterist was killed in a traffic accident on April 21, 1951, at Bandung, Java. This tragic fate prevented him from completing his studies of the Rhopalocera of the Expedition. It is a great disappointment for the author, to know that TOXOPEUS is not to witness the publication of this paper, in the progress of which he was so keenly interested. To his memory the author dedicates this study, out of admiration for his work in New Guinea, and out of gratitude for his help and encouragement during many years.

MAP

Area visited by the 1938—1939 Expedition showing land routes, camps and the route followed on aerial transport flights. Various names of collecting stations are:

1. Bernhard Camp and Bernhard Camp B.
2. 850 meter Camp, 5 km SW of Bernhard Camp, — Araucariakamp (Araucaria Camp).
3. 1200 meter Camp, 9 km SW of Bernhard Camp, — Rotankamp or Tusschenkamp (Rattan Camp).
4. 1800 meter Camp, 21 km SW of Bernhard Camp, — Mistkamp (Mist Camp).
5. 2150 meter Camp, 23 km SW of Bernhard Camp, — Topkamp (Top Camp).
6. Balim River Camp, — Baliemkamp.
7. 2200 meter Camp, Bele River Camp, 14 km NE of Lake Habbema, — Ibèlèkamp (Iebèlè Camp).
8. 2800 meter Camp, 9 km NE of Lake Habbema, — Mosboschkamp (Moss Forest Camp).
9. Lake Habbema Camp.
10. 3560 meter Camp, 5 km NE of Wilhelmina-top, — Brievenbuskamp (Letter-box Camp).
11. 3800 meter Camp, 2 km E of Wilhelmina-top, — Puindalkamp (Sereë Valley Camp).

(Alterations in accordance with the results of the military patrol maps).

From: Bull. A.M.N.H., 79, 1942

SYSTEMATIC PART

ALUCITIDAE

This family is especially interesting owing to the wide distribution of many of its species, several of which are even cosmopolites. The number of species in the present collection is surprisingly small; but the more striking is the relatively large number of new forms. We have taken pains to compare our specimens with descriptions of many species outside the Indo-Malayan and Papuan-Australian regions but still had to describe not less than one genus and six species as new out of the ten species collected by the Expedition.

Key to the Papuan genera of the Alucitidae ¹⁾

1. Hind wing entire (Agdistinae). *Steganodactyla* WALSINGHAM
Hind wing trifid 2
2. Third segment of hind wing with only one anal vein; female frenulum with single bristle; cilia usually with tufts of black scales (Platyptiliinae) . . 3
Third segment of hind wing with more than one anal vein; female frenulum with several bristles; cilia without scale-tufts (Alucitinae) 13
3. Fore wing trifid 4
Fore wing bifid 5
4. Fore wing with first cleft from about middle . . . *Hexadactyla* FLETCHER
Fore wing with first cleft from beyond middle . . . *Deuterocopus* ZELLER
5. Fore wing with one or more costal veins absent 6
Fore wing with all costal veins present, if veins 10 and 11 coincident, then veins 8 and 9 stalked 9
6. Fore wing with vein 3 present, well-developed . . . *Exelastis* MEYRICK
Fore wing with vein 3 absent or obliterate posteriorly. 7
7. Fore wing with vein 7 present *Trichoptilus* WALSINGHAM
Fore wing with vein 7 absent. 8
8. Abdomen uniformly coloured; fore wing with a strong scale-tooth on dorsum beyond cleft. *Diacrotricha* ZELLER
Abdomen variegated; fore wing without scale-teeth on dorsum
. *Cosmoclostis* MEYRICK
9. Fore wing with veins 9, 10 and 11 out of 8 *Tetraschalis* MEYRICK
Fore wing with vein 11 not out of 8 10
10. Fore wing with veins 9 and 10 out of 8 *Fletcherella*, new genus
Fore wing with vein 10 not out of 8 11
11. Fore wing with veins 10 and 11 stalked or coincident
. *Sphenarches* MEYRICK
Fore wing with veins 10 and 11 separate 12
12. Hind wing without black scales in dorsal cilia; frons often with horny cone; fore wing with anal angles of segments weak. *Stenoptilia* HÜBNER
Hind wing usually with black scales in dorsal cilia; frons without horny cone; fore wing with anal angles of segments usually prominent. . . *Platyptilia* HÜBNER

¹⁾ Partially adopted from FLETCHER, Catal. Ind. Ins., vol. 20, pp. III—IV, 1931.

13. Fore wing with vein 7 absent. *Alucita* LINNÉ
 Fore wing with vein 7 present *Oidaematophorus* WALLENGREN

Diacrotricha ZELLER, 1852

Diacrotricha ZELLER, 1852, Linn. Ent., vol. 6, p. 399; etc.

Key to the Papuan species

1. Dark markings of second segment of fore wing situated along its dorsum
 guttuligera spec. nov.
 Dark markings of second segment of fore wing forming transverse bars across
 that segment. *fasciola* ZELLER

***Diacrotricha guttuligera* spec. nov. (fig. 2)**

♂ 16 mm. Head, thorax white. Antenna white, basal half ringed with dark fuscous above; ciliations $1\frac{1}{2}$. (Palpi broken.) Abdomen whitish (denuded), traces of a median longitudinal series of blackish dots. Legs white, anterior leg blackish above, tarsus white-ringed (median legs broken), posterior tibia loosely haired above, two basal segments of posterior tarsus moderately thickened with appressed hairs above. Fore wing cleft from before middle, segments linear. Creamy ? (both fore and hind wing have become greasy). A blackish streak along anterior half of costa, posteriorly becoming fuscous and ill-defined; a coarse fuscous speckling: below costa from base to cleft, thence extending over first segment and forming a small ill-defined streak along base of dorsum of latter; a streak of this speckling along dorsum of wing not reaching base of cleft; first segment with two elongate blackish dots: on and well beyond middle of costa, respectively; a minute longitudinal blackish strigula in apex; two small streaks of blackish-fuscous irroration on dorsum of first segment: beyond middle (between costal dots), and at $\frac{3}{4}$; second segment with a minute blackish dorsal streak beyond base of cleft and two elongate black dots: beyond middle and beyond $\frac{3}{4}$ of dorsum, hardly reaching above middle of segment, first one largest, followed by a few blackish scales; a black point in apex. Cilia pale fuscous-creamy along costa, glossy white elsewhere, with suffused shadily blackish bars opposite dorsal markings of both segments. Hind wing creamy ? (greasy), indication of fuscous irroration above base of dorsum, a blackish point in apex of all segments and a longitudinal spot on middle of second segment. Cilia glossy white.

Tegumen broad at base. Uncus with a slender point. Valvae asymmetrical: right valva with harpe shaped as a moderate hook, left valva broader, harpe a long crochet with bulbate base. Vinculum truncate. Juxta with an asymmetrical long furca: right arm narrow, clavate. Aedoeagus long, slender, with basal part thickened, sinuate. (Slide No. 1039 D, type.)

Sigi Camp, 1500 m, February 17, 1939. One specimen. Distinct by markings of second segment of fore wing which are dorsal and do not extend across wing, so as to form transverse bars.

Deuterocopus ZELLER, 1852

Deuterocopus ZELLER, 1852, Linn. Ent., vol. 6, p. 402; etc.

Deuteroecopus, HOFMANN, Iris, vol. 11, p. 329, 1898 (*lapsus*).

Key to the Papuan species ¹⁾

1. Blackish, fore wing and abdomen without any ferruginous markings. *famulus* MEYRICK
Not blackish, fore wing and abdomen with ferruginous markings 2
2. Pectus and venter whitish 3
Pectus and venter pale yellow 5
3. Fore wing with second cleft at least $\frac{3}{5}$ length of first. . . *socotranus* REBEL
Fore wing with second cleft only about $\frac{1}{2}$ of first. 4
4. Fore wing with a small black scale-tuft on dorsum beneath base of first cleft
. *atrax* FLETCHER
Fore wing without such scale-tuft on dorsum beneath base of first cleft . .
. *tengstroemi* ZELLER
5. Fore wing with second cleft over $\frac{2}{3}$ length of first; dorsal cilia without scale-tuft beneath base of first cleft *torridus* MEYRICK
Fore wing with second cleft $\frac{2}{3}$ or less than $\frac{2}{3}$ length of first; dorsal cilia sometimes with a dark scale tuft beneath base of first cleft. 6
6. Fore wing with second cleft $\frac{2}{3}$ length of first; dorsal cilia without scale-tuft beneath base of first cleft *planeta* MEYRICK
Fore wing with second cleft less than $\frac{2}{3}$ (usually about $\frac{1}{2}$) length of first; dorsal cilia with a dark scale-tuft beneath base of first cleft *ritsemae* WALSINGHAM

Deuterocopus famulus MEYRICK, 1907

Deuterocopus famulus MEYRICK, 1907, Trans. Ent. Soc. Lond. 1907, p. 474, 1908.

FLETCHER, Trans. Ent. Soc. Lond. 1910, pp. 112—113, pl. 44, fig. 2, 1911.

Distribution: Kei Islands, Fergusson Island, d'Entrecasteaux Islands, Halmahera, Batian.

Araucaria Camp, 800 m, March 17, 1939. One female, about 10 mm, badly damaged and mouldy, but apparently belonging to this species.

Fletcherella gen. nov. (fig. 1)

Head with smoothly appressed scales, slightly roughish only in a transverse band between bases of antennae. Ocellus absent. Proboscis developed. Antenna in male $\frac{2}{3}$, filiform, slightly serrulate, simple, scape short, thickened. Labial palpus very long, recurved, sickle-shaped, ascending, basal segment moderate, thickened with scales roughly projecting beneath, median segment long, considerably exceeding base of antenna, cylindrical, rather slender, distinctly gradually tapering towards apex, with closely appressed scales, terminal segment over 1, slender, smooth, acute. Thorax robust, with smoothly appressed scales. Posterior tibia and tarsus smooth-scaled, spurs slender, very long, especially

¹⁾ Chiefly adopted from FLETCHER, Trans. Entom. Soc. Lond. 1910, p. 112, 1911.

anterior inner spur. Fore wing bifid, cleft from $\frac{2}{3}$, anterior segment pointed, posterior with termen twice sinuate, convex in middle; 1b simple, 2 from beyond middle of cell to tornus, 3 from somewhat before angle to middle of termen of posterior segment, 4 from angle to its apex, 5 and 6 short, to cleft, 7 separate, to termen, 8 to costa, 9 and 10 out of 8, 11 from beyond middle. Hind wing short: slightly over $\frac{2}{3}$ of fore wing; trifold, anterior cleft from $\frac{3}{5}$, posterior from well beyond base, first segment linear, narrow,

Fig. 1: *Fletcherella niphadothysana* gen. nov., spec. nov., male, head and wing neuration.

second shorter, with basal half triangularly dilated below, apical half much narrowed, with concave lower edge, third segment linear, somewhat sinuate, slightly over $\frac{1}{2}$, dorsal cilia with black scale-tufts; 2 apparently from base, 3 and 4 connate from angle, to top of dorsal prominence of second segment and to its apex, respectively, 5 and 6 absent, 7 long, to apex of first segment, 8 apparently short, cell open, closing vein reduced to a small basal stump.

Typus generis *Fletcherella niphadothysana* spec. nov., male.

An interesting novel form with long, almost gelechioid palpi. The genus is closely related to *Oxyptilus* and may also be allied with *Sochchora* WALKER, 1864, from Brazil, hitherto regarded as a synonym of *Platyptilia*; *Sochchora* has also curved and ascending palpi, but much shorter and thicker than in our genus. The two other surmised synonyms of *Platyptilia*: *Gilbertia* WALSINGHAM, 1891, and *Crocynoscelus* WALSINGHAM, 1897, from West Africa which both may be distinct from *Platyptilia*, also possess slender, recurved palpi but much shorter than in our genus; moreover, the shape and neuration of hind wing in the three mentioned genera are quite different from those in *Fletcherella*.

We dedicate this genus to the late Mr T. BAINBRIGGE FLETCHER, the well-known authority on the nomenclature of Microlepidoptera and on the taxonomy of the present family.

We regard *Amblyptilia atrodactyla* PAGENSTECHER, 1900, from the Bismarck Islands, as congeneric.

Key to the species of *Fletcherella*

1. Abdomen with a white basal ring *atrodactyla* PAGENSTECHER
- Abdomen with white lateral spots at base. *niphadothysana* spec. nov.

***Fletcherella niphadothysana* spec. nov. (figs. 1, 9)**

νιπάς = snow, *θύσανος* = fringe

♂ 14 mm. Head fuscous-blackish with deep purple gloss, face mixed with whitish scales. Palpus fuscous-blackish, terminal segment paler, median with lower half mixed with whitish. Thorax fuscous-blackish with purple gloss, a triangular whitish spot at each side anteriorly, pleura with a large yellowish-white spot anteriorly, caudal surface between posterior legs pale yellow. Abdomen dark fuscous-blackish, less glossy, posterior margins of segments fuscous-whitish, basal segment with a small whitish lateral spot at extreme base, second segment with a single whitish lateralscale. Legs fuscous-blackish, anterior tibia with three white dots above, tarsal segments with white base; median tibia with a pale median ring, spurs whitish on inner side; posterior tibia with two elongate white spots above: before middle and at $\frac{2}{3}$, respectively, posterior spurs with a broad median white ring, narrowly open above, posterior tarsus with apical half of basal segment except below and with two apical segments entirely: white. Fore wing narrow, rather abruptly dilated at $\frac{3}{5}$, cleft along terminal $\frac{1}{3}$, costa gently concave in middle; first segment moderately broad, costa gently curved, curve becoming stronger posteriorly, apex obtusely pointed, termen straight; second segment broader, costal edge faintly concave, apex acute, termen twice sinuate, with a rounded prominence in middle, oblique, dorsum of wing concave posteriorly, slightly projecting at $\frac{1}{3}$; dark fuscous-blackish, with purple gloss in certain lights; an indication of two small whitish discal spots: at $\frac{1}{3}$ and $\frac{1}{2}$; a small elongate and narrow costal white dot before middle of first segment, a small wedge-shaped, inwardly oblique whitish costal mark before apex, another similar mark on $\frac{2}{3}$ of dorsum of first segment, third mark on $\frac{2}{3}$ of costa of second segment, thus situated slightly before preceding; fourth whitish mark longitudinal, somewhat beyond centre of second segment. Cilia dark fuscous, along anterior half of cleft snow-white, two broad white bars: at $\frac{1}{3}$, and $\frac{2}{3}$ of tornus of second segment, respectively; dorsum of fore wing with cilia white to before tornus, a suffused blackish bar before $\frac{2}{3}$ of wing. Hind wing fuscous-blackish, third segment with an elongate white spot at its basal $\frac{1}{4}$, narrowly edged with blackish along dorsum; cilia whitish, towards apex of first and second segment and along first cleft except at its base suffused with light fuscous; a tuft of black scales opposite dorsal prominence of second segment; cilia of third segment with some

three broad black dorsal scales: before, below and beyond white spot, a tuft of black scales in dorsal cilia at $\frac{3}{4}$, a smaller tuft opposite this in costal, and a minute tuft in apical cilia.

Tegumen conical. Uncus sickle-shaped, pointed. Valva long, narrow, sacculus haired along edge; harpe, a small dentoid chitination; cucullus with a median haired ridge. Aedocagus moderate, narrowed, curved. Furca moderate, paired, each part dilated towards base. Juxta, a rounded plate, upper edge erected in a point. Vinculum small, rounded, emarginate in middle. (Slide No. 906 D, type.)

Araucaria Camp, 800 m, March 28, 1939. One specimen.

Platyptilia HÜBNER, 1826

Platyptilia HÜBNER, 1826, Verz. bek. Schmett., p. 429; etc.

Key to the Papuan species

1. Dorsal cilia of third segment in hind wing with an irregular series of black scales from base to just beyond middle *phanerozona* spec. nov.
Dorsal cilia of third segment in hind wing without any black scales or scale-tufts along basal half of that segment 2
2. Dorsal cilia of third segment in hind wing with a strong triangular black scale-tuft beyond middle of that segment, no black scales between this and apex of segment *archimedes* MEYRICK
Dorsal cilia of third segment in hind wing not thus scaled 3
3. Dorsal cilia of third segment in hind wing with a strong black bar before apex and a few black scales from this to apex of segment *monotrigona* spec. nov.
Cilia of third segment in hind wing entirely mixed with black scales along apical third of that segment *enargota* DURRANT

***Platyptilia monotrigona* spec. nov.**

μovo = one, *τρίγωνον* = triangle

♂ 20 mm. Head, thorax pale ochreous mixed with fuscous, apex of latter suffused with dark fuscous, pectus yellowish-white. Antenna blackish-fuscous, base pale ochreous. Palpus pale fuscous, median segment suffused with dark fuscous laterally, roughly expanded towards apex, terminal segment pointed. Abdomen fuscous, dark fuscous above, towards base with a short whitish pleural streak (posterior part of abdomen missing). Legs pale fuscous, slightly irrorated with darker fuscous, anterior femur and other segments of anterior leg above dark fuscous, tarsal segments of this leg with narrow whitish basal rings; posterior leg pale fuscous, tibia with basal fourth white, tinged with yellowish, a cloudy suffused ring opposite, and around base of both pairs of spurs, spurs fuscous, with a subapical fuscous-whitish ring; posterior tarsus fuscous, basal half of segments whitish. Fore wing cleft from beyond $\frac{2}{3}$, termen of first segment rounded, tornus rounded-prominent, termen of second segment rounded, projecting above middle, tornus rounded. Fuscous-whitish, suffused with

pale ochreous, markings fuscous and blackish-fuscous. Costa suffused with fuscous from base to base of cleft, with a series of irregular darker fuscous transverse spots; a triangular blackish-fuscous costal patch before base of cleft, with anterior edge rather straight, oblique, top pointed, reaching to lower angle of cell; posterior edge of costal patch gently concave, almost vertical, before base of cleft; first segment with an elongate-semiovate fuscous-whitish spot suffused with pale ochreous, narrowed on dorsum of that segment, extending along costa from above base of cleft to slightly beyond middle; a broad transverse dark terminal patch occupying posterior half of costal segment and $\frac{2}{3}$ of second, traversed somewhat beyond middle by a white line, tolerably parallel to termen: dark fuscous before this line, fuscous-grey beyond, with dark fuscous colour extending along costa of first segment to its apex and along dorsum of second over its tornal fourth; a suffused dark fuscous line around cleft; dorsum of wing with a semiovate dark fuscous spot at $\frac{1}{4}$, traversed before middle by a pale line; dorsum also with a dark fuscous marginal streak to before $\frac{3}{4}$, narrowly connected with preceding and interrupted by three dots of ground colour. Cilia (much damaged) greyish-white with blackish-fuscous bars: two on termen of first segment and three on that of second segment; dorsal cilia pale fuscous with three black bars: slightly before $\frac{2}{3}$, edged with whitish, and a smaller bar, distinctly *before* base of cleft; cilia opposite terminal patch fuscous. Hind wing cleft from about middle and from towards base, first segment spatulate, second obliquely lanceolate, acute, anal angle rounded, third segment linear. Pale fuscous-grey densely irrorated except in disc with fuscous-grey. Cilia pale fuscous-grey, dorsum of third segment with a strong black bar before apex, and a few black scales from this to apex, becoming smaller posteriorly, without a trace of dark scales between base of wing and these scales.

Moss Forest Camp, five km northeast of Lake Habbema, 2800 m, October 16, 1938. One specimen. Very near *P. sijthoffi* (SNELLEN), differing by the pale legs, by the shape of the pale spot on base of first segment of fore wing which is narrowed on dorsum (in *sijthoffi* on costa), and by the position of the second black bar in dorsal cilia (in *sijthoffi* beyond base of cleft). The unique specimen is in bad condition but the species can sufficiently be discriminated from *sijthoffi* by the combination of these characters.

***Platyptilia phanerozona* spec. nov. (figs. 6, 8)**

φανερός = conspicuous, *ζώνη* = a belt

♀ 17 mm. Head, palpus fuscous-grey, orbit or eye white. Antenna dark fuscous. Thorax fuscous-grey irrorated with darker fuscous, metathorax greyish-white. Abdomen fuscous irrorated with whitish, first and second segments greyish-white, anal tuft ochreous-whitish. Legs pale greyish, densely irrorated and suffused with fuscous, posterior leg rather pale

fuscous, femur medianly whitish. Fore wing cleft from well beyond $\frac{2}{3}$; first segment with costa curved, apex pointed, termen sinuate, tornus gently rounded; second segment slightly spatulate, costa straight, termen very gently biconcave, anal angle rounded but distinct. Pale ochreous-fuscous, densely irrorated with rather dark fuscous, towards base slightly tinged greyish. A narrow marginal whitish streak on costa beyond base of cleft, preceded by somewhat erect, triangular costal patch; this patch dark fuscous, rather well defined below but becoming abruptly pale and hardly perceptible above upper edge of cell, with both edges straight, posterior edge somewhat inwardly oblique, not touching base of cleft; a transverse blotch of ill-defined fuscous irroration, darker than remainder of wing, crossing both segments; this blotch occupying about median third of first segment, and more than basal half of second, from base of cleft; segments beyond this blotch slightly paler than the remainder of wing. Cilia pale ochreous-fuscous along costa, fuscous-whitish elsewhere; a dark fuscous antemedian fascia from apex to around tornus of first segment, more sinuate than its termen, forming a narrow bar in its apex; a more suffused dark fuscous antemedian line around top of second segment, forming more distinct elongate blotches, viz., on costa before apex, just below apex, and in tornus; cilia along third fourth of dorsum of wing with dark subapical shadow, a small rather distinct blackish blotch with pale base well beyond middle of wing, and a shadowy narrow blackish bar just beyond base of cleft. Hind wing cleft from before middle and from rather beyond base; pale fuscous irrorated with darker fuscous: somewhat paler and slightly more brownish-tinged than fore wing. Cilia fuscous with faint bronze reflections, along dorsum of third segment with an irregular but rather dense series of blackish scales from base to just beyond middle.

Ovipositor truncate, dilated, anapophyses reaching almost to its apex. Limen represented by two oval converging lobes above ostium. Ductus bursae with a long tubular colliculum. Bursa copulatrix spheroid. Signa slender, minutely corrugated blades (Slide No. 1040 D, type).

Lake Habbema, 3250—3300 m, August 5, 1938. One specimen. Nearest to *P. inceptrix* MEYRICK, from Hawaii.

Oidaematophorus WALLENGREN, 1862

Oidaematophorus WALLENGREN, 1862, K. Svensk. Vet. Akad. Handl., vol. 3, No. 7, p. 19. JORDAN, Ent. Mo. Mag., vol. 6, p. 125, 1869. WOCKE, in HEINEMANN, Kleinschm. Deutschl., vol. 2, part 2, p. 799, 1876. TUTT, Pteroph. Brit., p. 103, 1896. Ent. Rec., vol. 17, p. 35, 1905. BARNES & LINDSEY, Contr. Nat. Hist. Lep. N. Amer., vol. 4, p. 374—380, 1921. FORBES, Lep. N. York, p. 647, fig. 400, 1924. FLETCHER, Mem. Dept. Ind., Ent., vol. 11, p. 152, 1929. Catal. Ind. Ins., vol. 20, p. 40, 1931. PIERCE, Genit. Br. Pyr. Delt. Plumes, p. 50, pl. 27—28, 1938.

Oedematophorus ZELLER, Stett. Ent. Ztg., vol. 28, p. 331, 337, 1867; etc.

Pterophorus WALLENGREN, 1862 (*nec* GEOFFROY, 1762), K. Svensk. Vet. Akad. Handl., vol. 3, No. 7, p. 26; etc.

Leioptilus WALLENGREN, 1862, *tom.cit.*, p. 21; etc.

Lioptilus ZELLER, Stett. Ent. Ztg., vol. 28, p. 331, 1867; etc.

Alucita MEYRICK, 1890 (*nec* LINNÉ, 1758), Trans. Ent. Soc. Lond. 1890, p. 487—488; etc.

Ovendenia TUTT, 1905, Ent. Rec., vol. 17, p. 37.

Hellinsia TUTT, 1905, *tom.cit.*, p. 37.

Emmelina TUTT, 1905, *tom.cit.*, p. 37.

The genitalia of the British species have been described and figured by PIERCE (1938). The male genitalia are asymmetrical, and rather uniform, but the claspers, which often differ considerably in right and left valva, provide clear-cut specific differences.

Key to the Papuan species of *Oidaematophorus*

1. Fore wing with second segment lanceolate, anal angle indefinite. 2
 Fore wing with second segment broader, anal angle distinct 3
2. Fore wing cleft from before $\frac{2}{3}$; light brownish-fuscous, costal third light brownish; white, dilated streaks: along dorsum of first segment and along dorsum of wing *mesoleucus* spec. nov.
 Fore wing cleft from near middle; ground colour creamy-white with some fuscous irroration towards dorsum anteriorly *probatas* MEYRICK
3. Male genitalia: left valva armed with a horn at about middle, directed downward and with a subapical spike *irenaeus* spec. nov.¹⁾
 Male genitalia: left valva armed with a submedian small ridge and an antemedian transverse bluntly pointed knob directed obliquely downward; no apical spike *lienigianus* ZELLER

Oidaematophorus mesoleucus spec. nov. (fig. 4)

μέσος = middle, λευός = white

♂ 19—23 mm. Head brownish-white, collar and face light brownish. Antenna fuscous. Palpus short, fuscous. Thorax creamy-white, apical half of tegula slightly suffused with pale brownish; pectus whitish, faintly tinged yellowish. Abdomen creamy-white, segments 3—7 more or less infuscated above, posterior edge of these segments creamy. Legs fuscous finely mixed with white below, anterior leg whitish, dark fuscous above, posterior tarsus whitish. Fore wing cleft from before $\frac{2}{3}$; first segment with narrow, falcate apex; second segment lanceolate, without anal angle. Costal third to $\frac{2}{3}$ of first segment light brownish, becoming pale tawny posteriorly; more than median third light brownish-fuscous; dorsum of first segment with a creamy-white streak from base of cleft gradually dilated posteriorly, reaching costa at $\frac{2}{3}$ of that segment, and occupying entire apex; another such streak along dorsum of wing from base, not

¹⁾ We do not use colouring and markings for discrimination of these two nearly allied species, as *lienigianus* is considerably variable while *irenaeus* which may be variable as well, is represented by one single specimen. For genitalia of *lienigianus* see PIERCE, Genit. Brit. Pyrales, Delt. & Plumes, p. 51, plate 28, 1938.

Genitalia of Alucitidae. Fig. 2: *Diacrotricha guttuligera* spec. nov., male. Fig. 3: *Stenoptilia galactostacta* spec. nov., male. Fig. 4: *Oidaematophorus mesoleucus* spec. nov., male. Fig. 5: *Stenoptilia iriana* spec. nov., male. Fig. 6: *Platyptilia phanerozona*, spec. nov., female. Fig. 7: *Oidaematophorus irenaeus* spec. nov., male. Fig. 8: *P. phanerozona* spec. nov., bursa copulatrix. Fig. 9: *Fletcherella niphadothysana* gen. nov., spec. nov., male.

reaching cell, gradually dilated from middle, reaching to $\frac{1}{3}$ of costal edge of second segment, and occupying that entire segment beyond this point; a transversely ovate, somewhat oblique, cloudy dark fuscous dot on base of cleft. Cilia brownish-fuscous, along their base lighter brownish-tawny, along costa and around apex of first segments blackish-fuscous. Hind wing glossy pale fuscous finely mottled with darker fuscous. Cilia greyish-fuscous with faint brassy reflections.

Right clasper a small blunt process, bristled at base, followed by a narrow small fold. Left clasper with an almost rectangular basal plate and two apical pointed projections, proximal one acute. Juxta oblique, broadest below furcation, points sinuate, slender. (Slide No. 1038 D, holotype.)

Lake Habbema, 3250—3300 m, August 1, 1938 (holotype). August 4—30, 1938. Scree Valley Camp, 3800 m. September 25, 1938. Seven specimens.

***Oidaematophorus irenaeus* spec. nov. (fig. 7)**

εἰρηναῖος = peaceful

♂ 18 mm. Head, antenna, thorax, abdomen whitish-ochreous, collar of head tawny. Palpus pale ochreous, terminal segment fuscous. Legs pale ochreous, infuscated above, median tibia with apical $\frac{1}{3}$ fuscous, posterior tibia mixed with brownish-fuscous above. Fore wing cleft from before $\frac{2}{3}$, first segment with costa gradually curved, dorsum straight, second segment pointed, termen gently rounded, very oblique, anal angle broadly rounded, hardly indicated. Whitish-ochreous, costal fourth of wing from base to apex suffused with light ochreous; a few minute scattered fuscous scales in a row below middle of costa; base of costal edge infuscated; a narrow dark coffee-brown strigula along costa well beyond base of cleft; a discal point at $\frac{1}{3}$ and a somewhat suffused transversely ovate dot before base of cleft from dorsum of first segment to lower angle of cell; dorsal $\frac{1}{3}$ of wing from beyond base, and entire second segment, suffused with light brownish-fuscous, from beyond base of wing to below base of cleft moderately irrorated with fuscous; thence this irroration extending along lower half of second segment almost to its apex; a narrow suffused ochreous streak along basal third of dorsum from beyond base. Cilia along costa pale ochreous, elsewhere golden-fuscous, becoming paler towards base of cleft; a white bar on dorsum of first segment before apex. Hind wing glossy pale greyish-fuscous mixed and irrorated with darker fuscous. Cilia golden-fuscous.

Right clasper a moderate horn directed downward, followed by a long thickened fold, and an subapical oblique spike. Left clasper oblique, with a very broad base produced apicad in a blunt point and a small median longitudinal fold; proximal projection long, curved at base; distal projection moderate, acute. Anellus broadest beyond furcation, arms sinuate, stout, blunt, short-bristled, left one shortest (Slide No. 1041 D).

Sigi Camp, 1500 m, February 26, 1939. One specimen. Closely allied to *O. lienigianus* ZELLER, but with male genitalia different.

Oidaematophorus spec.

Moss Forest Camp, five km northeast of Lake Habbema, 2800 m, October 19, 1938. 1 female, in damaged condition and not identifiable (Gen. Slide No. 1049 D).

Stenoptilia HÜBNER, 1826

Stenoptilia HÜBNER, 1826, Verz. Eur. Schmett., p. 430. MEYRICK, Trans. Ent. Soc. London. 1890, p. 487, pl. 15, figs. 4, 12. Handb. Brit. Lep., p. 440, fig., 1895. Gener. Ins., vol. 100, p. 18, 1910. Lepid. Catal., vol. 17, p. 28, 1913. Rev. Handb. Brit. Lep., p. 459, fig., 1928. HOFMANN, Ber. Nat. Ver. Regensb., vol. 5, p. 48, 92—97, 1896. FERNALD, Pteroph. N. Amer., p. 57, 1898. U.S. Nat. Mus. Bull., vol. 52, p. 447, 1903. REBEL, Catal. Pal. Lep., vol. 2, p. 76, 1901. TUTT, Entom. Rec., vol. 17, p. 35, 1905. Brit. Lep., vol. 5, p. 360—361, 1906. FLETCHER, Spol. Zeyl., vol. 6, p. 10, 1909. Mem. Agr. Ind., Ent., vol. 11, p. 210, 1929. Catal. Ind. Ins., vol. 20, p. 32—33, 1931. SPULER, Schmett. Eur., vol. 2, p. 321, fig. 96, 1910. BARNES & LINDSEY, Contrib. Nat. Hist. Lct. N. Amer., vol. 4, p. 349—350, 1921. FORBES, Lep. N. York, p. 646, fig. 403, 1924. LINDSEY, Denison Univ. Bull., vol. 20, p. 192, pl. 20, fig. 9, 1924. HUDSON, N. Zeal. Lep., p. 210, 1928. PIERCE, Genit. Br. Pyr. Delt. Plumes, p. 48, pl. 27, 1938.

Mimaesoptilus WALLENGREN, 1862, K. Svensk. Vet. Akad., vol. 3, No. 7, p. 17, 1862; etc.

Mimescöptilus, ZELLER, Stett. Ent. Ztg., vol. 28, p. 332, 337, 1867; etc.

Mimaesioptilus, BARRETT, Lep. Brit. Is., vol. 9, p. 373, 1904.

Doxosteres MEYRICK, 1886, Trans. Ent. Soc. Lond. 1886, p. 10—11, 1887.

Adkinia TUTT, 1906, Brit. Lep., vol. 5, p. 318—319; etc.

The genitalia of the British species have been described and figured by PIERCE (1938). The two following species possess male genitalia of the same character but differ considerably by a well-developed uncus, a less developed sacculus, and a peculiar, bristled vinculum. Perhaps further data on generic characters of *Stenoptilia* from other countries will make it possible in the future to divide the group in separate genera.

Key to the Papuan species of *Stenoptilia*

1. Larger species: 26—28 mm, light fuscous; fore wing: dorsal cilia of first segment mostly mixed with blackish scales, conspicuously darker than ground colour *iriiana* spec. nov.
- Smaller species: 17—20 mm, brownish; fore wing: if dorsal cilia of first segment mixed with dark scales, then these cilia not conspicuously darker than ground colour *galactostacta* spec. nov.

***Stenoptilia galactostacta* spec. nov. (fig. 3)**

γάλα = milk, στακτός = dotted

♂ 17—20 mm. Head light greyish-tawny. Palpus light tawny-ochreous. Antenna dark brown. Thorax light ochreous-tawny, in middle more or less suffused with greyish-fuscous, tegula mixed with white towards apex;

pectus tawny. Abdomen tawny, suffused with light ochreous towards base, suffused with greyish-fuscous from beyond base to before apex above; two longitudinal yellowish-white pleural spots towards base. Legs tawny, anterior leg infuscated, tarsus becoming blackish-fuscous towards apex; median femur whitish-yellow laterally except above, posterior leg light fuscous-grey. Fore wing cleft from beyond $\frac{2}{3}$; first segment with costa gently curved, termen subconcave, anal angle distinct; second segment spatulate, termen rounded, tornus rounded, prominent. Tawny, becoming brownish-fuscous beyond base of cleft; costa with a broad dark coffee-brown attenuated streak reaching below upper edge of cell, lower edge suffused; discal half of wing irrorated with white from base of wing to base of cleft; this irroration narrowly extending along dorsum of first segment, dilated into a wedge-shaped area before tornus, further extending along costa of second segment, also occupying apical third of this segment, but not reaching tornus; a subcostal row of conspicuous irregular white dots along dark costal streak from beyond base of wing to before base of cleft; a faint subtrapezoid tawny-fuscous spot, rather paler than surrounding ground colour, running across first segment beyond its base and interrupting dark costal streak; this spot slightly irrorated with white on anterior half except on costa; an ill-defined narrow dark-coffee-brown line along dorsum of first segment. Cilia of first segment along costa and in apex dark coffee-brown, along termen and in tornus rather dark fuscous, with basal half ochreous-whitish except in tornus, along dorsum tawny, mixed with a few whitish basal scales posteriorly; cilia of second segment tawny, along costa irrorated with whitish, and with a dark coffee-brown antemedian fascia, interrupted so as to form rather isolated spots: a small spot on costa before apex, and larger spots in apex, and opposite middle of termen; dark grey cloudy spots: before, and in tornus; tornal cilia suffused with grey except along base; cilia along dorsum of wing rather light tawny. Hind wing rather dark brown with purplish tinge, basal half of third segment suffused with ochreous-tawny. Cilia rather dark fuscous with brassy reflections, along basal half of dorsum of third segment with an irregular series of minute dark scales along base.

Tegumen well-developed, narrowed. Uncus a long slender hook. Cucullus obtusely pointed, with a tooth on ventral edge, sacculus simple, moderately constricted before top. Juxta with a double furca: upper lobes slender, long, truncate, lower lobes short, stout. Aedoeagus strongly curved, base bulbate. Cornutus a short spike (Slide No. 1037 D, holotype).

Letterbox Camp, 3600 m, September 5, 1938 (holotype), September 3—8, 1938. Scree Valley Camp, 3800 m, September 19, 1938. Lake Habema, 3250—3300 m, August 5, 1938. Seven specimens. Nearly allied to the following species, but much smaller, and darker tinged.

Stenoptilia iriana spec. nov. (fig. 5)

♂ 26—28 mm. Head and thorax creamy, faintly tinged yellowish.

Antenna dark fuscous, towards base suffused with whitish. Palpus whitish, median segment laterally except towards edges suffused with light tawny, and mixed with a few fuscous scales, terminal segment slightly infuscated towards base. Abdomen greyish-fuscous, mixed with creamy, posterior edges of segments and basal segment creamy, anal tuft ochreous-whitish. Legs creamy, anterior femur and all tibiae fulvous-brown above, all tarsi glossy-grey above. Fore wing cleft from before $\frac{3}{4}$; first segment with costa curved, termen straight, oblique, tornus angulate; second segment with termen gently rounded, tornus strongly rounded. Pale fuscous, a very faint indication of a whitish streak along fold from base to dorsum; costa with a dark fuscous rather narrow streak from base to before apex; this streak interrupted beyond $\frac{3}{4}$ of costa by a costal extension of a suffused ochreous-whitish streak, extending along veins 11 and 10; dorsal edge of dark costal streak marked with a row of greyish-white irregular small dots, from base of wing to before base of cleft; an ill-defined narrow streak of cloudy greyish-fuscous suffusion along upper edge of cell, becoming obliterate towards base; a faint greyish suffusion in apex of first segment, sometimes absent; a whitish terminal suffusion below this; a slightly inwardly oblique dark fuscous discal transverse dash from lower angle of cell, somewhat attenuated above, becoming less distinct and merging in a faint smoky suffused line along upper part of closing vein; dorsum of first segment sometimes with a row of minute blackish-fuscous scales from beyond base (mostly absent); a suffused fuscous patch along lower half of termen of second segment, edged anteriorly by a very faint inwardly oblique white fascia across segment, interrupted above middle. Cilia fuscous along costa, white opposite apex of first segment and in cleft; cilia light bronze-fuscous, with basal third blackish-fuscous, along termen, and in tornus of both segments, along posterior part of costa and along extreme part of dorsum of second segment; a whitish bar below apex of second segment, a grey cloudy bar in its tornus; cilia along dorsum of fore wing pale whitish-fuscous-ochreous, mixed with a few narrow dark fuscous scales. Hind wing rather light bronze-fuscous, cilia brassy golden-fuscous, glossy.

Uncus robust. Cucullus almost truncate, with a large ventral tooth, sacculus simple, not constricted. Vinculum, a triangular, dentate plate. Juxta with upper lobes shaped like transverse triangular plates, lower lobes, small pads. Aedoeagus with strongly bulbate base. Signum a small tooth (Slide No. 1036 D, holotype).

Sree Valley Camp, 3800 m, September 20, 1938 (holotype), September 19—20, 1938. Five specimens. This species is distinct by the white-dotted costal streak which it has in common only with the preceding species. Uniformly coloured except one specimen which has head, body and fore wing suffused with light tawny ochreous, disc of fore wing, posterior fifth of first, and posterior half of second segment irrorated with fuscous-white, dark marginal scaling extending along entire cleft, and terminal cilia tinged with darker fuscous.

Steganodactyla WALSINGHAM, 1891

Steganodactyla WALSINGHAM, 1891, Entom. Monthl. Mag., vol. 27, p. 241. Novit. Lepid., vol. 1, p. 3 (separ.), pl. 12, figs. 3, 3a-b, 1892. FLETCHER, Mem. Agric. Ind., Ent., vol. 11, p. 209, 1929. Catal. Ind. Ins., vol. 20, pp. 54-55, 1931.

Ochyrotica (part) MEYRICK, Gener. Ins., vol. 100, p. 20, 1910. Lepid. Catal., vol. 17, p. 31, 1913. FLETCHER, Catal. Ind. Ins., vol. 20, p. 55, 1931.

Key to the Papuan species

1. Fore wing with ground colour snow-white 2
Fore wing with ground colour pale ochreous *concurrsa* WALSINGHAM
2. Fore wing with margin and a postmedian transverse fascia chestnut-brown *connexiva* WALSINGHAM
Fore wing with markings reduced to an incomplete costal streak only . . . 3
3. Fore wing with two small fuscous streaks: along costa posteriorly and along termen; three dorsal and one plical fuscous spots; no spot before termen *cretosa* DURRANT
Fore wing with a brown costal streak from base twice interrupted before apex; three brown spots on dorsum, one small spot in tornus, one triangular spot before termen *bürgersi* GAEDE

Steganodactyla bürgersi (GAEDE, 1916)

Ochyrotica bürgersi GAEDE, 1916, Intern. Entomol. Zeitschr. Guben, vol. 10, p. 81.

Distribution: North Central New Guinea: Malu (Kaiserin Augustafluss Expedition).

Balicm Camp, 1700 m, November 16-27, 1938. One female, rather damaged, but apparently belonging to this species.

PHALONIIDAE

Only two species of this family, which is characteristic for the Palaearctic region, were recorded from New Guinea before. To these we are able to add two more species, one of them belonging to a peculiar new genus.

Key to the Papuan genera

1. Hind wing with veins 3 and 4 remote at base *Heliocosma* MEYRICK
Hind wing with veins 3 and 4 stalked 2
2. Thorax without crest *Clysiana* FLETCHER
Thorax with posterior crest *Arachniotes* gen. nov.

Arachniotes gen. nov. (fig. 10)

ἀράχνη = like a spider's web

Head with appressed scales. Ocellus posterior. Proboscis moderate. Maxillary palpus minute, rudimentary. Antenna $\frac{3}{4}$, shortly ciliate in male, scape short, without pecten. Palpus moderate, ascending, median segment dilated towards apex by roughly projecting scales above and

beneath, terminal segment short, subacute. Thorax with a posterior crest. Fore wing without costal fold, 1b furcate almost to middle, 2 from before $\frac{3}{4}$ of lower edge of cell, 3 and 4 closely approximated at base, from angle, 5 and 6 parallel, 5 much nearer to 4 than to 6, 7 and 8 stalked, 9 connate with stalk, 10 halfway between 9 and 11, 11 from $\frac{1}{2}$. Hind wing $1\frac{1}{2}$,

Fig. 10: *Arachniotes dactylota* gen. nov., spec. nov., male, head and wing neuration

without cubital pecten, cilia $\frac{1}{2}$; with long fringe of scales appressed against upper surface of wing along basal half of costa, this basal half folded downward; 2 from beyond $\frac{2}{3}$, 3 and 4 stalked from angle, 5 parallel, 6 and 7 stalked, 8 concealed under fold, closing vein very oblique.

Typus generis *Arachniotes dactylota* spec. nov., male.

Correlated with *Clysiana* FLETCHER, the male genitalia of which are very similar. Differs by the presence of a thoracic crest.

***Arachniotes dactylota* spec. nov. (figs. 10, 11)**

$\delta\alpha\kappa\tau\upsilon\lambda\acute{o}\tau\eta\varsigma$ = with finger-shaped markings

δ 13 mm. Head and antenna pale ochreous. Palpus dark fuscous, upper edge of terminal segment except at base pale ochreous. Thorax fuscous; with a suffused median transverse band, and with apex of posterior tuft, pale ochreous. Abdomen pale fuscous, whitish-ochreous along basal half, anal tuft light ochreous. Anterior legs blackish (other missing). Fore wing elongate-subovate, rather narrow, costa little curved at base, straight posteriorly, apex obtusely pointed, termen slightly convex, very oblique, tornus broadly rounded. Rather dark greyish-fuscous-olive, retinate with glossy pale ochreous as follows: base of wing with a pale suffusion except on costa and dorsum; this suffusion almost connected posteriorly with a suffused round spot reaching from below costa to fold at $\frac{1}{4}$, and confluent below with a narrow gradually curved longitudinal light streak from above $\frac{1}{4}$ of dorsum; this streak running obliquely to below $\frac{1}{2}$ of costa, thence below costa, and parallel to its third fourth; from there becoming

straight, somewhat narrower, and of a whitish tinge, running to $\frac{2}{3}$ of termen, furcate before end; parallel to beginning and end of this streak, two pale ochreous straight streaks: from above $\frac{2}{5}$ of dorsum to fold and from costa before apex to $\frac{1}{3}$ of termen, respectively; subterminal streak broader, whitish tinged; a broad, indistinct, angulate transverse fascia from posterior $\frac{1}{3}$ of dorsum, reaching obliquely halfway across wing, thence running towards costa beyond $\frac{1}{2}$, and confluent above with pale longitudinal above mentioned streak; terminal part of wing beyond transverse fascia suffused with blackish; posterior half of costa to before apex pale ochreous, with a row of minute greyish-olive transverse strigulae; apex dark fuscous-olive, with a small white dot; dorsum from before base to $\frac{2}{3}$ with a row of black points; tornal edge suffused with black. Cilia ochreous-whitish, blackish in apex, mixed with a few dark fuscous scales along middle, two dark leaden-grey dots on tips opposite tornus. Hind wing glossy pale ochreous, sparsely scaled, suffused with fuscous towards apical and terminal edge, cilia pale ochreous-fuscous.

Fig. 11: *Arachniotes dactylota* gen. nov., spec. nov., male, genitalia.

Tegumen broad, short. Uncus small, pad-like, weak, bristled. Socius long, curved, pending. Subscaphium short, rather stout, curved, bifid. Transtilla indefinite. Valva rather narrow, cucullus narrowed, top rounded, sacculus narrow. Vinculum small. Juxta semimembraneous. Aedoeagus huge, stout, cylindrical, top truncate. Socii, five curved thorns, and one large spike (Slide No. 505 D).

Mist Camp, 1800 m, January 1, 1939. One specimen.

Clysiana FLETCHER, 1940

Clysia HÜBNER, 1826 (preoccupied), Verz. bek. Schmett., p. 409. MEYRICK, Handb. Brit. Lep., p. 556, 1895. Revis. Handb. Brit. Lep., p. 494, 1928. KENNEL, in SPULER, Schmett. Eur., vol. 2, p. 255, 1907. Palaearect. Tortric., p. 240, 1913.

FERNALD, Genera Tortrie., pp. 18, 58, 1908. WALSINGHAM, Biol. Centr. Amer., Het., vol. 4, p. 298, 1914. PIERCE, Genit. Brit. Tortr., p. 26, 1922. FLETCHER, Mem. Agric. Ind., Ent., vol. 11, p. 50, 1929. Catal. Ind. Ins., vol. 22, p. 4, 1931.

Clysiana FLETCHER, 1941, Entomologists Rec., vol. 52, p. 17. DIAKONOFF, Treubia, vol. 18, pp. 397-398.

Key to the Papuan species

1. A transverse dark antemedian fascia present *neurosema* MEYRICK
- No transverse fascia. *scytalephora* spec. nov.

Clysiana scytalephora spec. nov. (fig. 12)

συντάλη = a club, φέρω = to bear

♀ 15 mm. Head, antenna and palpus pale ochreous tinged brownish, median segment of palpus slightly infuscated towards base. Thorax pale ochreous irrorated with brownish. Abdomen dark fuscous, paler towards base, with pale ochreous-whitish gloss. Legs pale ochreous, anterior tibia and tarsus infuscated, pale-ringed. Fore wing elongate, dilated, broadest at $\frac{3}{4}$, costa little curved at base, straight beyond base, faintly bent at $\frac{3}{4}$,

Fig. 12: *Clysiana scytalephora* spec. nov., female genitalia.

apex narrow, obtuse, termen gently concave, very oblique. Pale ochreous with golden gloss, sparsely transversely strigulated, and banded with dull ochreous, markings dark fuscous. Base of costa with a small suffused dark brown spot, followed by four small dots, a moderate triangular spot at $\frac{3}{5}$; this spot suffused with pale greyish-fuscous below costa, with a blackish streak along costal edge; this spot followed by four minute transverse strigulae, and by four subtriangular moderate dark fuscous dots along posterior $\frac{2}{5}$ of costa, becoming smaller posteriorly, last dot subapical; an

inwardly oblique moderate transverse dark brown streak, running from $\frac{1}{4}$ of dorsum to lower edge of cell at $\frac{1}{3}$ of wing, top adjacent to an elongate moderate spot of orange-brownish suffusion in cell, almost reaching triangular costal spot; a small triangular dark fuscous spot on $\frac{3}{4}$ of dorsum, a point on middle of closing vein; some four vertical dark brown strigulae on termen suffused with orange-brownish, second one on middle of termen, continued by a faint orange-brownish line with penultimate costal dot; a round spot of orange-brownish irroration in apex. Cilia pale golden-ochreous, a narrow interrupted dark fuscous antemedian line; apical third of cilia with a row of dark fuscous dots. Hind wing and cilia pale golden-ochreous, tinged brownish.

Ovipositor elongate. Eighth segment moderately erect, cylindrical. Ostium wide, dorsal wall with a transverse thickened bar. Limen, simple, a thickened short-haired pad at each side. Ductus bursae rather short, wide, with strongly plicate wall, upper part cup-shaped, short-dentate. Bursa copulatrix small, spheroid, covered throughout with strong thorns with dilated bases, opposite opening of ductus bursae becoming long spines (Slide No. 823 D).

Lake Habbema, 3250—3300 m, August 20, 1938. One specimen. Related to *C. reliquatrix* MEYRICK, from Java.

TORTRICIDAE

Older authors, especially those who specialised in the Palaearctic fauna, regarded the tortricoid group of Microlepidoptera, known at the time, as belonging to one single family, the Tortricidae. It was MEYRICK who raised this group to the rank of a superfamily under the name "Tortricina" and separated the families Phaloniidae, Tortricidae (including Ceracidae), Eucosmidae (= Olethreutidae *auct.*), and Chlidanotidae.

This classification was accepted and for a long time used by many entomologists, the present author included. Lately, however, MEYRICK's views were severely criticised. Especially his separation of the Tortricidae from the Eucosmidae was attacked and rejected by several authors, as, e.g., by TURNER, by JANSE, and recently by OBRATSOV.

The relation of these two tortricoid groups is indeed very close and there are no "absolute" characters available for their separation. Even the most trustworthy feature: the presence in the Eucosmidae of a cubital pecten (a pecten of hairs along the lower edge of the cell in the hind wings) is not reliable. A cubital pecten is present in several genera of the Tortricidae (as, e.g., in a new genus described below), while it is absent in some genera of the Eucosmidae. It is true that the tortricid genera possessing a cubital pecten in other respects are not closely related with the Eucosmidae. Still we are now satisfied that for a more natural classification the two groups have to be united as one family, Tortricidae, and must be sunk to the rank of subfamilies under the names Tortricinae and Eucosmnae.

Contrary to the lack of superficial structural characters for separation, i.e., those of the body and the wings, the peculiarities of the male genitalia, the number of the socii, when present, in the females (Tortricinae, one socius, Eucosminae, two socii), and the general facies facilitate the discrimination of the two subfamilies.

As to the other tortricoid groups, most authors agree upon the family rank of the Phaloniidae; the Chlidanotidae (MEYRICK) is a little known small tropical family. The groups Ceracidae and Schoenotenidae have recently been considered worth of family rank by the present author (DIAKONOFF, 1950 and 1952). The *Melanalophidae* (DIAKONOFF, 1941) at last, have been changed in Melanalophinae by OBRAZTSOV (1949), but we do not agree with this change. Up till now this family is represented by a single Javanese species, which possesses a pecten on the scape of the antennae. The nature of this outstanding character, not known in any Tortricodea, neither described in any of the more or less allied groups, as, e.g. Carposinidae or Glyphipterygidae, supports our view. In our opinion only future discoveries either of congeners of *Melanalopha* or of Tortricidae in possession of an antennal pecten, might provide proofs for the correctness of OBRAZTSOV's measure.

TORTRICINAE

This subfamily is abundant in New Guinea; it forms about 36 per cent of the total number of species collected by the Expedition. This abundance of Tortricinae is important from a zoogeographic point of view, as it results into a development of the fauna of New Guinea parallel (not identical!) with that of the Australian Continent.

The distribution of the tortricid subfamilies Tortricinae and Eucosminae is not easy of explanation. We cite MEYRICK (*Gener. Ins.*, fasc. 149, p. 2, 1913);

"... Both families must apparently have originated in the Indian region. Throughout Europa, Asia, Africa, and North America (South America is at present doubtful) the *Eucosmidae* predominate, outnumbering the *Tortricidae* in the proportion of three to one. In Australia and New Zealand the conditions are reversed, the *Tortricidae* being dominant and outnumbering the *Eucosmidae* (if recent Indo-Malayan immigrants are excluded) also in the proportion of three to one. Both families seem to be well adapted to tropical and temperate climates alike. The New Zealand Tortricine fauna can be quite satisfactorily accounted for on the view that it is based on the Australian, with the addition of a slight South American element. The Australian Tortricine fauna however consists of a larger Tortricid and smaller Eucosmid elements, both of an advanced type and not including representatives of the earlier forms which must have co-existed abundantly in the region from which this fauna was derived, which must have been the Indian region. The only possible explanation seems to

be that the transference was not effected by any nearly complete land connection, but took place across a wide channel of several hundred miles, and that only a few accidentally selected forms made their way across, at a period which can hardly be later than the Cretaceous; from this very limited and casual immigration the peculiar and specialised Australian stock was developed".

MEYRICK has difficulties with the explanation of this distribution on account of the fact that he regards the Eucosminae as ancestral to the Tortricinae. HEINRICH expresses a view opposite to that of MEYRICK and regards the Tortricinae as the oldest of the two. If we accept his view, it is evident that the problem of the above mentioned distribution loses most of its snags.

Granted that the Indian region is the cradle of the Tortricoid Lepidoptera, the logical conclusion is that the invasion of these insects in Australia has taken place at the period in which the Eucosminae were in an early stage of development out of the Tortricinae, and were far less in number. Consequently they had less chance in following the latter on their invasion of Australia. In that continent the Tortricinae came to an extremely rich development along new lines, favoured by the new, optimal conditions, and also by absence of the Eucosminae which elsewhere must be potential rivals as they have identical life-habits.

MEYRICK's conception cited above does not concern the Papuan fauna because at the time of his publication little was known about it. It is of interest that the conditions in New Guinea appear to be exactly the same as in Australia and New Zealand, viz., the Tortricinae predominate, outnumbering the Eucosminae in exactly the same proportion as in those countries. About 159 species of Tortricinae have been collected by the Expedition, as against 56 species of Eucosminae.

Thus the fauna of New Guinea in this respect may have the same "character" as that of Australia. On the other hand the New Guinean Tortricinae are decidedly not of "Australian" aspect but they are typical for the Papuan region as such. It is sufficient to think of the remarkable and conspicuous diurnal species of the endemic *Chionothena* (tribe Zacorisini), to understand this. We hope to return to this matter later.

Provisional key to the Papuan genera of the Tortricinae¹⁾

1. Females with corethrogyne (fig. 24)	2
Females without corethrogyne	5
2. Head smooth, corethrogyne large, ventro-lateral ²⁾ . <i>Zacorisca</i> MEYRICK	
Head with appressed or rather roughish scales	3
3. Corethrogyne small, ventral, eighth tergite swollen, forming a vesicle	

¹⁾ A definitive key will be given in the next part of this paper.

²⁾ This feature can easily be observed in dried specimens with a magnification of 10—30 times.

- around ovipositor ¹⁾; head with long loose hairs, costal fold in male absent *Diphtheropyga* gen. nov.
- Corethrogynae large, ventro-lateral or dorso-lateral, eighth tergite normal; head with appressed scales, costal fold in male always present 4
4. Fore wing smooth-scaled, costa smooth; mostly white with black marginal markings or unicolorous whitish or yellowish; corethrogynae ventro-lateral, large, formed by fine hairs; diurnal species *Chionothremma* gen. nov.
- Fore wing not smooth-scaled, costa in male ciliate posteriorly, in female ciliate throughout, often a larger tuft of cilia in middle; mostly whitish, retinate and suffused with fuscous or greyish, markings tortricoid, fuscous, grey or blackish; corethrogynae dorso-lateral, seldom ventro-lateral, formed by variably shaped scales, seldom by hairs; nocturnal species *Isotenes* MEYRICK
5. Fore wing with veins 7 and 8 stalked 6
- Fore wing with veins 7 and 8 separate or one of these veins absent 26
6. Fore wing with vein 9 out of stalk of 7 and 8 7
- Fore wing with vein 9 separate 10
7. Fore wing with veins 3 and 4 stalked 8
- Fore wing with veins 3 and 4 separate 9
8. Palpus ascending, hind wing with veins 3 and 4 stalked, 6 and 7 stalked *Dicellitis* MEYRICK
- Palpus porrect, hind wing with veins 3 and 4 connate, 6 and 7 nearly approximated towards base *Hydaranthes* MEYRICK
9. Fore wing with vein 7 to apex, costal fold in male present; palpus ascending *Capnophlycha* MEYRICK
- Fore wing with vein 7 to termen *Pandurista* MEYRICK
10. Fore wing with vein 3 distinctly from before angle of cell . . 11
- Fore wing with vein 3 from angle of cell 12
11. Fore wing in male without costal fold; brightly coloured or black and white (diurnal ?) species *Chresmarcha* MEYRICK
- Fore wing in male with costal fold; ochreous or brownish coloured species with the usual tortricoid markings . . *Adoxophyes* MEYRICK
12. Hind wing with veins 6 and 7 approximated towards base or remote 13
- Hind wing with veins 6 and 7 connate or stalked 17
13. Fore wing with a dorsal scale-projection before middle. *Pternozyga* MEYRICK
- Fore wing without such projection 14
14. Hind wing with vein 4 absent *Heterochorista* gen. nov.
- Hind wing with vein 4 present 15
15. Fore wing with vein 7 to apex or costa . . . *Phricanthes* MEYRICK
- Fore wing with vein 7 to termen 16

¹⁾ See second footnote on foregoing page.

16. Hind wing with veins 3 and 4 connate or stalked *Polydrachma* MEYRICK

 Hind wing with veins 3 and 4 separate
 Thrincophora MEYRICK (part)
17. Hind wing with veins 3 and 4 separate 18
 Hind wing with veins 3 and 4 connate or stalked 21
18. Fore wing with raised scale-tufts. . . *Thrincophora* MEYRICK (part)
 Fore wing without raised scale-tufts 18
19. Hind wing with vein 3 from before angle *Metaselenia* DIAKONOFF
 Hind wing with vein 3 from angle. 20
20. Fore wing with vein 2 from $\frac{2}{3}$, vein 4 nearer to 3 than to 5; hind
 wing with discoidal vein normal *Choanograptis* MEYRICK
 Fore wing with vein 2 from $\frac{1}{2}$ — $\frac{3}{5}$, veins 3—5 approximated, equi-
 distant; hind wing with discoidal vein oblique . . *Isochorista* MEYRICK
21. Palpus ascending or subascending 22
 Palpus porrect 24
22. Palpus ascending, appressed to face, mostly thickened, rather short
 Homona WALKER
 Palpus subascending: slender and moderately long, or cylindrical
 and with closely appressed scales 23
23. Palpus rather thick, cylindrical, long, with closely appressed scales
 Aeolostoma MEYRICK
 Palpus slender, moderate, not cylindrical
 Rhomboceros MEYRICK, females
24. Hind wing with veins 3 and 4 connate. . *Epagoge* HÜBNER (part)
 Hind wing with veins 3 and 4 stalked 25
25. Antenna in male thickened towards base . . *Rhomboceros* MEYRICK
 Antenna in male not thickened towards base . *Epagoge* HÜBNER (part)
26. Fore wing with veins 8 and 9 stalked . . . *Antigraptis* MEYRICK
 Fore wing with veins 8 and 9 separate. 27
27. Fore wing with vein 6 apparently to costa . *Eboda* WALKER (part)
 Fore wing with vein 6 to termen 28
28. Fore wing with veins 3 and 4 connate or stalked 29
 Fore wing with veins 3 and 4 separate. 31
29. Hind wing with vein 4 absent. *Eboda* WALKER (part)
 Hind wing with vein 4 present 30
30. Fore wing with vein 2 from $\frac{1}{3}$ of cell . . *Berylliphantis* MEYRICK
 Fore wing with vein 2 from $\frac{2}{3}$ — $\frac{3}{5}$ of cell . . *Spatalistis* MEYRICK
31. Fore wing with vein 7 to apex or costa 32
 Fore wing with vein 7 to termen (in one species to apex, then fore
 wing without scale-tufts) 33
32. Hind wing with veins 6 and 7 approximated towards base; palpus
 very long; thorax with double posterior crest . *Lophoprora* MEYRICK
 Hind wing with veins 6 and 7 stalked; palpus moderate or mode-
 rately long; thorax without crest *Polyortha* DOGNIN

33. Anal tergite and its sealing in male very large, forming a shining smooth cap over anal segment. *Leptochroptila* DIAKONOFF
 Anal tergite in male not thus developed 34
34. Hind wing with veins 3 and 4 separate, or vein 4 absent (seldom 3 and 4 connate or short-stalked in *Parachorista* and *Anisotenes* which have the genitalia of *Isotenes* type) 35
 Hind wing with veins 3 and 4 invariably connate or stalked . 38
35. Thorax without erect 36
 Thorax with a more or less developed posterior crest 37
36. Fore wing mostly without costal fold; male genitalia with a simple valva (*Epagoge* type) *Epichorista* MEYRICK
 Fore wing with costal fold; male genitalia with complicated valva (*Isotenes* type) *Parachorista* gen. nov.
37. Fore wing with cell dilated, parting vein present *Harmologa* MEYRICK
 Fore wing with cell narrowed, parting vein absent
 Anisotenes gen. nov.
38. Antenna stout; palpus triangularly dilated. Hind wing with vein 7 to apex *Taeniarchis* MEYRICK
 Antenna normal; hind wing with vein 7 to termen 39
39. Hind wing with veins 6 and 7 separate . . . *Syndemis* HÜBNER
 Hind wing with veins 6 and 7 connate or stalked 40
40. Hind wing with veins 6 and 7 connate *Eremas* TURNER
 Hind wing with veins 6 and 7 stalked 41
41. Palpus porrect 42
 Palpus subascending *Ochetarcha* MEYRICK
42. Hind wing with veins 3 and 4 connate. *Cnephasia* CURTIS
 Hind wing with veins 3 and 4 stalked 43
43. Fore wing with costa more or less curved, convex, costal cilia normal; male genitalia with well-developed dentate labides.
 Neocalyptis DIAKONOFF (part)
 Fore wing with costa sinuate, concave beyond middle; costal cilia with a triangular projection at $\frac{1}{3}$; male genitalia without developed labides *Diadelomorpha* DIAKONOFF

ZACORISCINI

"Group B" (part) MEYRICK, Gener. Insect., vol. 149, pp. 2, 20, 1913.

Chresmarchidii DIAKONOFF, 1939, Zool. Meded. Meded. Mus. Leiden, vol. 21, p. 135.

Zacoriscides DIAKONOFF, 1941, Treubia, vol. 18, p. 31.

Head smoothly scaled or with appressed scales on vertex and with face shortly and rather smoothly scaled. Antenna with scape elongate, and smooth, or moderate, and clothed with appressed scales, flagellum in male moderately, in female minutely ciliate. Palpus subascending, seldom almost porrect, rather long or moderate, smoothly sealed or with roughish

scales towards apex above, or rather roughly scaled throughout, median segment moderately S-curved, terminal segment subobtusate or pointed. Thorax without crest. Fore wing broad, truncate, mostly with a large costal fold in male, either smoothly scaled and brightly coloured or snow-white with sparse black markings (diurnal species), or roughly scaled, with costa ciliate throughout, and with greyish or brownish markings (nocturnal species). Abdomen in male with an extremely large anal tuft, in female with corethrogynae ¹⁾ (fig. 24), being a large area of the seventh ventrite, clothed with extremely dense conspicuously coloured hairs or scales, forming a kind of brush around the ovipositor.

Fig. 13: *Zacorisca holantha* MEYRICK, male genitalia. (After DIAKONOFF, 1939).

Male genitalia highly developed and complicated: tegumen and uncus very large, valva with plicate disc, semimembranous, with extremely large brushes of long hairs; transtilla paired, each half consisting of a lateral, strongly dentate part which we call *transtilla knob*, as it is not

¹⁾ cf. DIAKONOFF, Treubia, vol. hors série, p. 36, 1944.

quite homologous with the labis of the Noetuidae, and of a narrow median rod, being the half of the transtilla proper, which we call *median projection*; coremata on seventh segment present. Female genitalia with seventh ventrite modified so as to form a plicate membranous field clothed with very dense hairs or scales, forming the above mentioned expansible corethrogynae; a large, mostly coiled cestum²) and a dagger-like signum invariably present. (Explanation of the different parts is given in figs. 13 and 14).

The genera of this tribe form distinct groups of species — as far as this can be expected in the Tortricidae, where most generic characters are considerably plastic — but the species of each genus are rather variable as to the minor particulars of structure. The females can easily be recognised by the corethrogynae which is invariably present, and forms a feature unique in the tortricoid Lepidoptera. The males may be less easy of recognition superficially, but a simple glance at their genitalia with the peculiar, complicated tegumen and uncus is sufficient to ascertain their systematic position. The genitalia of both sexes in this tribe are rather uniform.

The Zacoriscini form a typical feature of the Papuan fauna. *Isotenes* must be the oldest or the most atavistic of the four genera known at present. The inconspicuous species have typically tortricoid markings, and modest colouring, and are of nocturnal habits. *Diphtheropyga* is transitional between *Isotenes*, and the truly striking *Chionothremma* and *Zacorisca* which both have changed to diurnal life-habits, and apparently in connection with this, acquired conspicuous bright colouring, and glossy smooth scaling of wings and body. *Chionothremma* is endemic, and seems to be in a stage of rich development in the isolated region of Central New Guinea.

Interesting is the distribution of *Zacorisca* (fig. 15). As far as is known, the species occur at high elevations: 800 to 3300 m. The genus is most numerous in New Guinea; outside this island it is fairly represented in the Moluccas, but is sparse elsewhere. This distribution may be summed up as follows: New Guinea: twelve species, Bismarck Islands: two, Moluccas: six, Philippine Islands: three, Celebes: one, Flores: one, Borneo: one subspecies (of the Papuan *Z. toxopei*), and Java: one species. The isolated and elevated habitats of these stragglers outside the Papuan region suggest that we have to do with relicts of an old fauna.

The distribution of *Isotenes* is less limited than that of *Zacorisca*. The genus is well represented in New Guinea but a few species are widely scattered throughout the Archipelago and spread further than those of the latter genus, viz. western Australia (one species), Buru (one species), Java (two species — only in the mountains, not below 1000 meters); one of the Javanese species, *Isotenes inae* DIAKONOFF, is recorded from the

²) cf. DIAKONOFF, Zool. Meded. Leiden, vol. 21, p. 123, 236, 1939.

Fig. 14: *Chionothremma patarea* (MEYRICK), female genitalia. (Slide No. 1229 B.M., specimen in the British Museum. After DIAKONOFF, 1939.)

eastcoast of Sumatra at an elevation of 800 meters and also from the Khasi Hills in Assam.

Summing up these not all too extensive data we come to the following conclusion. The tribe Zacoriscini, however typical for the Papuan region at the present time, is evidently of South Asiatic origin and has arrived in some remote period — e.g., pleistocene — through the Sunda shelf. The scattered sparse remnants of this invasion maintain themselves in the West of the Archipelago, in the mountains, their usual habitat (*Z. toxopei* aplasta DIAKONOFF in Kinabalu; *Z. taminia* in Mount Gedé and neighbouring mountains of West Java, together with *Isotenes inae* and *I. tharumasia* DIAKONOFF). Very remarkable is the behaviour of *Z. toxopei*, the nominate form of which flies in Central New Guinea, while a considerably modified subspecies found refuge in the remote Kinabalu.

The Zacoriscine invasion apparently found optimal conditions in New Guinea, where both *Zacorisca* and *Isotenes* either came to a rich development afterwards or — which seems less probable — could maintain themselves from the time of their arrival up to now. The isolation of the Snow Mountains promoted arising of endemic genera, *Chionothremma* and *Diphtheropyga*, which indicates considerable antiquity of our South Asiatic invasion. *Chionothremma* came to an extremely rich development there.

In other words, how rich and typical for the present Papuan fauna this tribe may be, the widely scattered sparse stragglers belonging to this group indicate, if not an exogenic then at least a diendogenic character of the Zacoriscine fauna of New Guinea.

Zacorisca MEYRICK, 1910 (figs. 13, 14, 16, 17, 24)

Zacorisca MEYRICK, 1910, Proc. Linn. Soc. N.S. Wales, vol. 35, p. 220. Exot. Microl., vol. 3, p. 111, 1924. FLETCHER, Mem. Agr. Ind., Entom., vol. 11, p. 238, 1929. DIAKONOFF, Treubia, vol. 18, p. 31, 1941; ibidem, vol. hors série, p. 34–36, 1944 (genotype: *holantha* MEYRICK, 1910).

Atteria MEYRICK, 1910 (*nec* WALKER), Proc. Linn. Soc. N.S. Wales, vol. 35, p. 221.

Megalodoris MEYRICK, 1912, Exot. Microl., vol. 1, p. 5; ibidem, vol. 3, p. 111, 1924 (genotype *stephanitis* MEYRICK 1910). FLETCHER, Mem. Dept. Agr. Ind., Entom., vol. 11, p. 135, 1929.

Chresmarcha, DIAKONOFF (*nec* MEYRICK), Zool. Meded. Mus. Leiden, vol. 21, p. 135–142, 1939.

The definition of the present genus has given us considerable trouble before, and we were obliged to revise our opinion once (cf. below sub *Chresmarcha*). This genus may be defined once more as follows.

Head smoothly scaled, ocelli present, posterior. Proboscis developed. Palpus moderate or rather long, subascending or almost porrect, smooth, or with some roughish scales towards apex above, seldom with short roughly projecting scales above, and towards apex beneath (*Z. tetrachroma* DIAKONOFF), median segment S-shaped, more so in female, terminal segment moderate, subobtusate, in female drooping. Antenna moderately

Fig. 15: Distribution of *Zacorisca* MEYRICK.

ciliate in male, minutely ciliate in female, rather elongate. Thorax without crest. Abdomen with a very large anal tuft in male, with a large or extremely large corethrogynae in female. Legs with more or less appressed scales. Fore wing, with a strong variably shaped costal fold in male (absent only in *Z. aptycha* nov. spec.), broad, truncate, apex rounded, termen straight and vertical above, rounded beneath; smoothly scaled; often shining bright blue and orange; vein 2 originating from somewhat beyond middle or from $\frac{2}{3}$ of the lower margin of cell, 3 from angle, mostly widely remote from 4, 4 more or less approximated to 5 at base, 5 parallel, sometimes with base slightly turned upwards, 6 remote and parallel, 7 separate, parallel, to termen, 7—9 remote. Hind wing without cubital

Fig. 16: *Zacorisca taminia* (FELDER), female, head and wing neurulation.

Fig. 17: *Zacorisca holantha* MEYRICK, female, head and wing neurulation.

pecten; 2 from somewhat beyond middle or from $\frac{2}{3}$ of the lower margin of cell, 3 and 4 approximated at base or connate, 5 closely approximated at base, 6 and 7 approximated towards base, connate or stalked.

The genitalia in the male (fig. 13) developed to the extreme of the higher tortricoid type: with a very broad tegumen and a complicate, often bilobed uncus; a large, hook-shaped gnathos; socii, not differentiated, simple patches or rows of bristles; valva semi-membraneous, plicate, covered with very long bristly hairs, and with large, extremely dense brushes of long hair-scales on inner side, which come off easily; sacculus distinct, vinculum broad and strong; aedoeagus pistol-shaped; cornuti, a sheaf of long spines. In the female (fig. 14) seventh ventrite forming a large, apparently expansible membrane on each side, covered with extremely dense, short and fine hairs which are mostly conspicuously coloured, and come off very easily ¹⁾; they serve probably for the covering

¹⁾ Often after copulation a tuft of these hairs remains between the valvae of the male.

of eggs. Ostium moderate, colliculum mostly absent, cestum very strong, coiled, signum dagger-shaped. (Figures 13 and 14 will facilitate the reading of different parts of this type of genitalia.)

Key to the known species of *Zacorisca*

1. Both sexes with fore wing bluish-white, apical fourth reddish-coppery 2
Fore wing not thus coloured 3
2. Costal fold in male absent *aptycha* spec. nov.
Costal fold in male present *daphnaea* MEYRICK (New Guinea)
3. Fore wing with ground colour deep blue, purple or blue-blackish 4
Fore wing with ground colour orange or yellow, markings blue or reddish 10
Fore wing with ground colour neither blue, orange nor yellow 22
4. Fore wing with one terminal or costal marking only 5
Fore wing with more than one marking 8
5. Fore wing with an orange-red spot on basal part of costa
Fore wing with a coppery-fulvous terminal third or a coppery-red terminal fascia 6
Fore wing with coppery-fulvous terminal third
Fore wing with coppery-red terminal fascia 7
7. Hind wing deep blue or blackish with a coppery-red terminal fascia (female) or with posterior half coppery red (male) *cyprantha* MEYRICK (New Guinea)
Hind wing blackish with deep blue shine . *holantha* MEYRICK (New Guinea)
8. Hind wing deep purple with a transverse vertical yellow band before middle or with yellow basal half *vexillifera* MEYRICK (New Guinea)
Hind wing unicolorous deep purple 9
9. Fore wing with a yellow patch on base of dorsum and an ochreous transverse fascia at $\frac{2}{3}$ *platyantha* MEYRICK (Buru)
Fore wing with a yellow, a whitish and an ochreous spot on base of costa, in disc and before apex, respectively, and an ochreous transverse discal streak at $\frac{3}{4}$ *pocilantha* MEYRICK (Buru)
10. Fore wing with apical half or third suffused with reddish
Fore wing not thus *heliantha* MEYRICK (Philippine Islands) 11
11. Fore wing with apical half either less deep blue than ground colour or purple, sometimes enclosing one or two orange spots or an orange streak 12
Fore wing with markings not thus arranged 21
12. Hind wing dark purple-fuscous or deep purple-blue, markings orange or coppery-reddish 13
Hind wing orange with deep blue apical patch 17
13. Termen in hind wing with deep orange spots or a coppery-red band, or with posterior half coppery-red 14
Termen of hind wing without markings or with slight orange marbling along lower half 16
14. Hind wing with posterior half coppery-red (male) or with moderate coppery-red terminal fascia sometimes connected with a spot on costa before apex 15
Hind wing with deep orange spots on termen and on middle of costa *helminthophora* DIAKONOFF (New Guinea)
15. Fore wing with anterior edge of a blue transverse fascia considerably convex throughout, posterior edge convex, with a slight obtuse projection above

- tornus *thiasodes* MEYRICK (New Guinea)
Fore wing with anterior edge of a blue transverse fascia convex only at extremities, almost straight in middle, posterior edge with a distinct projection above tornus and sometimes with another one below costa . . . *basilica* spec. nov.
16. Hind wing with an orange fascia from middle of costa to upper part of termen *optICODES* MEYRICK (New Ireland)
Hind wing with a slight mark of orange suffusion near costa before apex, and some marbling along lower half of termen *chrysomelopa* MEYRICK (New Ireland)
17. Fore wing with terminal patch to $\frac{2}{3}$ — $\frac{3}{5}$ of costa, sometimes including an orange spot 18
Fore wing with a moderate apical patch, not exceeding $\frac{1}{5}$ of costa . . . 19
18. Fore wing bright deep orange, larger species (female: 36—38 mm), with narrower fore wings *electrina* MEYRICK (Philippine Islands)
Fore wing bright yellow-orange, or golden-yellow, smaller species (female: 30—32 mm), with broader fore wings . . . *taminia* FELDER (Java, Flores)
19. Hind wing with an elongate-ovate apical patch
 toxopei toxopei DIAKONOFF (New Guinea)
Hind wing with a transverse patch 20
20. Fore wing with apical patch not extended along costa anteriorly, its anterior edge moderately sinuate or slightly inbent above middle
 toxopei aplasta DIAKONOFF (North Borneo)
Fore wing with apical patch slightly extended along costa anteriorly; anterior edge bent inward below middle
 pulchella SCHULTZE (Philippine Islands)
21. Fore wing with postmedian transverse fascia, dorsal and costal marginal streak and slender subterminal transverse fascia
 euthalama MEYRICK (Ceram)
Fore wing with a marginal streak running from base of dorsum along costa to upper half of termen, with a transverse projection at $\frac{3}{4}$
 aglaocarpa MEYRICK (Ceram)
22. Fore wing with ground colour light aquamarine blue, towards base whitish, towards posterior edge deep blue *aquamarina* spec. nov.
Fore wing not thus 23
23. Fore wing deep fulvous-lilac, base of wing and of costa with a narrow orange streak *bovisanguis* spec. nov.
Fore wing with entire base or with base of costa whitish 24
24. Fore wing with basal third white . . . *tetrachroma* DIAKONOFF (New Guinea)
Fore wing only with a whitish basal streak . *phaeoxesta* MEYRICK (Ceram, Celebes)

Zacorisca cyprantha MEYRICK, 1924

Zacorisca cyprantha MEYRICK, 1924, Exot. Microl., vol. 3, p. 111—112.
DIAKONOFF, Treubia, vol. 19, p. 184, 1948.

Chresmarcha holantha, DIAKONOFF (nec MEYRICK), Zool. Meded. Mus. Leiden, vol. 21, p. 142.

Distribution: British New Guinea: Ougarra. Netherlands New Guinea: Wissel Lakes.

Iebèlè Camp, 2250 m, November–December, 1938. One male.

Zacorisca aptycha spec. nov. (figs. 23, 28, 33)

α = without, $\pi\tau\upsilon\chi\eta$ = fold

♂ 28 mm, ♀ 31 mm. Head, antenna palpus and thorax black with indigo-blue-green shine. Abdomen black with green shine, anal tuft in male and

Genitalia of *Zacorisca*. Fig. 18: *toxopei* DIAKONOFF, male. Fig. 19: *thiasodes* MEYRICK male. Fig. 20: *basilica* spec. nov., female. Fig. 21: *idem*, male. Fig. 22: *bovisanguis* spec. nov., male. Fig. 23: *aptycha* spec. nov., male. Fig. 24: anal segments and corethrogyne of *Z. thiasodes* MEYRICK, female.

corethrogynae in female whitish. Legs black with bluish-green shine in male, brownish-black in female. Fore wing elongate-subovate, costa strongly arched anteriorly, little curved posteriorly, slightly prominent beyond middle in male, in middle in female, apex obtuse, termen straight, vertical above, rounded beneath. White with a bluish gloss; a narrow blue-green-black basal patch continued as a line along base of dorsum

Fig. 24a. *Zacorisca daphnaea* MEYR., male genitalia.

and along costa to beyond $\frac{1}{4}$, thence merging into apical patch; apical third of wing in male, apical fourth in female, deep brassy-ferruginous, becoming bluish-black towards anterior edge of this patch, especially above; this edge slightly diffuse through irroration of white scales, gradually arched, more convex in female, and running from dorsum just before tornus to costa slightly beyond middle. Cilia fuscous-fulvous with brassy gloss, basal third ferruginous. Hind wing brassy-brown, discal $\frac{2}{3}$ suffused with bluish-purple; this suffusion coarsely irrorated with bluish-white from below upper edge of cell as far as vein 1a and beyond cell except along vein 1c; hind wing on dorsum irrorated with purplish-blue-green; hind wing in female (possibly rubbed and somewhat faded) with anterior $\frac{3}{4}$ fuscous-grey, in cell, below, and beyond cell suffused with bluish-white, coarsely irrorated with fuscous grey, along vein 1a, and along fold touched with indigo-bluish. Cilia snow-white along costa around apex and along upper half of termen, brassy-golden along lower half, becoming pale golden in tornus, blackish along dorsum; basal third of cilia except along costa, brassy-brown.

Uncus very broad, top rounded, Gnathos moderate, broad at base, hook short. Socius: a series of sparse bristles. Transtilla knob strong, bristled, median projection sclerotized. Peniculus short, subtriangular. Juxta cup-shaped, anterior edge rounded. Valva plicate, with a triangular projection in disc. Aedeagus pistol-shaped; cornuti, a sheaf of long spines. (Slide No. 308 D.)

Limen indefinite, lateral excavations small, lateral projections short, dorsally a moderate, somewhat sclerotized band. Colliculum short, not sclerotized on ventral side. Cestum with three torsions, but not coiled, terminal fold rather long. Signum small. Eighth segment tubular. Ovipositor lobes slender, elongate. (Slide No. 321 D.)

Araucaria Camp, 800 m, March 29, 1939 (holotype, male). Sigi Camp, 1500 m, February 19, 1939 (allotype, female). Two specimens.

We had the opportunity to compare the holotype of the present species with a male specimen of *Zacorisca daphnaea* MEYRICK, from a collection of Papuan Microlepidoptera, received for identification from the British Museum. The latter specimen is labelled: "Owgarra, B. New Guinea, A. S. Meek", and therefore must be a topotype, possibly even an overlooked cotype specimen. The comparison of this specimen with *aptycha* revealed that they agree superficially very closely, except for the presence of a costal fold in *daphnea* and entire absence of it in *aptycha*, and for minor differences tabulated below.

aptycha

Face and scape of antenna below:
bluish-black.
Legs: indigo-blue-black.

Costal fold absent.
Apical brassy area of fore wing becoming blackish towards anterior edge, along costa gradually narrowed and produced anteriorly almost to $\frac{1}{4}$, thence continued as a narrow blue-black costal line.

No discal markings.

Hind wing with rather well-defined whitish-blue discal area, leaving a broad band of brassy ground colour along termen to tornus.

daphnaea

Face and scape of antenna below:
white.

Anterior and median tibia suffused with white.

Costal fold present.

Apical brassy area unicolorous, only slightly produced anteriorly and not reaching middle of costa, thence continued as a blue-black costal line.

An elongate-ovate ill-defined blotch below middle of wing from beyond base to before middle: grey densely irrorated with white.

Basal $\frac{3}{4}$ of wing grey, this colour extending over margin of wing as far as termen above tornus; a white longitudinal streak in cell only.

The male genitalia of *aptycha* and *daphnaea* show important differences of almost subgeneric rank (cf. figs. 23 and 24a). While in the latter they have acquired the high development so characteristic of this genus, the male genitalia of *Z. aptycha* are of simpler type and show a transition towards the type of *Chionothremma*.

In *Z. daphnaea* (fig. 24a, genitalia slide No. 1160 D) the tegumen is more robust; the uncus is less broad, narrowed towards top; the gnathos is heavy, hooked, with broad sclerotized arms; the aedeagus is gradually curved instead of pistol-shaped; the vinculum is broader and more rounded; the ventral corema is much larger.

Zacorisca thiasodes (MEYRICK, 1910) (figs. 19, 24, 26, 31)

Atteria thiasodes MEYRICK, 1910, ♂, Proc. Linn. Soc. N.S. Wales, vol. 35, p. 221—222.

Megalodoris thiasodes MEYRICK, 1912, Lepid. Catal., vol. 10, p. 15; Gener. Ins., vol. 149, p. 21, 1912; Exot. Microl., vol. 1, p. 5, 1912.

Megalodoris lamprostola DURRANT, 1915, Brit. Ornit. Un. & Woll. Exp., vol. 1, p. 153; syn. nov.

Distribution: British New Guinea: Biagi, Mambare River, 5000 feet; Aroa River; Base Camp. Netherlands New Guinea, Fakfak.

A series of both sexes in excellent condition reveals that the female insect described by MEYRICK as the female of the present species belongs to an other distinct species, which has been redescribed under the new name of *toxopei* DIAKONOFF. The true female of *thiasodes* was described by DURRANT under the name of *lamprostola*, which, therefore, is a synonym.

The present species may be redescribed as follows.

♂ 29.5 mm, ♀ 34—37 mm. Head and thorax deep greenish-blue, shining, in male lower part of face, a minute tuft pressed between bases of antennae on vertex, and scape of antenna below, white. Palpus deep greenish-blue in male, blackish-purple with bluish shine in female. Antenna with flagellum blackish in male, suffused laterally with whitish-grey in female. Abdomen deep purple-blue, in female more violet tinged, anal tuft in male shining pale ochreous, corethrogynae dull pale ochreous, laterally somewhat greyish-tinged. Legs black, in male with deep purple-bluish shine, in female with purple gloss. Fore wing elongate-subtruncate, costa strongly arched anteriorly, apex rounded, termen slightly sinuate above, rounded beneath. Basal area light orange-yellow, terminal area bright orange-yellow, markings deep bluish-purple in male, deep purple in female. Costal fold broadly semiovate to about $\frac{1}{5}$ of costa, abruptly strongly narrowed thence, reaching beyond middle of costa. A short narrow streak along base of wing and of costa; a broad transverse fascia, in male somewhat narrower, with edges tolerably parallel, anterior in male from beyond $\frac{1}{4}$ of costa, in female from $\frac{1}{4}$ or from slightly before $\frac{1}{3}$ of costa, to beyond $\frac{3}{5}$ of dorsum, concave throughout, much more so in female, especially along upper half (in one female specimen narrowly connected along costa with basal streak); its posterior edge from slightly beyond middle of costa to dorsum just before tornus, in male almost straight along upper third, faintly excavate in middle and with a broadly rounded slight projection at $\frac{3}{4}$; in female almost straight to below middle, without excavation, stronger rounded and projecting at, or below, $\frac{3}{4}$; apical patch in male extending over $\frac{1}{5}$ of costa, its posterior edge regularly convex, to termen just above middle; in female extending over $\frac{1}{5}$ of costa, with edge regularly sinuate, to termen above tornus. Cilia dark grey, orange-yellow in tornus. Hind wing deep purple or purple-violet with a deep orange terminal fascia, mostly somewhat clouded with blackish-fuscous,

abruptly limited posteriorly by vein 5, anteriorly gradually narrowed, in male to tornus, with dentations on veins 1b and 1c, in female scarcely reaching tornus; an obliquely angulate patch on third fourth of costa, almost touching end of terminal fascia. Cilia greyish-fuscous, tinged with fulvous along terminal band.

Tegumen broad. Unens broadly triangular, slightly constricted in middle, top obtusely rounded. Socins, a series of moderate bristles. Gnathos long, strong, slender, narrowed above, hook long. Transtilla knob with five to seven strong dentations, median projection long. Peniculus erect-triangular, top somewhat rounded, with long bristles. Juxta flattened, corrugated, ventral edge deeply indent. Valva complicated, sacculus with dilated and rounded base (Slide No. 367 D).

Folds of corethrogyne large. Limen dorsally moderate, rather short, ventrally somewhat excavated at extremities and with long lateral projections. Colliculum distinct, slightly narrowed below, rather short. Cestum strong, coiled, with a complete loop in middle, distal fold moderately long but very broad. Signum strong, curved. Eighth segment sclerotized (Slide No. 368 D).

Baliem Camp, 1700 m, November 16—27, 1938. One male, four females. Baliem Plane, 1700—1800 m, December 17, 1938. One male.

Zacorisca basilica spec. nov. (figs. 20, 21)

βασιλικός = regal

♂ 35 mm, ♀ 35—37 mm. Head, palpus and thorax shining greenish-blue, in male lower part of face and scape of antenna below white. Abdomen deep blue or greenish-blue, anal tuft shining whitish-ochreous, corethrogyne dull pale ochreous. Legs blackish-fuscous, shining greenish. Fore wing elongate-subtruncate, costa strongly arched anteriorly, apex rounded, termen slightly sinuate above, rounded beneath. Basal area pale yellow, terminal area bright orange-yellow, markings deep bluish-purple or deep purple. Costal fold moderately broad, elongate-semiovate to before $\frac{1}{4}$ of costa, thence abruptly narrowed, to before $\frac{3}{5}$ of costa. Male with a moderate streak along base of wing from costa to dorsum, narrowly connected along costal edge with transverse fascia; latter oblique, narrowed below, with anterior edge from before $\frac{1}{5}$ of costa, forming a moderate projection along costal fold, this projection slightly triangularly dilated in male, then from below and before $\frac{1}{3}$ of costa obliquely to dorsum before tornus, very faintly sinuate, scarcely concave in middle, almost vertical below fold; its posterior edge from slightly before $\frac{3}{5}$ of costa to tornus, with a subacute projection above $\frac{1}{4}$ and a broadly rounded one above tornus, concave below costa and in middle; apical patch under $\frac{1}{5}$ of costa, its edge vertical below costa, somewhat angularly broadly excavate below, to $\frac{2}{3}$ of termen; female with basal streak narrow, more or less produced along costal edge but not connected with transverse fascia, the latter little dilated above, mostly without anterior projection on costa, seldom

Female genitalia of *Zacorisca* MEYRICK. Ovipositor and ostium. Fig. 25: *toxopei* DIAKONOFF. Fig. 26: *thiasodes* MEYRICK. Fig. 27: *bovisanguis* spec. nov. Fig. 28: *aptycha* spec. nov. Fig. 29: *aquamarina* spec. nov. Ductus bursae and bursa copulatrix. Fig. 30: *toxopei* DIAKONOFF. Fig. 31: *thiasodes* MEYRICK. Fig. 32: *bovisanguis* spec. nov. Fig. 33: *aptycha* spec. nov. Fig. 34: *aquamarina* spec. nov.

with a narrow one; its anterior edge almost straight, somewhat irregularly sinuate, shortly concave on dorsum, considerably oblique, from before $\frac{1}{3}$ of costa to before tornus; posterior edge from before $\frac{2}{3}$ to tornus, sometimes with a slight excavation below costa and a distinct, little rounded projection above tornus; apical patch somewhat broader than in male, its edge sinuate, variably shaped. Cilia blackish, along lower $\frac{1}{3}$ of termen orange-yellowish. Hind wing deep purple, terminal fascia as in preceding species, deep orange, little obscured, broader posteriorly, broadly connected with the subapical costal patch by a deep orange streak, which is slightly infuscated along veins. Cilia ochreous-fulvous, dark grey around apex and on dorsum.

Genitalia of the male much approaching those of the preceding species. Uncus broader at base, deeper constricted in middle, top broader. Peniculus longer, subclavate. Valva, juxta and vinculum broader. (Slide No. 364 D.)

Female genitalia much like those in the preceding species. Limen longer (ostium broader), no lateral excavations, lateral projections short. (Slide No. 365 D.)

Araucaria Camp, 800 m, March 6—26, 1939, March 19, 1939 (holotype), March 26, 1939 (allotype), Rattan Camp, 1200 m, February–March, 1939. One male, five females. Closely allied to the preceding, especially the females are difficult to discriminate. The differences in the fore wing are: the costal fold of the male narrower and longer; the basal area paler, the anterior edge of the transverse fascia less curved, the posterior edge much more sinuate. The difference in the hind wing: the orange area is more extended. The genitalia in the two sexes are distinctly different from those of *thiasodes*.

***Zacorisca toxopei toxopei* DIAKONOFF, 1948 (figs. 18, 25, 30)**

Atteria thiasodes MEYRICK, ♀, nec ♂! Proc. Linn. Soc. N.S. Wales, vol. 35, p. 221–222, 1910.

Zacorisca toxopei toxopei DIAKONOFF, 1948, Treubia, vol. 19, p. 484.

Distribution: British New Guinea, Biagi, Mambare River, 5000 feet; Aroa River. Netherlands New Guinea: Fakfak.

♂ 32.5 mm, ♀ 32.5–36 mm. Head, palpus and thorax deep greenish-indigo-blue with metallic shine, antenna black. Abdomen deep greenish-indigo-blue, from base to seventh segment bronze-grey above, sometimes tinged purple; anal tuft and seventh segment laterally and below shining pale ochreous in male; corethrogyne pale ochreous tinged with brownish. Legs purplish-black. Fore wing elongate-ovate, dilated, costal fold not reaching to middle, narrow, abruptly narrowed at base, gradually narrowed posteriorly; costa strongly curved anteriorly, slightly posteriorly, apex rounded, termen vertical and convex above, rounded, little oblique below. Orange, a narrow streak on base of wing and of costa deep blackish-

green, shining; a deep purple-violet apical patch, its size and shape variable: its inner edge mostly from middle of costa to tornus, but in one female from before $\frac{1}{3}$ of costa to termen along vein 3, concave, mostly slightly sinuate, sometimes convex above middle and concave at extremities, seldom produced into a short streak along costa. Cilia deep indigo-blue, shining. Hind wing deep orange, with a deep purple-violet apical patch, which is mostly elongate-ovate, covering posterior $\frac{2}{5}$ of costa and reaching somewhat below vein 5, in one female specimen erect-ovate, covering not more than posterior $\frac{1}{4}$ of costa, but reaching downward to vein 4. Cilia deep indigo-blue around apical patch, deep orange elsewhere. Under side: base of fore wing suffused with deep metallic-green, base of hind wing suffused with brown.

Tegumen very strong, clavate. Uncus very broad, top bifid. Gnathos strong, with an angulate median dilatation and a long clavate hook. Socius, a rounded patch of bristles. Transtilla knob elongate, with two ridges of dentations, median projections broad at base, almost touching each other in middle. Peniculus short, rather weak, rounded, sparsely bristled. Juxta broad, flattened. Vinculum broad, rounded. Valva short. Aedoeagus robust. (Slide No. 307 D.)

Limen narrow, rectangular. Colliculum small, weak. Cestum broad, coiled above, with regular torsions beyond coil, corrugated at the same time. Distal fold strongly sclerotized. Signum narrowed towards point. Ovipositor lobes broad. (Slide No. 319 D.)

Araucaria Camp, 800 m, March 1, 2, 5, 7, 25, 1939. March 21, 1939 (holotype), March 1, 1939 (allotype). Cyclops Mountains, 900 m, end of June, 1938. Baliem Camp, 1700 m, November 16—27, 1938. One male, fourteen females. (The female of this species was described by MEYRICK as female of *thiasodes*).

Zacorisca tetrachroma DIAKONOFF, 1944

Zacorisca tetrachroma DIAKONOFF, 1944, Treubia, vol. hors série, p. 39.

Distribution: Netherlands New Guinea: Wissel Lakes, 1750 m.

Top Camp, 1200 m, January 17—May 5, 1939. Four females. In the original description the size of the male has been omitted; it is 26 mm.

Zacorisca aquamarina spec. nov. (figs. 29, 34)

♀ 28—31 mm. Palpus, head, thorax, abdomen and legs deep indigo-blue-black, corethrogynae bright ochreous, very large; palpus rather long, moderately broad, somewhat curved. Fore wing little dilated, with costa gradually arched anteriorly, straight posteriorly, apex rounded, termen almost straight, verical. Pearly ultramarine-blue with greenish iridescence, gradually turning darker posteriorly, base of wing with a deep indigo-blue-blackish streak, narrowly continued along base of dorsum; this streak followed on base by a narrow snow-white streak, twice as broad on costa as on dorsum, its outer edge suffused, with a minute indentation

below costa, rounded and projecting below this; terminal veins becoming deep bluish posteriorly, terminal fifth of wing gradually turning from deep indigo-blue into black with a purple tinge; costa with a dark blue edge, very narrow at base, somewhat dilated posteriorly, connected with dark terminal area; the latter with anterior edge concave, from about $\frac{4}{5}$ of costa to tornus. Cilia dark grey with blackish-blue base. Hind wing greyish-ultramarine-blue, suffused with black along terminal $\frac{1}{4}$ and along termen, dorsum suffused with blackish-blue. Cilia pure-white, with a black basal line.

Limen V-shaped. Collieulum rather strong, short. Cestum broad, coiled twice, with a median longitudinal furrow. Terminal fold strong. Ovipositor lobes broad, obtusely pointed above (Slide No. 320 D, holotype).

Araucaria Camp, 800 m, March 17, 1939 (holotype), March 16, 1939. Two females.

***Zacorisca bovisanguis* spec. nov. (figs. 22, 27, 32)**

♂ 24 mm, ♀ 28 mm. Head, antenna, thorax and legs dark bronze-grey, shining violet, especially on face, tegulae and thorax; abdomen somewhat lighter, corethrogynae dark brown-grey, in male two anal segments golden-ochreous below. Fore wing with costal fold moderately broad to beyond $\frac{1}{4}$ of costa, thence very narrow to middle of costa; costa moderately gradually curved anteriorly, posteriorly straight in male, slightly curved in female, apex rounded, termen straight, vertical. Reddish-ferruginous with strong olive-violet and purple gloss. A narrow streak on extreme base of wing dark bronze-grey and purple, followed by a narrow, suffused orange streak along base of wing and base of costa, in male bright orange-red, continued as a minute bright yellow streak along costal edge to apex, in female reaching to middle of costa; dorsum faintly suffused with darker ferruginous. Cilia concolorous, somewhat lighter. (Underside of wing bright coppery-ferruginous-violet, orange-yellow on basal third.) Hind wing coppery-ferruginous-reddish, less glossy than fore wing, lighter at base in male, with pencils of dark grey hairs at base; costal fifth shining white. Cilia concolorous, but lighter, with coppery-golden gloss, a coppery-reddish antemedian line. (Under side of wing concolorous with cilia, base lighter.)

Unus broad, top rounded-truncate. Gnathos strong, with a long hook. Socius, a moderate series of bristles. Transtilla knob moderately large, strong, median projection strong, moderately long. Peniculus rather small, top conical. Valva short, basal part of saccus narrow. Juxta eup-shaped, rather flattened. Vinculum broad. Aedoeagus considerably chitinated (Slide No. 309 D).

Limen rectangularly bent, narrow, lateral parts dilated. Collieulum strong, moderately long, slightly constricted above middle. Cestum strong, with a median furrow, spiraled, terminal fold broad. Signum gradually narrowed towards point (Slide No. 322 D).

Top Camp. 2100 m, January 22, 1939 (holotype). Lake Habbema, 3250—3300 m, July 1, 1938 (allotype). Two specimens. Allied to preceding, and forming a connection with the following genus.

Chionothremma gen. nov. (fig. 35)

χιόν = snow, *θρέμμα* = a child

Head with appressed scales, sometimes closely appressed, but never as smooth as in the preceding genus, face covered with short, rather smooth scales. Ocelli present, posterior, sometimes inferior. Proboscis developed. Antenna in male moderately, in female minutely ciliated, scape moderate. Palpus moderate, subascending, median segment clothed with roughly appressed scales throughout, moderately or strongly dilated with roughly projecting scales towards apex above and beneath, terminal segment short, subacute, often partly concealed. Fore wing smoothly scaled, with a moderate costal fold in male, often silvery-white, with limited apical and terminal black markings. Cell narrowed posteriorly, 2 from $\frac{1}{2}$ — $\frac{2}{3}$, 3 from

Fig. 35: *Chionothremma placida* gen. nov., spec. nov., wing venuration female, head male and female and ventral aspect of anal segments with ovipositor and corethrogynae in female.

angle, 4 remote, considerably approximated to 5 at base, 6 remote, parallel, 7 separate, to termen. Hind wing without cubital pecten, 2 from beyond $\frac{1}{2}$ — $\frac{2}{3}$, 3 and 4 approximated or connate from angle, 5 closely approximated at base, 6 and 7 approximated towards base, connate or short-stalked. Abdomen with a large anal tuft in male, with a large ventro-lateral corethrogynae in female. Genitalia in male somewhat less complicated but of the same type as in the preceding genus, in female very much like those in *Zacorisca*.

Genotype *Chionothremma placida* spec. nov., male, female.

Closely allied to *Zacorisca*, and showing the same high specialisation,

except for the smooth head and the bright colours of the latter. The numerous, rather uniform species are not easy of discrimination. The colouring of head, palpi, abdomen and legs, and the genitalia in both sexes render sufficient specific characteristics. The species are of smaller size than those of *Zacorisca*. The genus is confined to New Guinea.

Besides the species recorded or described below, the following, formerly described species belong in this genus:

Chresmarcha pythia MEYRICK, 1920, Exot. Microl., vol. 2, p. 339 (Netherlands South New Guinea: Snow Mountains, Setekwa River).

Chresmarcha delia MEYRICK, 1924, *ibidem*, vol. 3, p. 110 (British New Guinea: Owgarra).

Zacorisca plicata DIAKONOFF, 1941, Treubia, vol. 18, p. 31, pl. 1, fig. 3, pl. 3, fig. 4 (Central North New Guinea: April River).

Zacorisca spectabilis DIAKONOFF, 1914, *ibidem*, vol. hors série, p. 37—38, figs. 5, 6 (Netherlands New Guinea: Wissel Lakes).

Zacorisca capnoptera DIAKONOFF, 1944, *tom. cit.*, p. 40, f. 3 (Netherlands New Guinea: Wissel Lakes).

Key to the known species of *Chionoethremma*

1. Ground colour of fore wing pure white or silvery-white 2
Ground colour of fore wing not thus 21
2. Fore wing without any markings. 3
Fore wing with marginal, terminal or apical black markings or with terminal third suffused with dark grey 5
3. Head light citric-yellow or white with face and vertex suffused with yellow and reddish 4
Head entirely white. *pallescens* spec. nov.
4. Head, palpus and thorax light citric-yellow, basal segment of palpus fuscous; smaller species: 17—18 mm *citricaput* spec. nov.
Head whitish, upper half of face and vertex suffused with yellow and reddish, palpus pale yellow; larger species: 22.5—26 mm. *nivisperennis* spec. nov.
5. Fore wing snow-white, terminal third suffused with dark grey
. *melanoleuca* DIAKONOFF (part)
Fore wing not thus 6
6. Fore wing silvery-white, hind wing more or less suffused with dark grey 7
Fore wing pure white, hind wing white, sometimes with terminal or apical black markings 16
7. Head and palpus orange, or rather bright fulvous-ochreous 8
Head and palpus pale yellow 9
8. Legs blackish. *patarea* MEYRICK
Legs ochreous *auripes* spec. nov.
9. Dark markings in fore wing and hind wing dark grey tinged fuscous; costal fold to beyond middle of costa, its edge convex throughout
. *plicata* DIAKONOFF
Dark markings in fore wing pure black, hind wing more or less suffused with dark grey; costal fold shorter, mostly with edge concave posteriorly. 10
10. Hind wing distinctly much paler anteriorly *ochricauda* spec. nov.
Hind wing rather evenly dark grey, sometimes only dorsum suffused with white 11

11. Fore wing distinctly suffused with dark grey except in disc anteriorly. *nebulicola* spec. nov.
Fore wing not thus suffused 12
12. Palpus pale yellow, tip black 13
Palpus entirely pale yellow 14
13. Black terminal markings preceded by pale yellow streaks on veins, reaching halfway towards cell *delia* MEYRICK
Black terminal markings preceded by very faint and narrow, scarcely perceptible yellowish suffusion *gracilis* spec. nov.
14. Venter dark brownish-grey; size 26—32 mm. *spectabilis*, DIAKONOFF
Venter not thus 15
15. Venter white; larger species: 24—28 mm *pythia* MEYRICK
Venter yellow-orange; smaller species: 18—22 mm *obscura* spec. nov.
16. Head, palpus, anterior $\frac{2}{3}$ of thorax, and patagium deep ferruginous.
. *sanguens* spec. nov.
Not thus. 17
17. Head, palpus and thorax anteriorly rather pale brownish-ochreous
. *ferratilis* spec. nov.
Not thus. 18
18. Fore wing with a distinct black apical dot and sometimes a series of black dots along termen 19
Fore wing with a narrow black line along costa posteriorly, and a series of triangular terminal markings 20
19. Fore wing and hind wing with a black apical dot *ocellata* spec. nov.
Fore wing with an apical dot and a series of small dots along termen, hind wing without markings *placida* spec. nov.
20. Head brightly fulvous *combusta* spec. nov.
Head pale yellow *caelestis* spec. nov.
21. Fore wing and hind wing evenly dark grey 22
Not thus. 23
22. Thorax dark grey, patagium yellow *capnoptera*, DIAKONOFF
Thorax white, collar orange *melanoleuca* DIAKONOFF (part)
23. Ground colour of fore wing deep orange, orange-yellow or orange-ochreous 24
Ground colour of fore wing pale yellow, pale orange-whitish, yellowish-whitish or creamy-whitish. 28
24. Fore wing yellow-orange or orange-yellow, apical half violet-purple
. *mesoxantha* spec. nov.
Not thus. 25
25. Fore wing with black markings 26
Fore wing without markings 27
26. Fore wing with a black apical dot *carbonifera* spec. nov.
Fore wing with a black terminal fascia *euxantha* spec. nov.
27. Head and palpus deep fulvous; larger species: 28—29 mm.
. *auriflua* spec. nov. (part)
Head and palpus light ochreous; smaller species: 19.5—22 mm
. *soligena* spec. nov.
28. Fore wing with black markings 29
Fore wing without black markings 30
29. Fore wing with a small black streak in apex and along upper half of termen
. *nigrangula* spec. nov.
Fore wing with a black terminal streak. *marginata* spec. nov.
30. Fore and hind wing concolorous pale yellowish-whitish *mutans* spec. nov.
Fore wing pale yellowish-whitish, hind wing brighter yellowish-ochreous
. *auriflua* spec. nov. (part)

Chionothremma mesoxantha spec. nov. (figs. 44, 50)*μέσος* = centre, *ξανθός* = yellow

♀ 24—28 mm. Head and thorax ochreous-orange. Palpus long, curved beyond middle, orange-ochreous, median joint scattered with minute black scales, terminal joint suffused with black at the outer side. Antenna with scape yellow-orange below, blackish above, flagellum blackish. Abdomen yellow-orange, anal segment and corethrogynae greenish-black, ovipositor lobes deep orange. Legs orange-yellow. Fore wing with costa gradually curved anteriorly, less curved posteriorly, apex rounded, termen scarcely concave, vertical. Yellow-orange, or orange-yellow, apical half of wing violet-purple, in one specimen with bluish shine, with anterior edge more or less concave, oblique, from costa beyond $\frac{2}{5}$ or about middle, to dorsum beyond or at $\frac{3}{5}$. Cilia purple-violet. Hind wing yellow-orange or orange-yellow, a shade deeper than fore wing, apical area dark violet-purple, its inner edge slightly suffused, concave, from $\frac{1}{4}$ or $\frac{1}{6}$ of costa, little oblique, narrowly produced along termen, not reaching tornus. Cilia purple-violet, yellow on dorsum.

Limen curved, with deep excavations at the sides, lateral projections moderate, above these a triangular plate at each side. Colliculum weak, cylindrical. Cestum peculiar: not coiled gradually dilated posteriorly, with series of scobinations, terminal fold long; wall of ductus bursae distinctly chitinated below. Bursa copulatrix rather small. Signum small. Eighth and ninth segments considerably sclerotized, the latter forming a dorsal collar around the ovipositor (Slide No. 323 D).

Top Camp, 2100 m, January 21—February 4, 1939. Moss Forest Camp five km northeast of Lake Habbema, 2800 m, October 29, 1938 (holotype). Three females.

Chionothremma ferratilis spec. nov. (fig. 36)

♂ 28 mm. Head with vertex and collar rather pale brownish-ochreous, face white. Palpus brownish-ochreous, base whitish, median segment darker towards apex, terminal segment dark greyish-fuscous. Antenna with scape white below, brownish-ochreous above, flagellum blackish, dotted white above to about $\frac{1}{4}$. Thorax white anteriorly light brownish-ochreous. Abdomen glossy white, tergites showing through, blackish, anal segment ochreous-whitish below, somewhat darker ochreous laterally, anal tuft whitish above. Legs with coxae pale ochreous, femora white, tibiae and tarsi suffused pale ochreous, anterior tarsus dark ochreous-fuscous. Fore wing with broad costal fold, reaching to beyond $\frac{2}{5}$ of costa, with edge rounded, smooth to beyond middle, indent there, narrowed and ciliated posteriorly; costa little curved but considerably oblique anteriorly, straight posteriorly, apex rounded, somewhat projecting, termen slightly concave above, rounded beneath, vertical. Creamy-white, more distinctly tinged with creamy on basal half of costal fold, very sparse separate black scales scattered here and there over the wing; basal fourth of costal edge

black, base of costa with a small fulvous-ochreous patch; edge of wing from end of costal fold to below apex with a minute suffused blackish line, distinct and jet-black around apex, termen with faintly indicated elongate small marks on ends of veins, ultimate one on vein 4; a very narrow sordid yellowish marginal suffusion from end of fold to tornus. Cilia white with snow-white basal third, barred with grey along middle, especially around apex, costal cilia blackish before apex. Hind wing white, apical sixth greyish black, with irregularly suffused anterior edge; black scales on veins 7 and 6 reaching to cell, on veins 5—3 reaching halfway to cell, on base of vein 2 still shorter. Cilia pure white.

Tegumen moderately narrowed below. Uncus very large, top broadly dilated and rounded, with a small emargination. Socius, a short patch of thin bristles. Gnathos strong, arms gradually curved, hook moderate. Transtilla knob small, strongly dentate, lateral projection strong. Peniculus long, clavate, bristled, base narrow. Valva rather short, semispheroid. Anellus strong, excavate below, ventral margin with lateral emarginations. Vinculum broad. Aedoeagus with obliquely truncate top (Slide No. 354 D).

Moss Forest Camp, 3250—3300 m, October 31, 1938, "flying in day-time". One male.

***Chionothremma sanguens* spec. nov. (fig. 37)**

♂ 22 mm. Head deep reddish-ferruginous, face white except edge of eye above. Palpus deep ferruginous, white along basal two-thirds of median joint above and on inner side. Antenna light grey, ciliations white, scape deep ferruginous, white anteriorly. Thorax and patagia deep reddish-ferruginous, anterior $\frac{1}{4}$ white, tinged pale yellowish posteriorly. Abdomen silvery-white, preanal segment black beneath, anal tuft whitish-ochreous. Legs whitish, coxae, tibiae and tarsi suffused with fulvous. Fore wing with a strong costal fold to $\frac{1}{3}$, broadest before middle, its inner edge rounded and smooth to middle, ciliated posteriorly; costa gradually arched to middle, straight posteriorly, apex rounded, termen straight, vertical. Snow-white, base of wing on upper half and base of costa with a deep reddish-ferruginous patch, preceded by a narrow, light yellow suffusion, costal fold and costa very faintly tinged light ochreous; a narrow dark wine-red streak in apex and along termen from base of vein 8 to 3, its inner edge somewhat suffused, with dentations on veins. Cilia glossy snow-white. Hind wing and cilia glossy snow-white.

Tegumen strongly clavate, base narrow. Uncus narrower, constricted in middle, top broad rounded. Socii, moderate narrow series of bristles. Gnathos moderate, strong, hook long. Transtilla knob long, large, densely dentate, median projection narrow, strong. Peniculus clavate, base rather broad. Juxta with a furrow below, ventral margin rounded. Vinculum broad. Valva very short. Aedoeagus with obliquely truncate strong top, and a long acute point (Slide No. 316 D).

Top Camp, 2100 m, January 22, 1939. One specimen.

Chionothremma patarea (MEYRICK), 1924

Chresmarcha sibyllina MEYRICK, 1910 ♀, (*nec* ♂ !), Proc. Linn. Soc. N.S. Wales, vol. 35, p. 220.

Chresmarcha patarea MEYRICK, 1924, Exot. Microl., vol. 3, p. 110.

Chresmarcha pythia, DIAKONOFF, (*nec* MEYRICK), Zool. Meded. Mus. Leiden, vol. 21, p. 142, 1939.

Distribution: British New Guinea. Owgarra.

♂ 26 mm. Head deep orange-fulvous, face white. Palpus rather long deep orange-fulvous, terminal joint minute. Thorax silvery-white, edged with deep orange-fulvous anteriorly, prothorax yellow below. Abdomen glossy, dark leaden-grey, anal tuft pale ochreous-whitish, preanal segment ochreous below. Fore wing somewhat broader than in female, with broad costal fold reaching to beyond $\frac{1}{4}$, its inner edge convex throughout, gradually curved, ciliated along apical $\frac{1}{4}$. In all other features similar to the female.

Legs in both sexes black. Female 28—29 mm, fore wing in one specimen somewhat broader than in other two. Abdomen very long, corethrogynae light fulvous-ochreous, tinged bronze.

Baliem Camp, 1700 m, November 16—27, 1938, "flying in daytime". Three males, two females. Differs from MEYRICK's description by absence of yellow suffusion along costa and of ochreous suffusion in costal cilia, the latter being snow-white, but we nevertheless regard this material as conspecific.

Now that we are better acquainted with this large genus, we are satisfied that the synonymy published in our above mentioned paper can be maintained no longer, and that it is better to regard both *pythia* MEYRICK 1920 and *delia* MEYRICK 1924 as good species, distinct from *patarea*, pending further evidence by close study of the genitalia of the type specimens of these species, which are in the British Museum and not available to us at present.

Chionothremma melanoleuca (DIAKONOFF), 1944 (fig. 38)

Zacorisca melanoleuca DIAKONOFF, 1944, Treubia, vol. hors série, p. 36, pl. 14, figs 1—2.

Distribution: Dutch New Guinea, Wissel Lakes, 1750 m.

♂ 21.5 mm (allotype). Head blackish, face white, slightly suffused with orange, narrowly edged with black. (Palpi missing.) Antenna dark grey dotted with whitish (imperfect), scape black, white below. Thorax dark grey, suffused with whitish, tegula light ochreous (imperfect). Abdomen dark mouse-grey, anal tuft ochreous-whitish, anal segment below fulvous. Legs black, suffused with white and pale yellow. Fore wing with costal fold rather narrow to before middle, elongate-ovate, costa gradually curved anteriorly, apex rounded, termen rounded, vertical. Light bluish-grey, costal fold suffused with pale ochreous-creamy, edged with blackish

Male genitalia of *Chionothremma* gen. nov. Fig. 36: *ferratilis*, spec. nov. Fig. 37: *sanguens* spec. nov. Fig. 38: *melanoleuca* DIAKONOFF. Fig. 39: *ochrcauda* spec. nov. Fig. 40: *obscura* spec. nov. Fig. 41: *caelestis* spec. nov. Fig. 42: *auripes* spec. nov. Fig. 43: *ocellata* spec. nov.

anteriorly, posterior half with long whitish cilia; costal edge narrowly suffused with black, apical and terminal edge with somewhat broader black suffusion, extending along terminal veins so as to form narrow black streaks halfway towards cell; a blackish streak on base of dorsum. Cilia white, basal half black. Hind wing blackish-grey, cilia as in fore wing.

Tegumen much dilated. Uncus rounded. Gnathos short, curved upward, hook moderate. Socius, a series of bristles. Transtilla knob moderate, on a long slender stalk. Peniculus rather long. Vinculum subovate (Slide No. 435 D).

Baliem Camp, 1700 m, November 16—27, 1938 (allotype). One specimen.

***Chionothremma obscura* spec. nov. (figs. 40, 46, 52)**

♂ 18—18.5 mm, ♀ 22 mm. Similar to *ochricauda* spec. nov. (page 77), but with head brighter yellow, face in male white. Abdomen in male: three basal segments brownish black, posterior margin and sides of third segment and following two segments dark ochreous, sixth and seventh segments brownish-black, anal tuft golden-whitish, venter bright orange-ochreous, somewhat paler at base, preanal segment darker brownish-black from below and at the sides, with an orange patch in middle of posterior edge. Abdomen in female: blackish, fifth and sixth segments orange-yellow, venter yellow at base, yellow-orange posteriorly, corethrogynae large, black. Legs with coxae and femora silvery white, tibiae yellow-ochreous, tarsi brownish. Fore wing narrower, apical third of costa in both sexes edged with jet-black, terminal markings more connected with each other, forming a conspicuous terminal band, dentate anteriorly; costal fold broad, its inner edge convex, considerably curved at base, less curved posteriorly, shortly ciliated along its entire length. Yellow pre-terminal suffusion on veins reaches halfway to cell. Hind wing black, dark grey anteriorly. Cilia in both fore and hind wing snow-white. Fore wing from underside narrowly suffused with blackish along costa and on terminal fifth, more evenly in female.

Tegumen clavate, base moderate. Uncus moderate, top rounded, slightly emarginate. Socius, a small rounded patch of bristles. Gnathos strong, moderately long, hook moderate. Transtilla knob large, elongate, dentations short, median projections long, almost touching each other in middle. Peniculus rather long. Juxta strongly corrugated. Vinculum very broad, subrectangular. Valva broad, semispheroid. Aedocagus with obliquely truncate top, without point (Slide No. 359 D).

Limen, a broad plate with narrow deep lateral emarginations and rather short lateral projections. Colliculum rather long, somewhat narrowed below. Cestum long and narrow, without a furrow, but with a longitudinal ridge running throughout, without torsions, strongly coiled; terminal fold rather short. Signum robust, edge short-serrate. Anal segments weak (Slide No. 360 D).

Araucaria Camp, 800 m, March 9, 1939 (allotype). Sigi Camp, 1500 m,

February 17, 1939; February 26, 1939 (holotype). Three males, one female. Allied to *pythia* MEYRICK and to the two following species. The costal fold is shorter and broader than in *ochricauda*, spec. nov.

Chionoethremma gracilis spec. nov. (figs. 49, 55)

♀ 21 mm. As preceding, but with abdomen dark grey, scattered and edged along posterior margin of segments with white; apical segment with a pale yellow tuft with white base. Fore wing with costa very narrowly edged with black in middle, broader towards extremities, yellow suffusion on termen reduced to faint traces between triangular terminal spots, a large tooth in apex on vein 7, other dentations smaller, narrow, connected along edge of wing; venter white, corethrogynae large, dark bronze-grey. Legs with coxae and femora whitish, tibiae brownish, mixed with white, tarsi whitish, dark brown above. Cilia snow-white, around apex with grey basal half. Hind wing brownish-grey, darker towards apex. Cilia snow-white, with grey basal scales around apex, grey on dorsum.

Limen, a moderately broad plate (much narrower than in *obscura*, spec. nov.), lateral emarginations broader, lateral projections moderate. Colliculum moderate, with strong wall, lower edge with a V-shaped emargination. Cestum broad, tortuous, terminal fold very broad and long. Signum long, narrow. Eighth segment forming a dorsal collar around ovipositer (Slide No. 361 D).

Baliem Camp, 1700 m, November 16—27, 1938. One specimen. Distinct by the colouring of the abdomen and the grey scales on cilia.

Chionoethremma ochricauda spec. nov. (figs. 39, 48, 54)

♂ 17 mm, ♀ 19—21 mm. Head and palpi pale yellow, the latter with terminal joint in male black, in female dark fuscous, drooping. Thorax white, with anterior fourth pale yellow above and beneath, meso and metasternum ochreous-tinged. Abdomen pale creamy-ochreous, venter darker ochreous, basal segment whitish, anal tuft in male pale ochreous-whitish, brightly shining, preanal segment suffused with blackish-brown below; in female top of abdomen blackish-brown above, corethrogynae shining greyish-ochreous. Legs pale-ochreous, anterior femur pale yellow. Fore wing with costal fold to $\frac{2}{5}$, inner edge gradually curved throughout, shortly ciliated beyond middle; costa rather abruptly curved anteriorly, apex rounded, in male termen somewhat rounded; in female straight along upper third, rounded beneath. Snow-white; costal edge in male narrowly greyish-black, more distinctly so beyond costal fold; posterior two-fifth of costa edged with jet-black, this edge dilated posteriorly (altogether absent in female); black triangular dots on ends of veins 8—3, in male narrowly connected along termen, except the last one; in female elongate on base of veins 10—9, triangular on veins 8—3, along termen less distinctly connected with each other than in male; in both sexes dark markings preceded by yellow suffusion on veins, posteriorly not reaching

halfway to cell. Cilia snow-white. Hind wing at base whitish in male, in female pale grey, in both sexes gradually turning blackish posteriorly, cilia snow-white. Fore wing with underside suffused blackish on apical third, inner edge of this suffusion very oblique, and narrowly suffused along costa; hind wing below suffused only along apical fifth or less.

Tegumen clavate, base rather narrow. Uncus with broad base, top rounded. Socius, a moderate patch of sparse, irregularly scattered bristles. Gnathos strong, hook broad, rather short. Transtilla knob moderate, S-shaped, dentations decreasing in size laterally, median projection moderate. Peniculus rather long, clavate, base moderate. Juxta strong, ventral edge rounded and projecting ventrally. Vinculum narrowed below. Valva short, broad, almost spheroid. Aedoeagus with top obtuse (Slide No. 356 D).

Limen narrow, lateral emarginations moderate, lateral projections short. Colliculum short, strongly sclerotized. Cestum very broad, strongly tortuous, terminal fold broad, short. Signum robust. Eighth tergite forming a ring around ovipositor (Slide No. 357 D).

Rattan Camp, 1200 m, February 19, 1939 (holotype). Mist Camp, 1800 m, January 11, 1939 (allotype), January 17, 1939. One male, three females. Closely allied to *delia* MEYRICK, but distinct by the colouring of abdomen and of cilia in the fore wing. Also closely allied to the preceding and to the following species.

***Chionoethremma nebulicola* spec. nov. (figs. 45, 51)**

♀ 20 mm. Similar to preceding, but with thorax below and femora and tibiae blackish, suffused with white, abdomen dark ochreous above, orange-ochreous beneath, tip dark bronze-grey above, corethrogynae darkly coloured (damaged). Hind wing darker grey-blackish towards apex. Fore wing below suffused with blackish on terminal and costal third, hind wing below entirely suffused, except in middle of disc.

Limen narrow, lateral emarginations moderate, lateral projections rather short, broad. Colliculum moderate. Cestum long, narrow, corrugated longitudinally, tortuous, with a large terminal coil; terminal fold broad, short. Signum small. Eighth segment moderately sclerotized (Slide No. 358 D).

Mist Camp, 1800 m, January 17, 1939. One specimen. Closely allied to the preceding.

***Chionoethremma auripes* spec. nov. (fig. 42)**

♂ 24 mm. Head and palpus rather bright fulvous-ochreous, face white, terminal joint of palpus darker fulvous. Antenna with scape fulvous-ochreous, flagellum blackish, white-ringed. Thorax snow-white, anteriorly narrowly edged with fulvous-ochreous and faintly suffused with pale yellow. Abdomen grey-whitish anteriorly, tinged ochreous posteriorly, anal tuft whitish-grey and ochreous; venter light fulvous-ochreous, preanal

Female genitalia of *Chionothremma* gen. nov. Ovipositor and ostium. Fig. 44: *mesoxantha* spec. nov. Fig. 45: *nebulicola* spec. nov. Fig. 46: *obscura* spec. nov. Fig. 47: *combusta* spec. nov. Fig. 48: *ochricauda* spec. nov. Fig. 49: *gracilis* spec. nov. Ductus bursae and bursa copulatrix. Fig. 50: *mesoxantha*. Fig. 51: *nebulicola*. Fig. 52: *obscura*. Fig. 53: *combusta*. Fig. 54: *ochricauda*. Fig. 55: *gracilis*.

segment black. Legs with coxae, tibiae and tarsi light fulvous-ochreous, femora suffused with silvery-white. Fore wing with broad costal fold to beyond middle, its edge smooth and almost straight to about $\frac{3}{5}$ of its length, convex there, ciliated posteriorly; costa gradually strongly arched anteriorly, straight posteriorly, apex rounded, termen straight, vertical. Snow-white, base of costa with a minute pale fulvous suffusion; costa suffusedly and faintly blackish throughout, beyond costal fold a jet-black marginal streak reaching around apex and along termen to vein 3, with triangular dentations on veins, reaching about one-sixth towards cell, preceded by a faint yellow suffusion from costa before apex to tornus, smaller triangular black dots, one on end of vein 2, and one on end of fold. Cilia snow-white, posterior half dark grey around apex and upper two-thirds of termen; basal half faintly interrupted by a few greyish bars. Hind wing dark grey, white along basal three-fourth of costa, tinged blackish towards apical edge, suffused with white on dorsum. Cilia snow-white, with a broad grey shade.

Tegumen clavate, base rather narrow. Uncus rather broad, not dilated, top rounded, scarcely emarginate. Socius, a moderate group of scattered short bristles. Gnathos very strong, hook broad. Transtilla knob moderate, densely dentate, median projection moderate. Peniculus rather long, clavate, base narrow. Juxta corrugated. Vinculum somewhat narrowed below. Valva moderate, broadly semiovate. Aedoeagus with a long point at apex (Slide No. 355 D).

Rattan Camp, 1200 m, February 19, 1939. One specimen. Closely allied to *patarea* and *ochricauda*, easily recognisable by yellow legs, and paler head and palpi.

***Chionothremma caelestis* spec. nov. (fig. 41)**

♂ 22.5 mm. Head fulvous-ochreous, face white. Palpus fulvous with ochreous base. Antenna with scape whitish, flagellum blackish, dotted with white above. Thorax snow-white, shoulder pale yellow-ochreous. Abdomen pale golden-ochreous, venter fulvous-ochreous, preanal segments somewhat darker, anal tuft ochreous-whitish. Legs fulvous, paler above, anterior femur white. Fore wing with costal fold moderately broad, reaching beyond two-fifth of costa, its edge smooth and convex to middle, ciliated posteriorly; costa arched at base, straight posteriorly, apex obtuse, termen rounded. Snow-white, costal margin narrowly edged with black, costa with a narrow, suffused black streak from about middle of fold, dilated towards apex and well-defined from beyond middle of costa; more or less suffused, elongate small triangular patches on base of veins 11 to 9; a series of jet-black small triangular dots in apex and along termen on ends of veins, two upper larger dots connected by a narrow marginal streak; a pale citric-yellow marginal suffusion along veins reaching one-third towards cell. Cilia snow-white, on costa suffused with dark grey, in apex and along upper half of termen faintly barred with

grey along middle. Hind wing snow-white, somewhat glossy, a blackish-grey marginal line in apex and along termen, broadest above, very narrow below, its inner edge suffused and preceded by black irroration, before apex reaching halfway towards cell. Cilia snow-white, basal third with small groups of grey scales in apex and along upper half of termen.

Genitalia as in preceding, but with uncus subquadrate, top less rounded, distinctly emarginate. Socius only with four-five bristles. Gnathos very strong, hook long, broad. Transtilla and peniculus approaching those in *auripes* spec. nov. Juxta stronger corrugated. Vinculum more narrowed below. Aedoeagus with apparently shorter point (Slide No. 352 D).

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

***Chionothremma combusta* spec. nov. (figs. 47, 53)**

♀ 18 mm. Head, palpus and scape of antenna bright fulvous, terminal segment of palpus darker, infuscated at base. Thorax white, bright fulvous anteriorly. Abdomen whitish-ochreous, venter light ochreous, corethrogynae large, jet-black. Legs fulvous-ochreous. Fore wing rather narrow, costa gradually curved anteriorly, less curved posteriorly, apex rounded, termen straight and vertical above, broadly rounded beneath. Fore wing snow-white; base of costa with a short bright fulvous streak, posterior $\frac{2}{5}$ of costa with a narrow jet-black streak, somewhat dilated around apex, continued along termen in a series of five triangular black dots on veins, connected by a narrow marginal black line; a faint pale citric-yellow terminal suffusion, reaching one-third towards cell. Cilia white (imperfect). Hind wing white, a blackish-grey suffusion in apical seventh of wing, continued along upper part of termen, very narrow below and reaching to anal angle. Cilia snow-white.

Limen moderately broad, lateral emarginations narrow, lateral projections moderate, acute, with broad base. Ostium cylindrical. Cestum long, narrow, coiled terminally, terminal fold long. Signum broad. Anal segments weak (Slide No. 353 D).

Mist Camp, 1800 m, January 17, 1939. One specimen. The colouring of the hind wing suggests that this may be the other sex of the preceding species, *caelestis*; however, the differences are so great that without additional material we prefer to regard this female specimen as belonging to a distinct species.

***Chionothremma ocellata* spec. nov. (figs. 43, 64, 72)**

♂ 16–17 mm, ♀ 17–18 mm. Head and palpus pale citric-yellow, face in male white; terminal segment of palpus black, except upper edge and tip. Thorax pale yellowish anteriorly, white posteriorly. Abdomen white, tinged ochreous at base, in male greyish towards apex, preanal segment black below, apical tuft purely white above, ochreous-greyish below; corethrogynae large, greyish-black, ovipositor lobes orange. Legs white, fore tarsus ringed with black. Fore wing, and costal fold moderately broad,

the latter reaching to beyond middle of costa, in male costa little curved anteriorly, straight posteriorly, in female considerably curved anteriorly, gently posteriorly, apex rounded, termen straight and vertical above, rounded and little oblique beneath. Snow-white, posterior fourth of costa and termen with a minute suffused yellow streak, reaching to tornus; a short suffusion on base of costa of the same colour, an ovate well-defined jet-black dot in apex. Cilia snow-white. Hind wing glossy, white, faintly tinged pale yellowish, a blackish spot in apex, its inner edge suffused, shortly indent above. Cilia snow-white.

Tegumen erect, clavate, base narrow. Uncus moderate, erect-ovate. Socius, an elongate patch of minute bristles. Gnathos long, arms slender, dilated before apex, hook long, narrow. Transtilla knob moderate, elongate, median projection long. Peniculus rather long, slender, conical. Vinculum ovate, lower edge somewhat undulate. Valva semispheroid. Aedoeagus with a moderate point (Slide No. 315 D).

Limen narrow, laterally with weak but rather broad plates, lateral emarginations scarcely present, lateral projections minute. Colliculum moderate, slightly dilated below. Cestum moderately broad, tortuous, terminal fold moderately broad, rather long. Signum moderate. Eighth tergite truncate (Slide No. 334 D).

Mist Camp, 1800 m, January 11—17, 1939 (holotype: January 12). Top Camp, 2100 m, January 25—28, 1939 (allotype). Two males, four females. Allied to *carbonifera* spec. nov., also showing a connection with the *pythia* group.

Chionoethremma placida spec. nov. (figs. 35, 56, 68, 70)

♂ 19—22 mm, ♀ 21—23 mm. Head pale yellow, face in male paler beneath. Palpus pale yellow, median segment mixed with black, terminal segment black, tip mixed with white. Thorax pale yellow anteriorly, paler in female, whitish in male posteriorly. Abdomen snow-white, suffused anteriorly with black, except hind edges of segments in male, with brownish in female, venter snow-white, preanal segment blackish below and at the sides, anal tuft whitish-ochreous, shining in male, corethrogynae brownish-black. Legs white, anterior tibia and tarsus suffused with blackish above, articulations with fine white rings, median tarsus slightly tinged ochreous. Fore wing with costal fold moderately broad, to before middle, costa considerably curved at base, straight posteriorly, apex rounded, termen in male gently curved and somewhat oblique, termen in female straight above, rounded and somewhat prominent beneath. Snow-white, apex with a black dot reaching along costa to base of vein 8 or 9, with a large dentation on vein 6, a terminal row of small black dots on veins, not reaching tornus, sometimes confluent into a black terminal streak with rounded dentations on veins (almost entirely disappearing in worn specimens); black markings preceded and surrounded by yellow suffusion; same suffusion on base of wing shortly continued along base of

Male genitalia of *Chionothremma* gen. nov. and *Diphtheropyga*, gen. nov. Fig. 56: *C. placida* spec. nov. Fig. 57: *C. nigrangula*, spec. nov. Fig. 58: *C. soligena* spec. nov. Fig. 59: *C. euzantha*, spec. nov. Fig. 60: *C. mutans* spec. nov. Fig. 61: *C. nivisperennis* spec. nov. Fig. 62: *D. niphadea* spec. nov.

costa and on base of dorsum to one-fifth; in male costal edge narrowly black to one-fourth. Cilia snow-white. Hind wing white, apical edge sometimes narrowly black in male, this edge very narrow and indistinct in female; suffused with pale yellowish on veins posteriorly and along posterior edge. Cilia snow-white.

Tegumen clavate, base rather narrow. Uncus broad, top gradually rounded. Socius small, a few bristles. Gnathos short, arms and hook broad. Transtilla knob elongate, median projection long, slender. Peniculus rather short, rounded-clavate. Juxta corrugate, with a median furrow below, ventral edge slightly projecting in middle. Vinculum short, broad. Valva moderately elongate. Aedoeagus with top obliquely excavate (Slide No. 317 D).

Limen narrow, strong, angulate in middle, lateral projections moderately long, strong; lateral rods dilated, forming at each side a plate with concave inner edge. Colliculum short, very strong. Cestum broad, with a shallow longitudinal furrow, edges much thinner than middle portion. Terminal fold long, its lower edge somewhat excavate. Signum strong. Eighth tergite with posterior edge somewhat concave (Slide No. 335 D).

Moss Forest Camp, 2800 m, October 25, 1938. (One female without yellow suffusion on base of dorsum). Lake Habbema, 3250—3300 m, end July to end August, 1938 (holotype, allotype). (L. J. TOXOPEUS, L. J. BRASS.) Three males, ten females.

Chionoethremma citricaput spec. nov. (figs. 66, 71)

♀ 17—18 mm. Head, thorax and palpus light citric-yellow, the latter with terminal segment fuscous. Antenna with scape bright yellow, flagellum black, minutely ringed with white. Abdomen bright ochreous suffused with white above, corethrogynae large, broad, dark bronze-grey. Legs light ochreous, paler basally. Fore wing with costa gradually strongly curved from base to beyond one-third, less curved posteriorly, apex rounded, termen straight, vertical. Silvery-snow-white, a light citric-yellow suffusion at base of wing, narrowly produced along costa to one-sixth; a narrow, well-defined deep yellow marginal streak along posterior sixth of costa, around apex and along termen to before tornus. Cilia snow-white. Hind wing and cilia snow-white.

Limen narrow, with a short V-shaped indentation in middle, lateral emarginations rounded, lateral projections very short. Colliculum rather short, narrowed below top and towards end. Cestum moderately broad, coiled twice, with a slight median longitudinal ridge. Terminal fold short. Signum broad, its edge finely serrate in middle. Eighth tergite truncate (Slide No. 329 D).

Top Camp, 2100 m, January 21 (type), 22, 28, 1939. Three specimens.

Chionothremma carbonifera spec. nov. (figs. 63, 69)

♀ 16—18 mm. Head deep orange-ochreous, yellowish in male, palpus and scape of antenna orange-ochreous, pale yellow in male, terminal segment somewhat darker, in male suffused with black externally. Flagellum of antenna blackish in male, greyish, white-ringed in female. Thorax orange-ochreous. Abdomen light ochreous-yellow, darker in male, with darkly coloured tergites showing through, venter pale yellow, preanal segment jet-black from below, anal tuft whitish, mixed with greyish, glossy; corethrogynae large, dark bronze grey, mixed with jet-black. Legs yellow, anterior tarsus suffused with deep orange-ochreous. Fore wing with costal fold rather broad, reaching to before middle of costa; costa strongly arched anteriorly, in male straight posteriorly, in female broadly prominent at $\frac{2}{3}$, apex rounded; termen straight, vertical. Bright yellow-orange suffused with deep ochreous-orange on base of costa; markings in male: a minute, short blackish streak along costal edge, beginning before base of wing, a moderate black fascia in apex and along termen, dilated in apex, its inner edge concave, suffused, forming irregular short dentations on veins; markings in female: a moderate ovate patch in apex not reaching one-fourth towards cell, connected with a narrow suffused streak along termen to vein 6; a few black scales along terminal edge to above middle. Cilia yellow-orange with paler posterior half. Hind wing and cilia somewhat paler, in male apex blackish, connected with a black suffusion reaching to base of vein 2, very narrow below, in female a small elongate black mark in apex.

Limén moderately broad, strong, convex in middle, lateral emarginations bluntly angular, lateral projections broadly triangular, moderately long, lateral rods dilated, deeply concave in middle. Colliculum very strong, somewhat narrowed above, with a moderate split ventrally. Cestum narrow, not tortuous, with a large coil around bursa copulatrix. Signum broad, capitulum (i.e., rounded external projection) ovate. Eighth tergite broad, rounded (Slide No. 333 D).

Top Camp, 2100 m, January 21, 25 (type), 28, 1939. Three specimens.

Chionothremma nigrangula spec. nov. (figs. 57, 65, 73)

♂ 20.5 mm. Head, thorax white; palpus, vertex of head and tegulae pale citric-yellow, median segment mixed with black, terminal segment black. Abdomen blackish with hind edge of segments pale bronze-brownish anteriorly, bronze-brownish with fore edge of segments black posteriorly, venter dark brownish-grey, preanal segment black, apical tuft silvery-white. Legs pale ochreous. Fore wing with a broad costal fold to beyond two-fifths, costa slightly curved and oblique along this, straight in middle, little curved before apex, apex rounded, termen straight, vertical, rounded beneath. Whitish, faintly tinged ochreous anteriorly, suffused along apical third with pale citric-yellow; a small black suffusion in apex continued along upper three-fourths of termen by a row of suffused small dots

becoming smaller downward. Cilia silvery-white, faintly tinged yellowish. Hind wing white, suffused with pale ochreous except at base, brighter towards apex; a small dark brown suffused streak in apex and on termen running as far as vein 5, narrowed below. Cilia silvery-white.

♀ 20 mm. Head, palpus, scape of antenna and thorax pale yellowish-whitish, apex of median segment of palpus mixed with blackish, terminal segment mixed with dark grey. Abdomen pale whitish-ochreous, corethrogynae extremely large, fuscous. Fore wing abruptly arched at base, less curved but distinctly prominent at $\frac{2}{3}$, apex rounded, termen straight above, rounded and slightly prominent below. Legs ochreous, paler at base, anterior tarsi ringed with brown. Pale sulphur-yellow anteriorly, brighter yellow posteriorly. A narrow jet-black striga along apex and upper $\frac{2}{3}$ of termen, very narrow and interrupted below, broadest in apex. Cilia concolorous, somewhat paler, with a faint antemedian line. Hind wing pale yellow, somewhat darker in apex, a few minute black points on apical edge of wing. Cilia concolorous.

Tegumen elongate-clavate, longer than in *carbonifera*. Uncus strong, top rounded, deeper emarginate. Socius somewhat denser bristled. Gnathos somewhat less curved. Transtilla knob more elongate, denser dentate, median projection shorter. Peniculus much shorter, obliquely conical. Valva shorter, rounded-subquadrate. Aedocagus with broad, long and stronger sclerotized point (Slide No. 314 D).

Limen rather narrow, broadly convex, two very small lateral emarginations on each side, no lateral projections, lateral rods broad, short. Colliculum strong, very short, ventral split wide. Cestum broad, tortuous (three times), and with a median furrow, terminal fold long, broad. Signum moderate, capitulum long. Eighth tergite broad, rather weak (Slide No. 332 D).

Moss Forest Camp, 2800 m, October 9—November 5, 1938 (holotype); Moss Forest Camp, five km northeast of Lake Habbema, 2800 m, October 14, 1938 (allotype). Two specimens. Closely allied to preceding.

***Chionothremma marginata* spec. nov. (figs. 67, 74)**

♀ 18—20.5 mm. Head and thorax whitish, touched with pale citric-yellow or pink, palpus whitish, touched with creamy or with faint pink, terminal segment in one specimen black. Abdomen whitish, corethrogynae bronze-greyish-brown. Legs light ochreous, tibiae suffused with brown, tarsi tinged brown. Fore wing moderately broad, costa curved anteriorly, straight posteriorly, faintly concave before apex, apex rounded, termen straight above, rounded beneath. Whitish, touched with very pale creamy-pink, a very faint streak on base of dorsum and a moderately broad pale yellowish fascia before black terminal streak dilated above, shortly continued anteriorly along costa and in tornus; a narrow, black terminal streak from apex to tornus, narrowed below, its inner edge somewhat suffused. Cilia whitish touched with pink, basal half black, well-defined

Female genitalia of *Chionothremma* gen. nov. Ostium and ovipositor. Fig. 63: *carbonifera* spec. nov. Fig. 64: *ocellata* spec. nov. Fig. 65: *nigrangula* spec. nov. Fig. 66: *citricaput* spec. nov. Fig. 67: *marginata* spec. nov. Fig. 68: *placida* spec. nov. Ductus bursae and bursa copulatrix. Fig. 69: *carbonifera*. Fig. 70: *placida*. Fig. 71: *citricaput*. Fig. 72: *ocellata*. Fig. 73: *nigrangula*. Fig. 74: *marginata*.

outwardly except in tornus, with a faint paler basal line. Hind wing whitish, touched with creamy-pink, not paler than fore wing, hardly becoming paler towards base, apex and termen with a suffused minute black marginal streak between veins 6—7, sometimes indistinct. Cilia whitish, with basal half around apex and along termen as far as vein 5 dark leaden-grey, well-defined anteriorly, pale pink elsewhere.

Limen moderately broad, membranous, ill-defined, broadly convex, laterally strong and distinct: lateral emarginations oblique-angular, lateral projections broadly triangular, moderately long, curved below, lateral rods dilated, with inner edge concave. Colliculum moderate, cylindrical. Cestum broad, tortuous, terminal fold moderate. Signum moderate. Eighth tergite truncate (Slide No. 331 D holotype).

Moss Forest Camp, 2800 m, October 9—November 5, 1938 (holotype). Two specimens. A very distinct species which can easily be distinguished from all others, except the following one, by black basal half of cilia.

Chionothremma euxantha spec. nov. (figs. 59, 81, 82)

εὐξανθός = very yellow

♂ 16 mm, ♀ 17.5 mm. Head and thorax pale yellow. Palpus pale yellow, median segment mixed laterally with black except at apex, terminal segment black. Antenna black, dotted with white, scape pale yellow. Legs pale orange-ochreous, anterior pair brighter, tarsi fuscous, ringed with pale ochreous. Fore wing broad, truncate, not dilated, costa obliquely curved along $\frac{2}{5}$, straight posteriorly, apex rounded, termen hardly sinuate, vertical. Bright orange-ochreous, slightly paler on basal fourth; a jet-black rather narrow terminal line from apex almost to tornus, in apex somewhat dilated, its edge slightly suffused, regularly concave. Cilia light orange-ochreous, basal $\frac{2}{5}$ dark grey, paler towards base. Hind wing pale orange-ochreous, turning pale ochreous on basal half; a narrow black streak in apex and along upper third of termen, broadest in apex, its edge irregularly suffused and irrorated with ground colour. Cilia pale orange-ochreous, turning pale ochreous on lower part of termen and on dorsum, basal $\frac{2}{5}$ around apex and along upper third of termen dark grey, paler towards base.

Tegumen clavate, broad above. Uncus broad, somewhat narrowed above base, top rounded, slightly emarginate in middle. Socius, a narrow short series of bristles. Gnathos strong, short, strongly curved, hook long. Transtilla knob clongate, median projection long, slender. Peniculus rather long, conical. Anellus flattened, corrugated. Vinculum strong, subrectangular, dilated below. Valva broadly semiovate. Aedoeagus with very oblique, excavate top and a long point (Slide No. 313 D).

Limen narrow, strong, broadly convex, lateral emarginations short, rounded, lateral projections short, triangular. Colliculum strong, moderately long, almost cylindrical. Cestum broad, tortuous, coiled once, with a median furrow, terminal fold short. Signum moderate (Slide No. 366 D).

Moss Forest Camp, 2800 m, October 10, 1939 (allotype); Top Camp, 2100 m, January 19, 1939 (holotype). Two specimens. Closely allied to the preceding species.

Chionoethremma mutans spec. nov. (figs. 60, 79)

♂, ♀ 23 mm. Head and palpus pale yellow, the latter with terminal segment and top of median segment suffused with brownish-black. Antenna blackish ringed with whitish. Thorax pale yellow anteriorly, whitish, tinged with pale ochreous posteriorly. Abdomen ochreous-whitish, in female suffused with ochreous laterally, with hind edges of segments paler; basal segments suffused with blackish in male, anal segment light ochreous above, brownish-ochreous beneath, corethrogynae large, dark grey. Legs yellowish-whitish in male, ochreous-whitish in female. Fore wing moderately broad in male, not dilated, costal fold broad, to $\frac{2}{5}$, costa oblique, little curved along fold, straight posteriorly, apex obtuse, termen slightly convex, little oblique; fore wing in female narrower, broadest before middle, costa abruptly shortly curved at base, little curved posteriorly, apex rounded, termen convex, vertical. Pale yellowish-white, in male brighter, tinged citric-yellow posteriorly, a minute citric-yellow marginal streak from end of costal fold to tornus, veins suffused with yellow posteriorly; in female yellow colouring very pale and indistinct. Cilia yellowish-white in male, white in female; with a faint antemedian line. Hind wing pale yellowish-white, paler than fore wing, faintly tinged ochreous in female. Cilia as in fore wing.

Tegumen clavate, broad, base moderate. Uncus moderate, top very broad, rounded, scarcely emarginate in middle. Socius a rather long series of bristles. Gnathos strong, with broad arms and a slender hook. Transtilla knob rather elongate, dentations large, median projection moderate, curved. Peniculus moderate, clavate. Vinculum rounded. Valva semi-circular. Aedoeagus with oblique orifice and a moderate, strong point (Slide No. 312 D holotype).

Limen membranous, broad, convex, lateral emarginations small shallow, rounded, lateral projections almost absent, lateral rods slightly dilated. Colliculum moderate, slightly narrowed below, split narrowed in middle. Cestum narrow, tortuous, terminal fold broad, short. Signum moderate (Slide No. 328 D, allotype).

Moss Forest Camp, 2800 m, October 10—November 5, 1938 (holotype). Lake Habbema, 3250—3300 m, August 27, 1938 (allotype). Two specimens. Allied to preceding.

Chionoethremma pallescens spec. nov. (fig. 75)

♀ 24 mm. Head and thorax white, tegula faintly suffused with yellowish. Palpus rather short, terminal segment short; pale yellowish-white, terminal segment tinged greyish. Abdomen whitish, tinged pink, corethrogynae bright yellowish-ochreous, large. Legs whitish-ochreous. Fore wing

elongate, broadest before middle, costa arched from base to apex, convex, apex rounded, termen gently convex, outwardly oblique above, rounded and slightly prominent beneath. Glossy-white. Hind wing glossy-white, thinner scaled than fore wing, very faintly tinged ochreous. Cilia snow-white.

Limen narrow, slightly convex, lateral emarginations moderate, oblique, rounded, lateral projections rather long, lateral rods dilated, sclerotized, broader above, with concave inner edge. Colliculum rather wide, moderately long ventrally, with a deep W-shaped incision. Cestum narrow, tortuous, terminal fold short, broad. Signum moderate, distinctly serrate (Slide No. 327 D).

Moss Forest Camp, five km northeast of Lake Habbema, 2900 m, August 22, 1938. One specimen. Allied to preceding, but distinct by white thorax and shorter palpi.

Chionothremma nivisperennis spec. nov. (figs. 61, 78)

♂ 22.5—26 mm, ♀ 25 mm. Head whitish, on upper half of face and on vertex suffused with yellow and reddish, between antennae with yellow. Palpus moderately long, pale yellow, terminal segment tinged darker under the scales. Thorax pale yellow anteriorly, mixed with ferruginous-crimson, white posteriorly (damaged). Abdomen in male blackish, anteriorly with white hind edge of segments, posteriorly whitish-ochreous mixed with blackish, anal segment snow-white; in female ochreous-whitish suffused with blackish anteriorly, sides ochreous, venter pale ochreous suffused with yellow, preanal segment black, corethrogynae small, dark brown. Legs rather deep yellowish-ochreous, tibiae and tarsi suffused with pale ferruginous-ochreous at the outer side. Fore wing rather broad, scarcely dilated, in male costal fold moderately broad to $\frac{2}{5}$, broadest beyond middle, costa obliquely curved along fold, straight posteriorly, apex rounded, termen straight, somewhat outwardly oblique, rounded beneath; in female costa gradually curved from base to beyond middle, straight posteriorly, termen vertical above, rounded beneath. Purely snow-white, dull; in male extreme base of wing suffused with ferruginous-pink; in female a minute suffused yellowish streak along apex and upper half of termen; costa narrowly edged with brownish-red from base to $\frac{1}{4}$; a suffused yellow streak along basal fifth of dorsum; a citric-yellow very narrow streak around apex and termen not reaching tornus, with minute dentations on veins. Cilia snow-white, glossy. Hind wing silvery-white, glossy, faintly suffused with pale ochreous towards base, on base of dorsum irregularly strewn with some blackish scales, less distinctly so in female. Cilia snow-white, faintly tinged with ochreous on tornus and dorsum.

Tegumen gradually dilated. Uncus with top rather deeply emarginate. Socius long, narrow. Gnathos strong, curved. Transtilla knob elongate, very oblique (strongly S-shaped), median projection moderate. Peniculus long, top flattened. Vinculum rounded. Valva semiovate, rather flattened.

Female genitalia of *Chionothremma* gen. nov. Fig. 75: *pallescens* spec. nov. Fig. 76: *soligena* spec. nov. Fig. 77: *auriflua* spec. nov. Fig. 78: *nivisperennis* spec. nov. Fig. 79: *mutans* spec. nov.

Aedoeagus with orifice strongly chitinated, oblique, point short (Slide No. 311 D, holotype).

Limen rather broad, gradually convex, lateral emarginations moderate, rounded, lateral projections short, lateral rods rather short, moderately dilated, inner edge rounded. Colliculum short, with a wide ventral split. Cestum broad, tortuous, terminal fold broad, with thickened edges. Signum rather small. Eighth tergite truncate (Slide No. 326 D, allotype).

Valley two km northeast of the crest of Wilhelmina Top, 3400 m, September 19, 1938; 3600 m, September 4, 1938; Hill north of Lake Habbema, 3850 m, August 24, 1938 (allotype, female). Hills at the foot of Wilhelmina Top, 3850 m, September 8, 1938 (holotype, male). Two males, two females. Allied to preceding, distinct by the reddish colouring of the thorax, the blackish base of the abdomen and the blackish scales on the dorsum of the hind wing. In one female (worn) the fore wing is faintly tinged ochreous, the terminal segment of the palpus is mixed with blackish.

Chionothremma auriflua spec. nov. (fig. 77)

♀ 28—29 mm. Head and palpus deep fulvous, terminal segment of palpus suffused with brown, antenna with scape dark fulvous, flagellum dark brown, dotted fulvous above. Thorax dark fulvous anteriorly, pale fulvous posteriorly. Abdomen ochreous-whitish, venter darker ochreous, corethrogynae extremely large, ochreous-fulvous, ovipositor lobes grey. Legs ochreous, suffused with dark fulvous. Fore wing with costa gradually considerably curved anteriorly, straight posteriorly, apex rounded, termen almost straight, vertical above, rounded beneath. Shining ochreous, narrowly suffused with pale fulvous along edge, especially towards termen; terminal edge and a suffusion on a short marginal scale tuft towards base of dorsum somewhat darker fulvous. Cilia pale golden-yellow, with a faintly darker antemedian line. Hind wing glossy ochreous-yellowish, paler towards base and dorsum, veins darker. Cilia concolorous, with a faint antemedian line.

Limen moderately broad, broader in middle, rather weak, gradually convex, lateral emarginations moderate, somewhat oblique, rounded, lateral projections rather long, strong. Colliculum strongly sclerotized, rounded, ventral split narrow. Cestum broad, tortuous, and with a coil above bursa. Signum strong. Eighth tergite with posterior edge membranous, forming a short collar around ovipositor. Anapophyses long (Slide No. 325 D, holotype).

Moss Forest Camp, 2800 m, October 9—November 5, 1938. Two females. Perhaps allied to preceding, but larger, with corethrogynae twice as large. One specimen (paratype) with fore wings, head and abdomen whitish-yellowish, palpi, thorax and tegulae orange anteriorly, fore wing with a narrow orange-yellow margin, hind wing yellow. Cilia in both fore and hind wing whitish (imperfect).

Chionothremma soligena spec. nov. (figs. 58, 76)

♂ 19.5 mm, ♀ 22 mm. Head, palpus and thorax bright ochreous, face below and base of palpus whitish-ochreous. Abdomen rather bright ochreous mixed with blackish at base and on venter, in male anal tuft shining pale ochreous mixed with blackish, in female pale ochreous with corethrogynae light ochreous-brownish with dark grey tips. Antenna with scape deep ochreous, flagellum blackish, white-ringed. Legs yellow, suffused with orange. Fore wing with costal fold broad, to $\frac{2}{5}$; costa slightly curved along fold, in male straight posteriorly, in female strongly curved anteriorly, straight posteriorly, apex rounded, termen vertical, straight above, rounded beneath. Male unicolorous ochreous-yellow, female deep ochreous; darker at base of wing, and in female very narrowly along terminal edge. Cilia pale golden-ochreous, shining, with a faint somewhat darker antemedian line. Hind wing in male pale golden-yellow, in female pale-ochreous, apex suffused with darker ochreous; with an orange-yellow antemedian line.

Tegmen clavate, moderately broad. Uncus rather slender, top ellipsoid, not indent. Socius ovate, small. Gnathos strong, arms broad, hook long, slender. Transtilla knob very oblique, elongate, median projection short, robust. Peniculus moderate, curved. Juxta rather flattened. Vinculum rounded, emarginate in middle. Valva irregularly semioval. Aedoeagus with a moderate point (Slide No. 310 D, holotype).

Limen narrow, gradually curved, convex, lateral emarginations rounded, shallow, lateral projections short, triangularly dilated above. Colliculum moderate, cylindrical, apex slightly wider, base somewhat narrowed, ventral split wide. Cestum narrow, coiled in middle, terminal fold broad, short. Signum narrow, with a large capitulum. Eighth tergite rather long (Slide No. 324 D, allotype).

Lake Habbema, 3200–3300 m, August 7, 1939 (allotype). Hill north of Lake Habbema, 3800 m, August 24, 1939 (holotype). One male, one female.

Diphtheropyga gen. nov. (fig. 80)

διφθέρα = a leather sack, *πυγή* = rump

Head with long loose rather sparse little appressed hair scales, projecting between antennae and forming a loose tuft above face, latter short-scaled. Ocellus posterior. Proboscis developed. Antenna shortly ciliate in male (ciliations $\frac{1}{2}$), pubescent in female, scape moderate. Palpus rather long, porrect, sinuate, loosely scaled, moderately dilated posteriorly by appressed scales above, terminal segment moderate in male, rather long in female, obtuse, slightly drooping. Thorax without crest. Abdomen without anal tuft in male, only a short fringe on eighth ventrite, in female with a small ventral corethrogynae of slender, clavate scales, eighth tergite forming a vesicle-like collar around ovipositor. Fore wing broad, elongate-truncate, without costal fold. 1b furcate, 2 from slightly beyond middle

of lower edge of cell, 3 from angle, 4 curved at base and approximated to 5, which is parallel, 7 separate, to termen, 9 remote, 11 from before middle, cell narrow, curved posteriorly. Hind wing without cubital pecten, a long pencil of hairs on base of vein 1c, 2 from before $\frac{2}{3}$ of cell, 3 and 4 connate from angle, 5 approximated, 6 and 7 separate, somewhat approximated towards base.

Typus generis: *Diphtheropyga niphadea* spec. nov., male, female.

Fig. 80: *Diphtheropyga niphadea* gen. nov., spec. nov., head male (above), female (below), wing neuration female, and anal segments of the female abdomen with corethropyne, ventral aspect.

Closely allied to *Chionothremma* gen. nov., differing by the absence of the costal fold in male, the rougher head and the structure of the anal segment in female. Intermediate between *Zacorisca* and the former genus.

***Diphtheropyga niphadea* spec. nov. (figs. 62, 80, 83, 84)**

nipás = snow

♂ 24—26 mm, ♀ 26 mm. Head and thorax pale-yellow, latter whitish posteriorly, face below white, above in male rough, pale yellow mixed with black, in female head and thorax pale yellow tinged pale ochreous. Palpus in male: moderate, dilated posteriorly, pale yellow, median joint along anterior half mixed with black, terminal suffused with black; palpus in female longer, less dilated, pale yellow tinged pale ochreous, terminal segment suffused with dark grey posteriorly except at apex. Abdomen in male dark leaden-grey suffused with white posteriorly, seventh segment black, eighth dark glossy bronze-grey above, bright yellow beneath, abdomen in female silvery-white, seventh segment black above, white beneath, edged throughout with light yellow, corethropyne small, ventral, jet-black, ovipositor and vesicle of eighth tergite light brown. Legs dark grey mixed with silvery-white. Fore wing without costal fold, costa moderately

Genitalia of *Zacoriscini*. Fig. 81: *Chionothremma euxantha* spec. nov., ovipositor and ostium. Fig. 82: *idem*, ductus bursae and bursa copulatrix. Fig. 83: *Diphtheropyga niphadea* spec. nov. ovipositor and ostium. Fig. 84: *idem*, ductus bursae and bursa copulatrix. Fig. 85: *Isotenes mesonephela* spec. nov., ovipositor and ostium. Fig. 86: *idem*, ductus bursae and bursa copulatrix. Fig. 87: *idem*, corethrogynae scales. Fig. 88: *Isotenes melanotes* spec. nov. ovipositor and ostium. Fig. 89: *idem*, corethrogynae scales. Fig. 90: *idem*, ductus bursae and bursa copulatrix.

arched anteriorly, gently arched posteriorly, apex rounded, in male termen straight, slightly oblique, in female gently sinuate above, rounded beneath. Snowwhite, sometimes faintly suffused with dirty-greyish and scattered with a few black scales; costal edge in male suffused blackish to before $\frac{1}{4}$, a dark grey, moderately broad marginal suffusion along posterior fourth of costa, in apex, along termen and tornus, reaching to dorsum, sometimes only to middle of tornus, darkest on costa before apex; posterior half of terminal veins minutely striped with dark grey, on veins 9—6 these stripes reaching almost to cell, becoming shorter towards tornus; minute oblique dark grey costal marks on end of veins 11 and 12; in female grey, posterior markings paler and less distinct; base of wing with a pale-yellow suffusion shortly produced along base of dorsum. Cilia grey, with darker base and pale middle. Hind wing and cilia snow-white.

Male genitalia strongly sclerotized. Tegumen broad, rounded. Uncus broad, scarcely narrowed below top, which is tetragonal, bluntly emarginate in middle. Socius, a rather long series of weak bristles. Gnathos strong, arms considerably dilated posteriorly, hook strong, with rounded top. Transtilla knob rounded, median projection moderately long, curved. Peniculus large, subtriangular. Juxta broad. Vinculum broadly rounded, excavate in middle. Valva short, ovate, rather narrow. Aedoeagus almost rectangularly bent in middle, orifice oblique, point moderate. Cornuti long (Slide No. 362 D, holotype).

Limen broad, membranous, supported by a narrow chitinous rod slightly convex, lateral emarginations rather deep, rounded, lateral projections strong, rather short, abruptly narrowed above base, lateral rods moderately broad. Ostium wide. Colliculum short, annular, ventral split wide. Cestum strongly sclerotized, tortuous, rather short, strongly narrowed above, with a median furrow and a broad moderately long terminal fold. Signum short, with serrate edge. Eighth tergite strongly swollen, forming a rounded thick collar in which ovipositor can be entirely retracted. Corethrogynae scales small, slender, angularly bent in middle, base acute, top clavate, rounded (Slide No. 363 D, allotype).

Lake Habbema, 3250—3300 m, July 31—August 23, 1938 (holotype: August 6, 1938, allotype: August 8, 1938). Seven males, four females.

Isotenes MEYRICK, 1938 (fig. 91)

Isotenes MEYRICK, 1938, Trans. Ent. Soc. Lond., vol. 87, p. 507. DIAKONOFF, Zool. Meded. Mus. Leiden, vol. 21, p. 147, figs. 10 I—K, 1939. Treubia, vol. 19, p. 486, 1948.

Piliscophora DIAKONOFF, 1939, Zool. Meded. Mus. Leiden, vol. 21, p. 143—146, figs. 1 O—P, 3 G—H, 1939 (typus generis *grisea* DIAKONOFF, 1939 = *crobylota* MEYRICK, 1910).

Head rather smoothly covered with appressed scales of varying length, sometimes forming a very long, flattened tuft, projecting between antennae and curved downwards over face; face with short scales. Antenna in male

shortly ciliated, scape moderate, slightly thickened at base. Palpus rather long, especially in female, porrect, median segment somewhat sinuate, considerably dilated towards apex by long, projecting rough scales above and beneath, almost always with an oblique longitudinal lateral dark streak, terminal segment short and partly concealed in male, moderately long in female, subobtusate, slightly drooping. Proboscis short. Thorax smooth, in female with an indication of a small posterior crest. Patagium rounded, short. Legs smooth, hind tibia with long, appressed hairs. Abdomen with a moderate or large anal tuft in male, with a very large corethrogynae in female, fore wing elongate, with costal fold in male, narrowed towards base, vein 2 from middle, vein 3 from angle, 4 remote, more or less approximated to 5 at base, sometimes connate, 7 to termen;

Fig. 91: *Isotenes melanoclera* MEYRICK, female, wing neuration and head (above);
I. crobylota (MEYRICK), male, head (below).

discal cell long, narrow, curved posteriorly. Hind wing with vein 2 from beyond middle, 3—4 connate or rather remote, 4—5 almost connate or remote, mostly 3—5 remote, 6 and 7 closely approximated towards base seldom shortly stalked.

Tegumen moderately broad, dilated. Uncus narrower, with rounded top. Socius a series or a patch of fine sparse bristles at base of gnathos. Gnathos curved, strong with moderately broad arms, hook short, subacute. Transtilla at each side with a long, slender, somewhat curved strongly dentate projection, obliterate in middle, transtilla knob like one present in *Zarorisca* and *Chionoethremma*, is absent here. Peniculus clavate, bristled throughout and not only on top, as in both mentioned genera. Juxta concave, with posterior edge indent. Vinculum mostly indent below.

Valva elongate, with an ear-shaped, vertical fold in disc, cucullus small, elongate, with rounded top, sacculus angularly bent towards base. Aedoeagus pistol-shaped, top obliquely truncate, cornuti a sheaf of long spines. Corethrogynae very large, mostly dorso-lateral, sometimes ventro-lateral: two brushes of long scales. The scales vary in shape specifically, from long-linear, to rather broad clavate. We regard the first type as the more specialised one. Ostium narrow, limen rectangularly bent. Colliculum small. Cestum mostly narrow, tortuous or coiled, terminal fold often very broad, variably built and forming a good specific characteristic. Ductus bursae rather short, bursa mostly large, erect-ovoid, signum slender, long, curved, mostly serrate. Ovipositor small.

Closely allied to *Chionoethremma*, distinct by roughly scaled fore wing, often ciliated costa, rough palpus, modest colouring and dorsal corethrogynae. *Piliscophora* DIAKONOFF, erected on account of the presence of a large frontal tuft, must be sunk as a synonym, as the scaling of the head is rather variable throughout the genus and is not sufficient for the separation of this species under a new generic name. The distribution is Papuan, except for a number of stragglers (see above, p. 37). The species are considerably varying and not easy of discrimination. The genitalia in the two sexes and the shape of the corethrogynae-scales in the female render good characteristics for their separation.

Key to the Papuan species of *Isotenes*

Males

1. Vertex with a large flattened tuft, projecting over face. *crobylota* MEYRICK
Not thus. 2
2. Fore wing with a complete straight blackish transverse fascia
. *melancalymma* spec. nov.
Fore wing with transverse fascia not thus 3
3. Fore wing with transverse fascia not strongly dilated below middle, almost or entirely interrupted above middle. *pudens* spec. nov.
Fore wing with transverse fascia strongly dilated below middle 4
4. Fore wing with transverse fascia deep ferruginous, suffused, formed by an erect-triangular costal spot and an oblique streak below middle of wing.
. *mesonephela* spec. nov.
Fore wing with transverse fascia not thus 5
5. Fore wing with an erect-triangular ferruginous spot on $\frac{2}{5}$ of costa, merging in ferruginous suffusion on middle third of dorsum which reaches halfway across wing. *rhodosphen* spec. nov.
Fore wing with markings fuscous-grey and blackish, without ferruginous; no spot on $\frac{2}{5}$ of costa *marmorata* spec. nov.

Females

1. Fore wing with basal half or basal third suffused with dark fuscous-grey or dark grey, only centre of base sometimes lighter 2
Fore wing sometimes with a broad triangular suffused central fascia, but with base never darkly suffused 3
2. Very large species: 40 mm (female) *megalea* spec. nov.
Species of moderate size: 26–28 mm (female) *mesonephela* spec. nov.

3. Fore wing with a conspicuous complete triangular transverse band . . . 4
Not thus. 5
4. Corethrogyne light ochreous, ventrally with blackish spot.
. *melanotes* spec. nov.
Corethrogyne black *melancalymma* spec. nov.
5. Fore wing with a conspicuous black transverse blotch on costa before middle
. 6
Not thus. 7
6. Fore wing with no other markings except an isolated antemedian black costal
blotch; margins of wing not suffused darker. *melanoclera* MEYRICK
Fore wing also with black dots along anterior fourth of costa, three rounded
spots in a triangle at about $\frac{3}{4}$, and a preapical dot; margins of wing suffused
darker *melanopa* spec. nov.
7. Fore wing with a conspicuous fulvous-fuscous or dark fuscous-grey central
fascia *sematophora* spec. nov.
Fore wing with central fascia little darker than other markings or altogether
ill-defined 8
8. Corethrogyne dark grey 9
Corethrogyne light ochreous 10
9. Fore wing with costal patch triangular, somewhat obliquely-erect, curved,
preterminal streak vertical, from dorsum before tornus. *prosantes* spec. nov.
Fore wing with costal patch triangular, tolerably equilateral, curved, pretermi-
nal streak oblique, from termen above tornus.
. *mesonephela modesta* var. nov.
10. Fore wing white, markings rather dark, fuscous-blackish
. *marmorata* spec. nov.
Fore wing ochreous-whitish, markings lighter fuscous-greyish 11
11. Fore wing, costal patch formed by three separate fuscous dots
. *erasa* spec. nov.
Fore wing, costal patch, a continuous elongate triangle. *pudens* spec. nov.

***Isotenes megalea* spec. nov. (figs. 99, 100, 101)**

μεγαλῆτος = mighty

♀ 40 mm. Head with face white, mixed with dark grey, edged with greyish-black, vertex greyish-black. Palpus rather long, basal segment roughly scaled, white, median segment slightly sinuate, broadly dilated towards apex by long scales, greyish-black, base white below, upper edge and apex laterally mixed with white, terminal segment white. Antenna greyish-black, scape white anteriorly, flagellum spotted with white. Thorax greyish-black, mixed with white, patagium narrowly edged with white. Abdomen whitish-ochreous, brighter towards apex, eorethrogyne ochreous anteriorly, posteriorly blackish-brown, with long lateral tufts of ochreous hairs. Legs whitish-ochreous, tibia and tarsus, especially anterior, banded with black. Fore wing with costa shortly ciliated throughout, with small tufts: beyond base and in middle; considerably curved anteriorly, straight posteriorly; apex obtuse-pointed; termen slightly concave above, rounded beneath, hardly oblique. A semicircular rather large greyish-black spot at $\frac{2}{5}$ of costa, connected by a somewhat lighter dark grey transverse suffused median band with dorsum before tornus, basal half of wing before this band greyish-blackish, suffused with dull leaden-grey

which colour is finely and regularly retinate with greyish-black, dorsum with suffused whitish-grey dots; posterior half of wing beyond median band whitish, finely retinate with grey and scattered with large blackish dots, markings greyish-black; costal patch indicated by two suffused subtriangular spots with white centre, at $\frac{3}{5}$ and $\frac{4}{5}$ of costa, posterior spot almost connected by an oblique suffused streak with upper angle of cell, indicating posterior edge of costal patch; an oblique narrow slightly curved suffused fascia from end of the latter streak to termen above tornus, slightly dilated below; apex edged by a minute blackish line from a small streak on costa before apex to a cloudy subapical patch before termen; ends of veins on termen streaked with dark grey. Cilia whitish-greyish, with a dark grey antemedian line. Hind wing and cilia whitish, apex dotted with greyish.

Limen projecting, two rounded lobes, a deep incision in middle, lateral projections moderately long. Colliculum minute, narrow. Cestum reduced, very narrow, lower extremity irregularly dentate, terminal fold broad, dilated posteriorly. Signum narrow, long, curved, hardly serrate. Corethrogynae scales fine, long, linear (Slide No. 384 D).

Moss Forest Camp, 2800 m, October 9–November 5, 1938. One specimen. Very distinct by its extraordinarily large size.

***Isotenes melanotes* spec. nov. (figs. 88, 89, 90)**

μελανότης = blackish

♀ 29 mm. Head and thorax irrorated with greyish-fuscous. Palpus white, median segment with a fuscous lateral streak along anterior half, irrorated with greyish-fuscous throughout on posterior half, terminal segment infuscated, tip white. Antenna fuscous, flagellum faintly ringed with whitish, suffused with ochreous-whitish towards base, scape greyish-fuscous above. Abdomen pale ochreous-whitish, corethrogynae perianal (encircling ovipositor), pale ochreous, with a blackish ventral spot. Legs white, anterior leg densely infuscated. Fore wing elongate-truncate, slightly gradually dilated, costa gradually curved anteriorly, straight posteriorly, apex rounded, termen straight above, rounded beneath, little oblique. White, irrorated and suffused with dark fuscous-grey, markings dark fuscous-grey and blackish. Costa with a suffused oblique transverse strigula beyond base, reaching to fold, and a moderate subquadrate spot at $\frac{1}{6}$, light fuscous-greyish; transverse fascia formed by a suffused elongate-rectangular spot on $\frac{1}{3}$ of costa, continued by a broad dark fuscous-blackish suffusion so as to form a large triangle with base occupying posterior $\frac{4}{5}$ of dorsum, not reaching tornus; edges of this triangle indistinct, anterior edge straight, inwardly oblique, posterior edge somewhat concave in middle, strongly outwardly oblique, formed by a broad blackish suffusion; an erect-triangular vertical pointed mark of little suffused, retinate ground colour on middle of dorsum, reaching halfway across wing; costal patch at $\frac{2}{3}$, formed by three subquadrate dark fuscous-

grey spots, edged with black below, lower spot slightly oblique, continued by a faint light fuscous-greyish curved fascia with tornus; parallel to this fascia run about three irregular, ill-defined oblique series of fuscous and blackish dots posteriorly; two rounded dark fuscous-grey dots on costa before apex. Cilia white, costal and apical cilia with broad dark fuscous-grey blotches, terminal cilia with a median row of fuscous points. Hind wing whitish, faintly dotted with grey before apex, apical edge slightly suffused with greyish, cilia white, an oblique suffused median mark opposite apex.

Limen rectangular, in middle membraneous, dilated, projecting below. Colliculum moderate, dilated below. Cestum narrow, moderately long, with one torsion, end slightly rounded, terminal plate rounded-triangular, moderately broad. Signum slender, curved, serrate. Corethrogynae scales linear, moderately narrow, base truncate, top gradually narrowed, with a projection (Slide No. 386 D).

Lake Habbema, 3250—3300 m, end July—end August, 1938. One specimen.

Isotenes pudens spec. nov. (figs. 92, 120, 121, 122)

♂ 18—19 mm. Head white, vertex fuscous-fulvous, collar fuscous, middle of face slightly suffused with fuscous. Palpus white, median segment towards base and apex mixed with white, dorsal fringe white, terminal segment slightly mixed with white. Thorax (damaged) light greyish-fuscous mixed with fulvous, tegulae white posteriorly. Abdomen greyish-whitish, a dark grey spot in middle above, anal tuft pale ochreous. Legs white, anterior dark grey above, light-ringed. Fore wing elongate-subovate, much narrowed towards base; costal fold to $\frac{2}{5}$, rather broad, ciliated, broadest in middle; costa gradually considerably curved anteriorly, scarcely so posteriorly, apex subacute, termen slightly concave above, little rounded beneath, moderately oblique. White, slightly irrorated with dark fuscous, markings blackish-fuscous and fuscous-grey, along costal edge tinged fulvous. A suffused light fuscous streak along basal half of costal fold, an outwardly angulate blackish streak below this from just above fold to before $\frac{1}{5}$ of dorsum; central fascia conspicuous, blackish-fuscous, slightly suffused with grey on costa, from $\frac{2}{5}$ of costa to $\frac{2}{3}$ of dorsum, rather broad on costa, abruptly constricted, excavate posteriorly above middle of disc, lower part somewhat narrower, slightly suffused posteriorly, connected by a fuscous suffusion along dorsum with basal mark and almost with tornus; costal patch narrow, elongate-triangular, extending along costa from before $\frac{3}{5}$ to shortly before apex, greyish, edge dotted with fuscous-brown, three dark brownish-fuscous dots along costa, subterminal area with indistinct transverse rows of dark grey interneural dots: two oblique rows, running from tornus to below top of costal patch, and from middle of termen to middle of its posterior edge, respectively; third row vertical, from middle of termen to costa before apex; a dark fuscous

point on lower angle of cell. Cilia white, an antemedian row of suffused fuscous spots, which are mixed with blackish and fulvous. Hind wing and cilia whitish, faintly touched with greyish, more so towards apex.

Tegumen rather short. Uncus with a very broad triangular base, gradually narrowed towards middle, top broadly rounded. Socius: a row of numerous bristles. Gnathos moderate. Transtilla knob elongate-triangular, median projection long, sinuate, dentate towards base. Peniculus small, little projecting (Slide No. 419 D, holotype).

♀ 21 mm. Head white, vertex slightly infuscated. Thorax evenly tawny-fuscous. Abdomen greyish-whitish, corethrogynic dorso-lateral, moderate, pale-ochreous. Fore wing elongate, rather broad, costa gradually curved anteriorly, straight posteriorly, ciliate, a small projecting white tuft of cilia before middle; apex little rounded, termen almost straight above, rounded beneath, moderately oblique. Whitish, rather densely irrorated and slightly suffused with fuscous-greyish, markings grey and dark fuscous, partially strewn with bright reddish-fulvous scales. A broad grey patch along base of costa, strigulated with dark fuscous, anteriorly connected by a suffused blackish streak with $\frac{1}{4}$ of dorsum; central fascia paler, slightly narrower than in male, anterior edge with a slight projection below constriction, dorsal suffusion indistinct; costal patch grey, marbled with reddish-fulvous, with four fulvous bars on costal cilia; posterior fourth of wing suffused with light grey; a narrow, slightly curved vertical streak from termen to above middle of disc, with a branch from its slightly dilated top running to $\frac{2}{3}$ of termen, and a narrow line obliquely before apex: reddish-fulvous. Cilia white, with an antemedian row of pale greyish-fulvous dots. Hind wing pale greyish-fuscous, cilia whitish, a faint darker subbasal line.

Limen moderately dilated, bent at the sides, with minute lateral projections. Colliculum with a wide split. Cestum long, narrow, little tortuous, gradually dilated posteriorly, terminal fold large, ovate, lower extremity with two deep emarginations. Signum long-dentate, capitulum long (Slide No. 464 D, allotype).

Top Camp, 2100 m, January 25, 1939, January 27, 1939 (holotype). Moss Forest Camp, 2800 m, October 9—November 5, 1939 (allotype). Two males, one female. Little allied to other species mentioned in this paper, but closely related to *Isotenes inae* DIAKONOFF, from Java.

Isotenes spec.

Letter Box Camp, 3600 m, September 3, 1939. One ♀. Closely allied to preceding, but obviously distinct. Unfortunately the specimen is in poor condition, with the abdomen missing, and must better remain undescribed.

Isotenes mesonephela spec. nov. (figs. 85, 86, 87, 93)

μέσος = middle, νεφέλη = a cloud

♂ 21 mm. Head and thorax mouse-grey, face whitish with grey spots, thorax with four transversely elongate black spots. Palpus white, mixed

Genitalia of Tortricinae. Fig. 92: *Isotenes pudens* spec. nov., male. Fig. 93: *I. mesonephela* spec. nov., male. Fig. 94: *I. melancalymma* spec. nov., male. Fig. 95: *Leptochroptila daratua* DIAKONOFF, female, ovipositor and ostium. Fig. 96: *idem*, ductus bursae and bursa copulatrix. Fig. 97: *Anisotenes cacotechna* spec. nov. female, ovipositor and ostium. Fig. 98: *idem*, upper half of bursa. Fig. 99: *Isotenes megalea* spec. nov., female, ovipositor and ostium. Fig. 100: *idem*, bursa copulatrix. Fig. 101: *idem*, corethrogynae hairs. Fig. 102: *I. marmorata* spec. nov., male.

with light grey on posterior half, a small dark fuscous mark at middle of median segment above. Antenna dark fuscous, ringed with white, scape dark grey above, white beneath. Abdomen whitish, anal tuft brightly shining. Legs white, anterior femur long-fringed below, anterior tibia and tarsus dark fuscous above, the latter white-ringed. Fore wing elongate, narrowed towards base, costal fold moderately broad, reaching to middle of costa, inner edge convex along one fourth of its length, concave in middle, slightly curved and ciliated along posterior half. Costa gently curved along fold, straight posteriorly, apex obtuse, termen almost straight, faintly concave above. White, suffused with grey, and marked with grey, black, and ferruginous. Costa with a minute black transverse line beyond base, and two more distinct lines, suffused with brownish, at $\frac{1}{5}$; a rounded ferruginous-brown dot in disc below those lines; transverse fascia formed by a deep ferruginous triangular patch at $\frac{2}{5}$ of costa, not reaching to middle of disc, with two minute marks of ground colour on costal edge; connected below with two diverging deep ferruginous fasciae, which enclose a triangle of dark grey coarse irroration, resting on middle third of dorsum; anterior ferruginous fascia above mentioned suffused, ill-defined, not reaching dorsum, posterior fascia darker, sharply edged, very narrow above, abruptly dilated by an angular anterior projection below middle of disc; a series of cloudy blackish dots along dorsum, decreasing in size anteriorly; apical third of wing suffused with light leaden-grey; four cloudy dark grey dots along posterior two-fifths of costa, slightly decreasing in size towards apex, a somewhat oblique ferruginous dot below and between first two costal dots; a black point on lower angle of cell; a curved series of interneural black points running below costa to before apex, thence before and along upper half of termen; another short row of points tolerably parallel to the first row from lower fourth of termen reaching halfway towards cell; a cloudy, fuscous-grey suffusion in tornus. Cilia greyish-whitish, with a strong grey antemedian line. Hind wing white, towards apex faintly dotted with greyish. Cilia white, with a faint basal shade.

Uncus with erect-ovate top. Socius, a few scattered bristles. Gnathos long, hook rather long. Transtilla projection slender, long, dentate throughout, dentations decrease towards apex, basal part strong, curved. Peniculus densely bristled throughout, elongate-semiovate. Vinculum rounded, shortly indent. Valva rather flattened, discal fold short, cucullus rounded, sacculus with short, obtusely bent base. Aedoeagus rather short, slender (Slide No. 374 D, holotype).

♀ 26—28 mm. Head, antenna and thorax dark grey, face edged with white above, scape of antenna white beneath. Palpus dark grey mixed with white, basal third white. Abdomen pale greyish-ochreous, venter whitish-ochreous, corethrogyne dark ochreous-grey. Legs white, anterior femur with a long fringe of white hairs, anterior tibia and tarsus fuscous, white-ringed. Fore wing elongate, little dilated, costa gradually curved

anteriorly, apex rounded, termen scarcely sinuate above, rounded beneath. Rather dark grey. Basal half of wing dark fuscous-grey, indistinctly transversely strigulated with blackish; costa somewhat paler, with two quadrate fuscous-grey dots: beyond base and at $\frac{1}{6}$, elsewhere with suffused transverse dark grey strigulae; middle of disc at base of wing suffusedly whitish; apical third of wing light mouse-grey, with irregular oblique series of suffused black dots and some four subtriangular costal dark grey dots, decreasing in size posteriorly; basal and apical areas separated by an ovate transverse whitish blotch from costa beyond middle to dorsum before tornus, suffused with grey on lower third, sometimes preceded by broad dark grey suffusion, followed by a rather dark grey outwardly convex transverse fascia from below $\frac{3}{5}$ of costa to tornus; this fascia is serrate, dilated below, beginning by an oblique rectangular dark brown dot; a faint curved moderate streak from termen above tornus parallel to transverse fascia. Cilia whitish, with a broad antemedian grey line. Hind wing white, towards apex faintly spotted with greyish, cilia white.

Limen almost straight, only faintly excavated towards ostium, slightly convex in middle, submembranous. Collieulum elongate, narrowed below. Cestum narrow, moderately long, its extremity with a truncate projection in middle, emarginate at each side, terminal plate moderately broad, triangular. Signum slender, curved, short-serrate. Corethrogynae scales narrowly lanceolate, long, top slightly dilated, with a projection, base slightly dilated (Slide No. 373 D, allotype).

Moss Forest Camp, 2600—2800 m, October 9—November 5, 1938 (allotype). Five km northeast of Lake Habbema, 2800 m, October 16, 1939 (holotype). One male, four females. Nearest to *I. miserana* group, but much larger.

***Isotenes mesonephela modesta* var. nov.**

♀ 25—27 mm. Head and body as in typical form. Fore wing somewhat broader, ochreous-whitish, not suffused with dark grey, densely irrorated and retinate with fuscous-greyish. Basal area with two ill-defined oblique streaks, reaching to fold; central fascia ill-defined, moderately broad, oblique, from $\frac{2}{5}$ of costa to dorsum before tornus, edges somewhat darker below middle, anterior angulate, posterior indistinct; costal patch and costal dots before apex as in typical form; a black point on lower angle of cell, followed by a smaller one; preterminal black dots in two curved oblique series. Hind wing as in typical form.

Iebèlè Camp, 2250 m, November—December, 1938. Moss Forest Camp, 2600—2800 m, October 9—November 5, 1938 (holotype). Five km northeast of Lake Habbema, 2800 m, October 30, 1938. Five specimens. Very similar to *I. erasa* spec. nov., but with a slightly broader fore wing, and a blackish corethrogynae. The genitalia and the shape of the scales of corethrogynae identical with those of the typical form (Slides No. 372 D, holotype, and No. 385 D).

Isotenes marmorata spec. nov. (figs. 102, 112, 113)

♂ 23 mm. Head whitish, suffused on vertex with fuscous, middle of vertex posteriorly darker, face white, upper part slightly clouded with grey. Palpus white, with a suffused fuscous median spot at the side above, fringe somewhat mixed with fuscous, terminal segment suffused with fuscous above. Antenna light fuscous, narrowly ringed with white, scape dark fuscous above, white beneath. Thorax greyish-fuscous. Abdomen whitish-ochreous, somewhat brighter posteriorly, anal tuft shining. Legs whitish, anterior tarsus and tibia infuscated except tips of joints. Fore wing elongate-truncate, broadest in middle, costal fold to before middle, moderately broad, edge gently eurved throughout; costa little curved but oblique along basal third, rounded and somewhat prominent there, slightly concave posteriorly, apex obtusely pointed, termen gently curved, little oblique. Whitish, marbled and finely retinate with fuscous-greyish, markings fuscous-blackish; an invert-trapezoid small patch on costa at $\frac{1}{6}$, preceded and followed by minute transverse strigulae; obliquely beneath this patch a semicircular black line on upper half of disc, open below, preceded by one vertical interrupted black line, and a small dark suffusion on lower $\frac{2}{3}$ of wing, followed by numerous interrupted outwardly curved blackish strigulae, occupying middle half of disc; an ovate-triangular, oblique patch on costa before middle, suffused with dark grey above except in middle, below sharply edged by a blackish line; a narrow line originating from top of this patch, running obliquely to fold somewhat beyond middle of wing, outwardly angulate there, not reaching dorsum, connected just below middle of disc on anterior side with a moderate subquadrate somewhat suffused fuscous-blackish patch; costal patch triangular, somewhat suffused with greyish, anteriorly edged by a blackish line; posterior edge of costal patch formed by a dark fuscous dot on costa, followed by two less distinct dots before angle, a blackish dot on lower angle of cell, continued by a row of smaller points, curved above, vertical beneath, to tornus; a transverse subterminal row of quadrate interneural dots, angulate in middle anteriorly, one more dot above top of this angulation; posterior third of wing very faintly suffused with greyish. Cilia ochreous-whitish, with a faint, partly interrupted antemedian line, forming more distinct bars opposite veins. Hind wing white, faintly dotted with grey, especially below costa. Cilia white.

Tegumen considerably dilated. Uncus with ovate, much erect top. Socius, long series of bristles. Gnathos rather slender. Transtilla projection long, moderately broad, slightly sinuate, point acute; dentate except extreme point, basal part long, slender, oblique, hardly sinuate. Peniculus rounded. Vineulum elongate-ovate, considerably indent. Valva with cucullus elongate-ovate, base of sacculus rather long, obtusely angulate. Aedoeagus with long basal part (Slides No. 378 D, holotype, 379 D, paratype).

♀ 25—28 mm. Head white, suffused on vertex and in middle of face with light fuscous-greyish. Palpus white, median segment with a longitudinal brownish streak near base above, and a longitudinal blackish streak towards apex below, scales towards apex above mixed with brown, terminal segment with base blackish above. Antenna white, scape mixed with dark fuscous above except towards apex, flagellum ringed with dark fuscous. Thorax whitish, suffused with light grey above and mixed with black, a transverse black band anteriorly, collar and tegula white, patagium white mixed with brown. Abdomen greyish-whitish, venter white; anal tuft, a very large brush of long light ochreous hair-scales. Legs white, touched with yellowish, anterior tibia and tarsus blackish-fuscous, white-ringed. Fore wing elongate-truncate, costa haired throughout, densely short-ciliated, gradually considerably curved anteriorly, apex rounded, slightly projecting, termen scarcely sinuate, little oblique. White, retinate with light fuscous-grey, and marked with black and dark fuscous. A row of small dots and transverse marks along costa throughout: deep fuscous; an ill-defined narrow transverse blackish streak from costa beyond base, reaching obliquely to fold, a rather narrow transverse fascia from $\frac{1}{6}$ of costa to $\frac{2}{5}$ of dorsum, indicated by irregular narrow blackish strigulae which are interrupted above and below middle; central fascia from $\frac{1}{3}$ of costa to $\frac{3}{4}$ of dorsum, somewhat outwardly convex above, slightly dilated beneath, inner edge angulated anteriorly at $\frac{3}{5}$, outer edge angulated at $\frac{3}{4}$, these edges formed by two narrow interrupted black strigulae connected with each other below middle by some narrow horizontal marks and lines; costal patch moderate, triangular, formed by two subquadrate, dark fuscous dots on costa before and beyond $\frac{3}{5}$, and a larger, elongate-rectangular slightly oblique bright coffee-brown spot below those; a subquadrate dark fuscous dot on costa before apex; preterminal area with series of round black dots: two vertical series before termen below apex, two smaller series obliquely below costa before apex; three dots in an outwardly oblique series, before middle of termen, and some seven dots in an outwardly convex series, from middle of disc below costal patch to tornus; some five suffused triangular black dots along middle third of dorsum. Cilia white, barred with fulvous-fuscous along costa, dotted with dark fuscous along their middle, viz., in apex and along termen. Hind wing white, touched with pale ochreous towards apex, faintly dotted with greyish along apical fourth, cilia white, touched with pale ochreous towards base.

Limem rather broad, submembranous in middle, upper edge convex, lower twice emarginated, angles somewhat truncate. Colliculum rather broad, short. Cestum strong, moderately long, (in one specimen reduced to a short lower part) narrow, with a median furrow, coiled once; end of cestum truncate, with a small, strong, finely denticulate knob at one side terminal plate very broad, subcircular. Signum rather broad, curved, serrate (Slides No. 369 D, paratype; No. 370 D, allotype).

Sigi Camp, 1500 m, February 20, 1938. Mist Camp, 1800 m, January 8,

11 and 17, 1939. January 8, 1939 (holotype). Moss Forest Camp, 2800 m, October 9—November 5, 1938 (allotype). Scree Valley Camp, 3800 m, September 22, 1938. Five males, two females.

Isotenes prosantes spec. nov. (figs. 103, 104, 105)

προσάντης = difficult

♀ 27 mm. Head and thorax ochreous-whitish, vertex mixed with pale fuscous. Palpus white, with a lateral longitudinal brownish streak along basal $\frac{2}{3}$ above, median segment with fringe mixed with brownish towards apex above and beneath, terminal suffused with dark fuscous above and beneath. Antenna fuscous, scape beneath and flagellum towards base whitish. Abdomen whitish, corethrogynae dark grey. Legs ochreous-whitish, anterior tibia and tarsus infuscated, light-banded. Fore wing elongate-truncate, costa abruptly curved at base, gently sinuate posteriorly, apex rounded, termen hardly convex above, rounded beneath, little oblique. White, marbled and irrorated with dark grey; basal third of wing hardly irrorated, except for two light grey dots, alternating with fine strigulae along costa, and some grey suffusion along dorsum; transverse fascia rather narrow, from beyond $\frac{1}{3}$ of costa to beyond middle of dorsum, rather ill-defined, dark grey, narrowly edged with blackish, slightly dilated below, with considerably serrate edges, wing beyond this fascia slightly suffused with grey, costa from beyond middle to before apex with four moderate transverse fuscous marks, alternating with small strigulae; an ill-defined suffused inwardly oblique transverse erect-rhomboidal fulvous spot below and between first two costal marks, almost connected with tornus by an indistinct oblique greyish fascia, becoming darker below; a row of small blackish dots from below third costal mark to tornus, angulated outwardly in middle; a row of less numerous larger black dots from below fourth mark, gradually curved before apex and upper $\frac{2}{3}$ of termen. Cilia white, with an antemedian row of transverse light fuscous streaks. Hind wing light ochreous-greyish, suffused with darker fuscous-greyish and faintly marbled with grey on posterior half. Cilia pale fuscous-greyish with a grey antemedian line.

Limen straight, with minute lateral projections, in middle membraneous. Colliculum slightly narrowed below top. Cestum strong, long, coiled and furrowed, end tridentate, terminal fold with triangular top. Signum strong, little curved, dagger-like. Corethrogynae scales lanceolate-clavate, top with a curved projection (Slide No. 377 D).

Araucaria Camp, 800 m, February 18, 1939. One specimen. Intermediate between *marmorata* and *erasa*, distinct by little marked basal third of fore wing and grey hind wing.

Isotenes erasa spec. nov. (figs. 106, 107, 108)

♀ 26.5—29 mm. Head whitish, touched with pale ochreous, suffused with light greyish-fuscous except on face. Palpus white, basal segment

Female genitalia of *Isotenes* MEYRICK. Fig. 103: *prosantes* spec. nov., ostium and ovipositor. Fig. 104: *idem*, corethrogynae-scales. Fig. 105: *idem*, ductus bursae and bursa copulatrix. Fig. 106: *erasa* spec. nov., ovipositor and ostium. Fig. 107: *idem*, corethrogynae-scales. Fig. 108: *idem*, ductus bursae and bursa copulatrix. Fig. 109: *melanopa* spec. nov., ovipositor and ostium. Fig. 110: *idem*, ductus bursae and bursa copulatrix. Fig. 111: *idem*, corethrogynae-scales.

pale ochreous, median segment with a short narrow brown longitudinal strigula in middle above, beyond middle slightly irrorated with grey, viz., laterally and below, fringe white, terminal segment with a small partly concealed blackish basal dot above. Antenna dark fuscous, ringed with ochreous, scape whitish, suffused with greyish-fuscous above. Thorax ochreous-whitish, slightly suffused with pale greyish anteriorly, mesothorax grey, edged with whitish. Abdomen pale ochreous, corethrogynae light ochreous. Legs pale ochreous, anterior tibia and tarsus dark fuscous, except tops of tarsal segments. Fore wing elongate-truncate, little dilated, costa strongly curved at base, almost straight posteriorly, obtuse, termen hardly sinuate above, rounded beneath, little oblique. Whitish, more or less tinged ochreous, marbled and retinate with light ochreous, markings fuscous. Two parallel narrow strongly oblique strigulae: from costa beyond base and from $\frac{1}{6}$ of costa to about middle of disc, respectively, a small dot on costa at $\frac{1}{4}$; transverse fascia rather narrow, beginning with a subquadrate dot on costa at $\frac{1}{3}$, to $\frac{3}{5}$ of dorsum, ill-defined edged by narrow interrupted fuscous lines, both outer and inner edge angulate anteriorly at $\frac{3}{5}$; costal patch somewhat beyond $\frac{2}{3}$, formed by three distinct fuscous quadrate dots arranged in a triangle, lower one slightly elongate, somewhat oblique, connected by a faint light fuscous fascia with tornus; two smaller fuscous dots on costa before apex; two series of blackish points tolerably parallel, curved, oblique, running from second, and from third costal dot to termen above tornus, and to termen below apex, respectively; dorsum with a row of fuscous dots or somewhat suffused with fuscous towards base. Cilia whitish, with a rather broad interrupted fuscous median line. Hind wing whitish, posterior half marbled with greyish, cilia whitish with a greyish-fuscous antemedian line.

Limen dilated, membranous in middle, lower edge semicircular, angles short, truncate, emarginations shallow. Colliculum moderately long, narrowed in middle. Cestum rather short, little coiled, end rounded in middle, little excavate at the sides, terminal fold small, narrow, elongate. Signum slender, curved, long-dentate. Corethrogynae scales broad, clavate, top rounded, with a short projection, base slightly dilated (Slide No. 381 D, holotype).

Moss Forest Camp, 2800 m, October 9—November 5, 1938 (holotype). Two specimens. West Central New Guinea, Wissel Lakes, October 1, 1939 (J. K. VAN EECCHOUD). One specimen. Closely allied to *marmorata*, distinct by light ochreous tinge, by fuscous instead of blackish markings, by slightly shorter angulation of transverse fascia in fore wing, and by genitalia.

***Isotenes rhodosphen* spec. nov. (fig. 111a)**

$\rho\sigma\delta\acute{o}\zeta$ = red, $\sigma\eta\eta\eta$ = a wedge

♂ 20 mm. Head white, vertex with a broad longitudinal light grey streak on each side of a moderate flattened tuft of scales. Palpus rather

short, white with a dark brown lateral spot, fringe mixed with brown scales, terminal segment except tip suffused with fuscous. Antenna fuscous, flagellum towards base finely ringed with white, scape white with a grey longitudinal streak above. Thorax white, roughish posteriorly, tinged pale fuscous-ferruginous along anterior edge and in middle. Legs white, anterior infuscated. Abdomen whitish, anal tuft pale ochreous. Fore wing elongate-truncate, abruptly narrowed towards base, not dilated posteriorly. White, irrorated with pale grey, less so in middle of disc, markings dark fuscous-grey and ferruginous. A small dot on costa beyond base and a moderate, oblique wedge-shaped transverse mark at $\frac{1}{6}$, reaching to

Fig. 111a: Male genitalia of *Isotenes rhodosphen* spec. nov.

fold: deep ferruginous; transverse fascia indicated by an erect triangular ill-defined light greyish suffused spot at costa before middle, edged anteriorly (less distinctly posteriorly) by oblique rows of black points; costal patch at $\frac{3}{4}$, formed by two slightly erect dark fuscous costal dots and one erect larger light ferruginous dot below and between those; one moderate and one small dark fuscous dot on costa before apex; an irregular ferruginous suffusion, spotted with dark fuscous and whitish, running from beyond base to $\frac{3}{5}$ of dorsum, hardly reaching to middle of disc, upper edge emarginate, posterior rounded; a small blackish dot in middle of disc beyond base, another less distinct dot on top of wedge-shaped streak, and a horizontal series of some black dots in middle of disc, last one on lower angle of cell; a moderate slightly outwardly oblique transverse dark grey blotch in tornus, somewhat clavate above, not reaching halfway across wing, a curved short blackish streak from lower third of termen, reaching obliquely halfway towards cell; a cloudy preterminal black dot below apex; terminal edge suffused with fuscous-greyish. Cilia white, costal and apical

barred with fuscous, terminal with an interrupted pale greyish antemedian shade. Hind wing white, faintly suffused and dotted with ochreous-greyish towards apex and costa, cilia white with a faint greyish antemedian line.

Genitalia very similar to those of *marmorata*, except shape of transtilla: median projection slender, longer than in that species, its stalk shorter (shorter than the projection itself), much smaller, narrowed in middle (Slide No. 387 D, holotype).

Mist Camp, 1800 m, January 11, 1939. One specimen. Allied to *marmorata*, and also to *crobylota*.

***Isotenes crobylota* (MEYRICK, 1910) (fig. 91)**

Harmologa crobylota MEYRICK, Proc. Linn. Soc. N.S. Wales, vol. 35, pp. 270—271.

Piliscophora grisea DIAKONOFF, Zool. Meded. Mus. Leiden, vol. 21, p. 146, genus: p. 144, figs. 1, 0 (neur. and head), 3 G—H (genit.).

Isotenes crobylota, DIAKONOFF, Treubia, vol. 18, p. 33, 1941; *ibidem*, vol. hors série, p. 41, 1944.

Distribution: Netherlands West New Guinea: Fakfak; Northeast New Guinea, Hunsteinspitze, 1350 m. Central West New Guinea: Wissel Lakes, Lake Paniai, 1750 m.

Araucaria Camp, 800 m, March 22, 23, 1939. Two males. Vertex with a large flattened tuft projecting over face.

***Isotenes sematophora* spec. nov. (figs. 114, 115, 116)**

σεματόφορος = wearing a sign

♀ 29 mm. Head and thorax white, suffused with light fuscous, and mixed with a few reddish scales. Palpus white, median segment at the side with a suffused broad median patch, terminal segment suffused with light fuscous laterally. Antenna rather dark fuscous, scape white, suffused with light fuscous above. Abdomen white, tinged pale ochreous, eorethrogynae whitish-ochreous. Legs white, anterior knee and anterior tarsus suffused with dark fuscous, the latter also ringed with white. Fore wing broad, elongate-truncate, not dilated, costa abruptly strongly arched at base, gradually slightly curved throughout, ciliated, with a short tuft in middle, apex subrectangular, termen straight above, rounded beneath, little oblique. White, irregularly rather sparsely irrorated with dark fuscous and fulvous; a small cloudy blackish spot on costa beyond base, and a somewhat denser irroration below this, extending along base of wing; a narrow dark fuscous suffused and ill-defined strigula from $\frac{1}{5}$ of costa, running obliquely to middle of disc at $\frac{1}{4}$, thence to $\frac{2}{5}$ of dorsum, inwardly angulate in fold, with three small suffused fuscous-fulvous dots: one at each extremity, and one in middle; a broad, outwardly oblique straight fulvous transverse fascia from $\frac{2}{5}$ of costa to $\frac{2}{3}$ of dorsum, lighter towards dorsum, somewhat darker edged above, slightly gradually dilated below; its anterior edge indent in middle, its posterior edge irregularly sinuate and suffused along lower half; posterior $\frac{2}{5}$ of wing irrorated and

Female genitalia of *Isotenes* MEYRICK. Fig. 112: *marmorata* spec. nov., ovipositor and ostium. Fig. 113: *idem*, ductus bursae and bursa copulatrix. Fig. 114: *semutophora* spec. nov., ovipositor and ostium. Fig. 115: *idem*, corethrogynae scales. Fig. 116: *idem*, ductus bursae and bursa copulatrix. Fig. 117: *melancalymma* spec. nov., ovipositor and ostium. Fig. 118: *idem*, corethrogynae scales. Fig. 119: *idem*, ductus bursae and bursa copulatrix. Fig. 120: *pudens* spec. nov., ovipositor and ostium. Fig. 121: *idem*, ductus bursae and part of bursa copulatrix. Fig. 122: *idem*, corethrogynae scales.

suffused with fuscous-greyish, anterior edge of this area distinct, running from beyond middle of costa to slightly above middle of disc at $\frac{2}{5}$, thence to lower $\frac{1}{4}$ of posterior edge of transverse fascia, marked with a pair of small longitudinal blackish streaks above, with two similar obliquely transverse streaks in middle; about four short longitudinal suffused blackish streaks just below costa from beyond middle to before apex, continued by a vertical subterminal slightly curved series of about five blackish dots between veins, reaching above tornus. Cilia white, with an ill-defined fulvous antemedian line, costal cilia white. Hind wing white, apical fourth faintly spotted with greyish, cilia white, along apical fourth with a faint greyish median line.

Limen broadly dilated in middle, projecting, upper and lower edge truncate, lower edge with shallow excavations towards angles which are short, truncate. Colliculum moderate, narrowed below. Cestum moderately broad, with one torsion, and a moderate furrow, end twice excavate, terminal fold small, triangular. Bursa copulatrix small. Signum slender, gently curved, dentate on inner side. Corethrogynae scales large, strongly clavate, top rounded, terminal projection minute (Slides No. 371 D, paratype, No. 382, holotype).

Iebèlè Camp, 2250 m, September 21, 1938 (holotype). Moss Forest Camp, five km northeast of Lake Habbema, 2800 m, October 25, 1938 (paratype). Two females. Paratype tinged fuscous instead of fuscous and fulvous, transverse fascia complete, with a small spot of ground colour just above middle, and an indentation of posterior edge below this spot reaching to $\frac{3}{4}$ of dorsum, slightly dilated below, rather dark fuscous, touched with lilac, edges sharp, darker. Intermediate between *erasa* and *melanocalymma*.

Isotenes melanopa spec. nov. (figs. 109, 110, 111)

μέλας = black, *ὄψ* = eye

♀ 30 mm. Head white, vertex suffused with light grey. Antenna white, grey above. Palpus white mixed with a few blackish scales, median segment with a narrow blackish-brownish suffused streak along basal half of upper edge, from its end an oblique transverse blackish band to lower apical tuft, terminal segment suffused with blackish-brownish above. Thorax white, suffused with grey except along edge. Abdomen whitish, corethrogynae black. Legs white, anterior tibia and tarsus above dark fuscous, ringed with white. Fore wing elongate-ovate, costa strongly gradually curved anteriorly, little curved posteriorly, apex subobtusely, termen little rounded above, more so below. White, finely irrorated with dark grey, markings black and dark brown. Basal patch indicated by faint grey suffusion, edged by a minute line at about $\frac{1}{4}$, angulate just above fold, upper part outwardly oblique, on costa with a blackish transverse mark; a pair of such marks close together on costa beyond base, followed by a few blackish dots; a large black outwardly oblique patch with slightly

suffused edges, at about $\frac{2}{5}$ of costa, reaching beyond middle of upper edge of cell, connected by an oblique row of faint grey and blackish minute irregular strigulae with $\frac{2}{3}$ of dorsum; costal patch formed by two rather irregular rounded dots: upper dot on costa beyond middle, dark grey edged with black, lower dot below and slightly beyond preceding, dark brown, marked with black above, and a third small black dot at $\frac{3}{4}$ of costa; a smaller blackish dot on costa before apex; terminal fourth slightly suffused with grey, with moderate round black inter-neural dots, arranged in undulating rows; costa and especially dorsum denser irrorated with dark grey and blackish, dorsum also transversely strigulated with dark grey. Cilia white, with an interrupted suffused dark grey antemedian band. Hind wing rather dark fuscous-grey, darker towards apex, becoming whitish towards base. Cilia fuscous-greyish, whitish towards tornus.

Limen straight, dilated, little sclerotized, with a split in middle, rectangularly projecting below, angles broadly rounded. Colliculum long, slightly narrowed below. Cestum very strong, short, coiled, with a broad median furrow, end strongly projecting, denticulate, deeply asymmetrically excavate at the sides, terminal fold broad, subtrapezoid, shortly edged. Signum robust, little curved, short-serrate. Corethrogynae scales somewhat varying in size, clavate, top lanceolate, with a long projection (Slide No. 383 D).

Araucaria Camp, 800 m, March 18, 1939. One specimen. Closely allied to *I. melanoclera* MEYRICK 1938, distinct by more extended markings and by genitalia.

***Isotenes melancalymma* spec. nov. (figs. 94, 117, 118, 119)**

μέλας = black, *κάλυμμος* = veil

♂ 22 mm. Head creamy-white, face with an irregular black circle. Palpus rather short, slender, black, white on inner side, median segment with a white spot at base below, and a white lateral dot at apex, terminal segment short, with white tip. Antenna light fuscous, banded with white above. Thorax broad, white, patagium mixed with black laterally, tegula suffused with black posteriorly. Abdomen light greyish, venter white, anal tuft shining. Legs white, anterior black, femur white below, tibia and tarsus white-ringed, median tibia with two suffused connected blackish spots laterally. Fore wing elongate, dilated, costal fold rather narrow, to middle of costa, which is moderately curved, and oblique along fold, straight posteriorly, apex rounded, termen little rounded above, more rounded below, little oblique. Creamy-white, finely and densely irrorated with light brown and leaden-black. Basal patch leaden-black, its edge running from before $\frac{1}{4}$ of costa towards $\frac{1}{3}$ of dorsum, indistinct below fold, its middle third angularly projecting, and edged with jet-black; transverse fascia rather narrow, straight, oblique, from middle of costa to $\frac{3}{4}$ of dorsum leaden-black, narrowly edged with jet-black, a slender short streak of ground colour on costal edge; area between basal fold and transverse fascia

irrorated and suffused with leaden-blackish, with an indication of a narrow transverse black strigula parallel to transverse fascia; costal patch elongate-ovate, at about $\frac{3}{4}$, leaden-black, with two small semioval costal marks of ground colour, a cloudy irregular group of some black points before upper half of termen, and another one in tornus. Cilia creamy-white, with a median row of black dots. Hind wing rather dark fuscous-grey, suffused with dark grey towards apex, cilia light fuscous-greyish, with a narrow darker antemedian line.

Tegumen with a rounded projection at each side of top. Uncus rather broad, apical half circular. Socinus, a series of fine bristles. Gnathos curved, hook short. Transtilla projection slender, long, strongly dentate above except towards point. Peniculus rather long, clavate, with narrow base and round top. Vinculum erect, deeply emarginate below. Valva elongate, cucullus obtusely pointed. Sacculus with angularly bent, long base (Slide No. 376 D, holotype).

♀ 25 mm. Head white. Palpus white, median segment with a fuscous lateral longitudinal streak interrupted beyond middle, terminal segment suffused with fuscous above. Antenna with scape white suffused with fuscous above, flagellum fuscous, suffused with white. Thorax pale greyish, patagium and tegula white. Abdomen whitish, corethrogynae black. Legs ochreous-whitish, anterior tibia with fuscous spots, anterior tarsus dark fuscous, faintly white-ringed. Fore wing elongate-subovate, costa gradually curved to beyond middle, straight posteriorly, apex obtusely pointed, termen faintly sinuate above, rounded beneath, little oblique. White, touched with creamy, sparsely scattered with black scales. Costa with indistinct blackish-fuscous suffused transverse strigulae; transverse fascia formed by a moderate quadrate somewhat oblique dark fuscous-blackish spot at $\frac{2}{5}$ of costa, almost reaching across $\frac{1}{4}$ of wing, connected below with top of a large triangle of light greyish suffusion, with base occupying somewhat more than middle third of dorsum, its edges somewhat undulate, dark fuscous-grey, suffused; an ill-defined suffused undulate, dark fuscous-grey vertical median fascia, a moderate dark grey suffusion on dorsum before and beyond transverse fascia; costal patch reduced to three suffused ill-defined dots: from $\frac{3}{5}$ to before apex of costa, decreasing in size posteriorly; a few internodal black points in oblique series before termen, a small suffused transverse spot in tornus. Cilia white (damaged). Hind wing greyish-whitish, faintly suffused with pale ochreous towards apex, hardly marbled there with greyish. Cilia pale greyish, with a faint antemedian line.

Limbs with median third projecting, trapezoid, membranous, angles little rounded. Colliculum slender, split narrowed in middle, cestum rather short, narrow, coiled once, end broadly excavate, terminal fold semioval, strongly concave. Signum slender, sickle-shaped. Ovipositor lobe with obtusely pointed top. Corethrogynae scales large, clavate, base broad, with a median longitudinal ridge, top minutely scobinate, with a rather long projection (Slide 375 D, allotype).

Sigi Camp, 1500 m, February 15, 1939 (allotype), February 26, 1939 (holotype). Two specimens. Allied to *I. melanoclera* MEYRICK, but much smaller and with transverse fascia complete.

CACOECIINI

"Group A" MEYRICK (partim), in WYTSMAN, *Gener. Ins.*, vol. 149, p. 2 and 7, 1913.

Archipsidii PIERCE & METCALFE, *Genit. Brit. Tortr.*, p. 1, 1922.

Cacoecidii DIAKONOFF, *Zool. Meded. Mus. Leiden*, vol. 21, p. 151, 1939.

Cacoeciades DIAKONOFF, *Treubia* vol. 18, p. 31, 1941.

This tribe represents by far the greater part of the Tortricinae in the present collection and also apparently in the fauna of New Guinea. The following six genera belong to a natural group, and, being related with *Isotenes*, form a connection with the previous tribe. They are as a rule obscurely greyish-coloured species with a more or less ciliated costa in the fore wing, and often with veins 7 and 8 separate. Their resemblance to *Isotenes* is deceiving, but a thorough study of the facies, of the shape of the fore wing, and especially of the clear cut and large difference of the genitalia (of the two sexes) render characteristics for their separation from the Zacoriscini. The socius in *Leptochroptila* is of the zacoriscid type, but a corethrogyne is entirely absent. Upon that genus follows *Anisotenes* gen. nov., a relative of *Isotenes*, but without any traces of a corethrogyne, and with a distinctly developed, projecting and separated but small socius of the cacoeciid type, instead of a single row of bristles along the rim of the sclerotized ventral parts of the uncus (above the articulations of the gnathos), as in the Zacoriscini. In other, less specialised genera, like *Isochorista* and *Parachorista*, the socii are considerably developed and form moderate or large appendages, densely covered with fine bristles. *Thrincophora* stands rather apart from the other genera.

In our opinion the socius is an important part of the male genitalia, being with a few exceptions an indicator of the stage of development, not only in this tribe but throughout the subfamily Tortricinae. The socius acquires highest development in the relatives of *Peronea*, and shows a gradual reduction throughout the Cnephasiini towards the Cacoeciini to disappear altogether as a separate protuberance in the Zacoriscini.

The two genera following upon *Thrincophora*, viz., *Chresmarcha* MEYRICK and *Adoxophyes* MEYRICK, form a rather less apparent entity, superficially. They possess vein 3 in the fore wing originating from before angle, while veins 7 and 8 are mostly long-stalked. The socius is moderate, pending, the gnathos is strong; the cestum is absent. *Adoxophyes* shows the typical cacoetid colouring and markings, but *Chresmarcha* forms a striking exception: it is a perfect mimic, *inter alia*, of the Zacoriscine genus *Chionothremma*, and without doubt has diurnal life habits.

The third group comprises *Cacoecia* and *Homona* and their relatives, with veins 7 and 8 in the fore wing mostly stalked, while vein 3 originates from the angle. The uncus is narrow and strongly curved. The socius is

moderate or large, pending. The cestum is moderate or absent. In this group fit rather well the remaining genera of the tribe, except the rather separated group of *Choanographis*, and the allied genera (this group will be dealt with in the second part of this paper).

Leptochroptila DIAKONOFF, 1939

Leptochroptila DIAKONOFF 1939, Zool. Meded. Mus. Leiden, vol. 21, pp. 148–150, figs 3 N (head), 3 M (neur.), 3 I (gen. ♂).

This genus is an intermediate between the present tribe and the Zaco-riscini. Socinus not separated: a row of bristles above base of gnathos (cf. l.c. fig. 3 I). Dorsal coremata of seventh sternite in male (scopa dorsalis) extremely large, formed by dense broad scales which *in situ* (studied with a magnification of 6–10 times) appear as a shining smooth cap over the anal segment. Corethrogyne absent.

Leptochroptila daratua DIAKONOFF, 1939 (figs. 95, 96)

Leptochroptila daratua DIAKONOFF, 1939, Zool. Meded. Mus. Leiden, vol. 21, p. 150, figs 3 N (head), 3 M (neur.), 3 I (genit. ♂).

Distribution: North New Guinea, Hunsteinspitze, 1350 m.

♀ 22 mm, allotype. Palpus with median segment strongly triangularly expanded by roughly projecting long scales above. Fore wing elongate-subovate, rather broad, broadest in middle; costa strongly curved anteriorly, slightly curved posteriorly; apex little rounded, slightly projecting; termen slightly concave above; broadly rounded and projecting beneath. Costal half of basal patch densely suffused with dark ferruginous-grey, space between this and central fascia broader than in male, without a brownish transverse strigula, pale ochreous. Otherwise similar to male.

Limen narrow, in middle membranous. Ostium cup-shaped. Colliculum very short. Cestum reduced to a terminal rather weak part, terminal fold ill-defined. Signum moderate, curved, short-dentate (Slide No. 452 D).

Araucaria Camp, 800 m, March 21, 1939. One male, one female (allotype)

Anisotenes gen. nov. (fig. 123)

ἀνισός = unequal, *τένω* = to tighten

Head with loosely appressed dense scales. Antenna moderately ciliate in male, minutely pubescent in female. Ocellus posterior. Proboscis rather weak. Palpus moderate or moderately long, porrect or slightly sub-ascending, median segment mostly somewhat sinuate, strongly dilated posteriorly by roughly projecting scales above and beneath, often forming a small tuft towards apex beneath; sometimes rather slender, less sinuate, with appressed scales below, roughly scaled towards apex above, terminal segment short, subacute, sometimes almost concealed. Thorax with a more or less distinct double posterior crest. Fore wing elongate or sub-triangular, seldom with a costal fold in male, costa often ciliated throughout, or with small projecting patch of cilia in middle, sometimes smooth.

Cell rather narrow, long, slightly curved downward posteriorly, no parting vein, 2 from $\frac{1}{2}$, 3 from angle, 4 excurved towards base, remote from 3, often closely approximated or almost connate with 5, all terminal veins along posterior part tolerably parallel to vein 7, 7 and 8 separate, 7 to termen, 11 from before middle. Hind wing with cell mostly long, terminal veins often rather short, 2 from $\frac{2}{3}$, 3 from angle, 3—5 mostly separate and equidistant, closely approximated towards base, or 3 and 4 connate, 5 closely approximated, seldom 3 and 4 short-stalked; 6 and 7 closely

Fig. 123: *Anisotenes leucophthalma* gen. nov., spec. nov., female, wing venuration and head.

approximated towards base, seldom short-stalked, upper edge of cell often angularly bent towards base and approximated to 8.

Tegumen moderately broad. Uncus narrowed below middle, somewhat clavate, top rounded, slightly flattened, often faintly emarginate in middle. Socius small. Gnathos strong, curved, hook rather large. Valva moderate, flattened, moderately folded (less than in *Parachorista*), base of sacculus rather weak, short. Transtilla knob large, robust. Anellus strong, vinculum ovate, indent in middle. Aedocagus strong, little curved, sometimes with a terminal thorn. Cornuti, a sheaf of spines.

Limen narrow laterally, broad and membraneous in middle, this part more dilated medianly than laterally. Ostium large, funnel-shaped, lower rim indent. Colliculum very short, almost annular, often distinct only at the sides. Ductus bursae moderately long. Cestum long, often tortuous, in bursa moderately dilated and forming a terminal fold, edges of which are often partially rolled up; seldom cestum absent. Signum long, dagger-shaped, curved, short-dentate.

Typus generis: *Anisotenes leucophthalma* spec. nov., male, female.

The identification and the separation of the present genus gave us much trouble due to several reasons: the variability of the species; the actual, close relations with several genera named below; and the very deceiving superficial resemblance of *Anisotenes* with some quite distant genera. It was the more difficult to understand the true nature of this genus

because it forms a connection between the two tribes: the Zacoriscini and the Cacoeciini, as is already said above. Therefore it is necessary to submit this genus to a thorough discussion.

Anisotenes is closely allied to *Isotenes* MEYRICK 1938, and the resemblance of the facies of these two genera is very great. However, the former does not possess the typical characteristics of the tribe Zacoriscini; it is a true Cacoeciid. The differences between the two genera can be outlined as follows. The females often possess a similarly ciliated costa, and both fore and hind wing have a very similar shape and neurulation. (The neurulation in *Anisotenes* is rather variable as to the origin of veins 3—5 and 6—7 in hind wing.) The two genera can be separated at once by the entire absence of a corethrogynae in the last mentioned genus, where the anal abdominal segment is smoothly and evenly scaled, and only the eighth segment has a small thin marginal dorsal collar of scales, forming a modest anal tuft of the ordinary type, present in all the Tortricidae. The seventh ventrite is normally formed, and after maceration shows no traces of expansible plicate membranes, (so characteristic of all female members of the Zacoriscini) upon which the dense scaling of the corethrogynae is implanted.

The males of *Anisotenes* may be separated from those of *Isotenes* by a broader wing which is gradually narrowed towards the base, while the costal edge is mostly rather smooth. The fore wing of *Isotenes* is smaller and rather abruptly narrowed towards the base, which is a typical feature; the folded part of the costa is little curved but considerably oblique. The genitalia in *Anisotenes* possess a rather small but distinctly separated digitiform pending socius, which part in *Zacorisca* is reduced to a series of bristles above the articulations of the arms of the gnathos. The great importance of the development of the socius for the separation of subfamilies was already brought forward in the discussion of the present tribe. A single species of *Isotenes* (*mesonephela*) has a minute verrucose protuberance at the place where in other subfamilies a well-developed socius originates. Furthermore, in most species of *Isotenes* the costal patch in the fore wing is formed by two costal quadrate dots, mostly dark grey, and a third elongate-rectangular fuscous or fulvous spot obliquely below the costal dots, closer under the first of these. This characteristic is small but invariably present in all but one species (not distinct in *pudens*, of which we possess a single, somewhat damaged specimen). The costal patch in *Anisotenes* mostly is an equilateral triangle, and is often marked with three dots at its angles (as in *Isotenes*), but in *Anisotenes* the three dots are of equal shape, size and colour.

Structurally *Anisotenes* is almost congruent with *Harmologa* MEYRICK, 1883; therefore we hesitated for a long time, whether the following species from New Guinea belong to that genus or not. At present, however, we are satisfied that this resemblance is only superficial as the type of the neurulation in the type of the genus, *Harmologa oblongana* (WALKER), 1863, from New Zealand, is quite different: it possesses a broad cell which is

dilated posteriorly and has a distinct parting vein, while in *Anisotenes* the cell is narrow, curved posteriorly and shows no trace of a parting vein, while terminal veins 3—6 run towards the wing edge more upwards, and are all more parallel to the posterior portion of vein 7 than in *Harmologa*. Furthermore, the male genitalia of *H. oblongana* are also entirely different: a narrow, hooked uncus and a heavy complicated gnathos show a near relation with the *Cacoecia* type of the Cacoeciini.

The differences from *Parachorista* gen. nov., at last, which without doubt is the nearest relative of *Anisotenes* are: the much greater size of the species of the genus, the broader wing, and a different facies, the presence of a thoracic crest, and the distinctly different type of the male genitalia which are rather uniform throughout each of these genera.

In spite of the uniform colouring and the rather varying markings of the species we endeavour to give the following key.

Key to the species of *Anisotenes*

1. Fore wing whitish-fulvous, tinged with pink, often a ferruginous dot at $\frac{1}{5}$ of disc *pyrra* spec. nov.
Not thus coloured 2
2. Fore wing with a large deep blackish-fuscous spot along cell from base to middle of wing *amphiloga* spec. nov.
Not thus marked 3
3. Hind wing rather dark fuscous-greyish 4
Hind wing pale greyish-fuscous or whitish, more or less marbled or retinate with greyish 5
4. Fore wing with costal patch well-defined . . . *bathygrapha* spec. nov., male
Fore wing with costal patch connected with a greyish-fuscous suffusion along apex and termen *libidinosa* spec. nov.
5. Fore wing with all markings much suffused, with edges indefinite *fallax* spec. nov.
Fore wing with markings entirely or partially well-defined 6
6. Fore wing with ground colour whitish, retinate with fulvous, markings brownish-fuscous, suffused with fulvous *stemmaotostola* spec. nov.
Fore wing without fulvous 7
7. Fore wing with costal patch sharply edged, small, semiovate . . *decora* spec. nov.
Fore wing with costal patch either suffused or distinctly triangular . . . 8
8. Basal patch indicated by a blackish line, strongly acutely angulate in middle; costal patch conspicuous, greyish-black *schizolitha* spec. nov.
Not thus 9
9. Central fascia indicated on costa by a subquadrate darker spot, not or hardly connected with the lower part of central fascia 10
Central fascia indicated on costa by an oblique streak, at least to middle of wing 13
10. Costal patch well-defined, its edges neither suffused nor connected with other markings *phanerogonia* spec. nov.
Not thus 11
11. Costal patch little suffused, connected by an irregular narrow streak of dark suffusion with dorsum before tornus, bearing a small conspicuous white dot on cell *leucophthalma* spec. nov., female
Costal patch either strongly suffused and indefinite or connected with dorsum by a broad, wedge-shaped patch, without white dot on cell 12

12. Posterior two-thirds of fore wing strongly suffused and transversely strigulated with fuscous-grey, costal patch indefinite or not reaching below half of disc *spodotes* spec. nov.
Posterior part of wing less suffused, costal patch conspicuous, wedge-shaped, reaching from costa to dorsum before tornus *acrodasys* spec. nov.
13. Costal half of central fascia narrowed towards middle of disc or with parallel edges 14
Costal half of central fascia dilated towards middle of disc 16
14. Central fascia very narrow, not broader than edge of basal patch
 oxygrapha spec. nov.
Central fascia moderate, broader than that edge 15
15. Central fascia much paler than costal patch *cacotechna* spec. nov.
Central fascia not paler than costal patch *scoliographa* spec. nov.
16. A conspicuous blackish dentoid patch on dorsum beyond base and a second wedge-shaped patch before tornus. *dracontodonta* spec. nov.
Not thus. 17
17. Costal patch connected with dorsum before tornus by an undulate suffused blackish fascia, bearing a white dot on end of cell
 leucophthalma spec. nov., male
Not thus. 18
18. Central fascia broad, blackish-fuscous *bathygrapha* spec. nov., female
Central fascia narrow, greyish, irrorated with dark fuscous
 ellipsegrapha spec. nov.

Anisotenes *cacotechna* spec. nov. (figs. 97, 98)

κακότεχος = deceiving

♀ 21—23 mm. Head creamy-white, slightly mixed with fulvous. Palpi white, median segment suffused with dark greyish-fuscous laterally, except towards extremities, terminal segment with a few dark fuscous scales at base. Antenna whitish suffused and ringed with fuscous, scape fuscous. Thorax light fuscous mixed with creamy-white anteriorly, suffused with creamy-white posteriorly. Thorax greyish-ochreous, white towards base. Legs pale ochreous; anterior legs whitish, infuscated above, with tibia and tarsus pale-ringed. Fore wing oblong, little dilated, costa gradually curved anteriorly, straight posteriorly, roughly ciliated along median third, apex rounded-pointed, termen straight, moderately oblique. White, tinged with creamy, slightly suffused with pale brown, irrorated and marked with dark fuscous-grey. Basal patch moderate, transversely strigulated on base of costa and suffused along middle of posterior edge with dark fuscous-grey, edge strongly angulate and projecting, top of projection on fold; central fascia ill-defined, rather narrow, oblique on $\frac{1}{3}$ of costa, almost entirely obliterate below middle of disc, indicated on posterior third of dorsum by an elongate irroration below fold, with well-defined serrate oblique anterior edge; central fascia seldom distinct throughout, interrupted in middle of disc; costal patch well-defined, elongate-triangular, extending along costa from beyond middle to before apex, dark fuscous-grey, with four blackish dots along costa; two rows of black dots from costa before apex to tornus, tolerably parallel to termen; a small black dot beyond lower angle of cell; apex slightly suf-

fused with greyish; a faint light brown suffusion along upper half of disc posteriorly. Cilia white, tips infuscated around apex, a distinct antemedian row of dark greyish-fuscous dots. Hind wing whitish-greyish, along posterior half marbled with fuscous, cilia greyish-whitish with a fuscous antemedian line.

Limen indistinct in middle, broad laterally, with thickened lower edge which has a slight projection. Ostium large, cylindrical. Colliculum rather long, also cylindrical. Cestum reduced to a rounded hollow terminal plate with irregular edge. Signum moderately large, straight (Slide No. 437 D, holotype).

Moss Forest Camp, 2600—2800 m, October 9—November 5, 1938 (holotype). Five km northeast of Lake Habbema, 2800 m, October 15 and 24, 1938. Four females. Superficially very much resembling *Isotenes erasa* spec. nov., actually allied to the following species.

Anisotenes phanerogonia spec. nov. (figs. 133, 134)

φανηγός = distinct, *γωνία* = an angle

♀ 22—24 mm. Head white. Palpus white, median segment suffused with dark greyish-fuscous except towards apex above and on apex, terminal segment grey. Antenna whitish, ringed and suffused with light fuscous. Thorax fuscous-whitish, apical tuft edged with dark fuscous, patagium and tegula white, slightly mixed with light fuscous scales. Abdomen light greyish-ochreous. Legs whitish-ochreous, anterior white, infuscated above, tibia and tarsus light-ringed. Fore wing white, finely irrorated with grey, slightly suffused with pale grey and pale fuscous, markings blackish. Costa finely transversely strigulated and irrorated with dark grey; basal patch moderate, indicated by its edge, which is narrow, blackish, broader and suffused with black along lower part of patch; this edge strongly angulated just above middle of disc, with a small black streak anteriorly along fold, interrupted below this, a minute black patch on extreme base of costa, a longitudinal mark along base of vein 12, and a shorter one on extreme base of wing; central fascia indicated by a moderate quadrate-trapezoidal vertical patch on $\frac{1}{3}$ of costa reaching to upper edge of cell, and an oblique indefinite light grey suffusion in middle of disc below mentioned patch on costa, running obliquely to dorsum just before tornus, angularly dilated and reaching end of cell posteriorly, somewhat darker below; dorsum from edge of basal patch to $\frac{2}{3}$ with a dark grey suffusion which is transversely strigulated with black, and with a small elongate-ovate patch beyond this suffusion, followed by a smaller irregular black mark just before tornus; costal patch moderate, elongate-triangular, almost equilateral, indicated by three blackish dots along costa and by its broad edge elsewhere: anterior edge less distinct, irrorated with dark grey, posterior edge blackish, dilated on top of patch; two small dark grey dots on costa before apex; a subterminal little distinct row of blackish subquadrate interneural dots, inwardly angulate in middle,

termen suffused with grey. Cilia white, an antemedian row of dark greyish-fuscos dots, partially interconnected. Hind wing whitish tinged with fuscous, before apex marbled with fuscous; cilia greyish-whitish, an antemedian and an apical greyish shade.

Limen moderately broad at the sides, narrow in middle. Ostium short, funnel-shaped, colliculum distinct, annular, open ventrally. Cestum tortuous, terminal fold with a strongly plicate edge. Signum large, curved, moderately dentate (Slide No. 438 D, holotype).

Moss Forest Camp, 2600—2800 m, October 9—November 5, 1938 (holotype). Iebèlè Camp, 2250 m, November 28, 1938. Top Camp, 2100 m, January 25, 1939. Three females. Resembles very much *Isotenes marmorata*. Allied to preceding.

Anisotenes schizolitha spec. nov. (fig. 233)

$\sigma\chi\zeta\omega$ = to cleave, $\lambda\iota\theta\alpha\varsigma$ = stone

♂ 20 mm. Head white, slightly mixed on vertex with pinkish-fuscos. Palpus greyish-pink, median segment towards apex whitish. Thorax broad tegulae very small; white densely mixed with blackish, except along edge. Abdomen grey. Legs whitish, anterior tibia and tarsus infuscated, white-ringed. Fore wing elongate, rather broad, moderately dilated, costa with a strong fold to $\frac{1}{2}$, gradually curved along this, straight posteriorly, apex subobtus, termen sinuate, vertical above, obliquely rounded beneath. White, irrorated with dark fuscous, dark grey and blackish, markings leaden-black and dark fuscous-grey. A black dot on base of costa, followed by a pink suffusion, costal fold transversely strigulated with black; basal patch rather large, indicated by a blackish suffused line from about $\frac{1}{5}$ of costa to $\frac{1}{5}$ of dorsum, strongly angulate in middle, top reaching beyond $\frac{1}{4}$ of disc, dilated towards extremities; a short black longitudinal streak on base below costa; central fascia moderately broad, from a double blackish mark on costa before middle to dorsum just before tornus, almost obliterate below costa, gradually dilated below: much suffused with brownish-black, edges darker, a transversely oblique black streak on dorsum; costal patch elongate-triangular, from $\frac{3}{5}$ to before apex, conspicuously dark leaden-grey, marked with jet-black between veins and on top, with four subquadrate black dots along costa; top connected with base of central fascia by a vertical blackish-fuscos suffusion, with its posterior edge rather well-defined; a V-shaped patch before middle of termen, dark-grey mixed with black, posterior arm connected with terminal edge between veins 6 and 7; terminal area retinate with pale grey. Cilia white, an antemedian row of grey blotches, largest around apex. Hind wing whitish, posterior half suffused with pale golden-fuscos, marbled with pale grey, cilia greyish with pale basal line and a row of cloudy grey spots.

Tegumen erect, base narrow. Uncus broad, regularly erect-ovate, top slightly dilated, rounded. Socius moderate, pending. Gnathos with a long,

narrow hook. Transtilla knob strong, median projection dilated. Juxta strong. Aedoeagus moderate (Slide No. 405 D).

Mist Camp, 1800 m, January 17, 1939. One specimen.

Anisotenes dracontodonta spec. nov. (figs. 126, 131, 132)

δράκων = a drake, *ὀδούς* = a tooth

♂ 22—26 mm, ♀ 24—26 mm. Head white, in male mixed with brown scales. Palpus in male grey, median segment with basal half fulvous, a white spot towards apex above, terminal segment whitish mixed with fuscous-grey, palpus in female white, basal half above fulvous, apical half densely mixed with fulvous and dark fuscous scales except towards apex laterally, terminal segment mixed with dark fuscous above and beneath. Antenna fuscous-fulvous, ringed with white, more distinctly so in female, scape suffused with white. Thorax in male white, densely mixed and marbled with dark brown, thorax in female white. Abdomen whitish-grey, posteriorly suffused with dark grey, anal tuft in male grey and pale ochreous, in female pale ochreous, seventh ventrite blackish. Legs whitish suffused with golden-ochreous; anterior leg dark fuscous above, with tarsus white-ringed. Fore wing oblong, in male more dilated, with a moderate, ciliated costal fold to beyond $\frac{2}{5}$, gently curved and oblique along this, straight posteriorly, a small tuft of cilia before middle, apex subacute, slightly projecting, termen scarcely concave above, rather oblique, in female costa along anterior half roughly ciliated and considerably curved, posteriorly less roughly ciliated, straight; apex rounded, termen almost straight, less oblique than in male. Creamy-white, scattered with fine black and fuscous points, markings black, dark grey and suffusedly brown. Costal fold in male with a dark brownish-grey streak along basal two-thirds strigulated with black, mixed with white scales, an elongate dark brownish-grey patch before apex, white spot at apex with a small white costal tuft of cilia; in female basal half of costa with a small elongate transverse mark before $\frac{1}{6}$ and an elongate moderate dark grey patch at $\frac{2}{3}$, both continued obliquely across wing by ill-defined black and fuscous fine dotting; a large conspicuous black dentiform patch on $\frac{1}{5}$ of dorsum, top acute, slightly inwardly oblique, reaching $\frac{2}{3}$ across wing, almost continued with first costal spot by a narrow blackish line in male, greyish one in female, this patch less distinct along dorsum, in female with a rounded black dorsal dot anteriorly, posterior edge angularly excavate in middle; central fascia indicated in male by an oblique, interrupted black line, and rows of black dots from second costal patch, obliquely reaching to middle of disc towards dorsum before tornus; central fascia in female indicated by a curved narrow streak from similar patch to $\frac{3}{4}$ of dorsum, greyish, irrorated with dark points above, with an irregular series of black dots below; in both sexes a subquadrate transverse brownish-black blotch on $\frac{3}{4}$ of dorsum, slightly inwardly oblique, continued by an elongate-ovate patch of fulvous-brownish suffusion which is marked with irregular

black points, forming together a sharp edge to transverse vein; this suffusion reaching to stalk of veins 7 and 8, its top preceded by a rounded small patch of snow-white ground colour on end of cell; costal patch narrow, elongate triangular, extending along costa from middle to before apex, formed by four distinct dark fuscous-grey or blackish costal dots, (opposite each a dark bar on costal cilia), and a suffused black dot just above end of cell being the top of triangle, these marks more or less connected by dark grey suffusion and coarse jet-black points; anterior edge of costal patch attenuated by a row of jet-black points; transverse more or less regular rows of jet-black interneural points before termen, rising from tornus to vein 7, mostly interrupted in middle; preterminal area as far as vein 7 more or less suffused with dark grey, a blackish suffused line along that vein to lower angle of cell or along and before termen, or from angle of cell to above tornus; male with some black triangular dots along middle of dorsum. Cilia pale fuscous, tips whitish, basal half suffused with white, a subbasal dark grey band or a row of blackish dots. Hind wing whitish, marbled and transversely strigulated with greyish-fuscous posteriorly, cilia white with an apical shade and a broad interrupted subbasal fascia.

Uncus almost circular, broad. Socius moderate, oblong. Gnathos strong. Transtilla knob with a rather robust stalk, but much more slender than in *leucophthalma* spec. nov. Terminal thorn long (Slide No. 406 D, holotype).

Limen broad, membraneous, lower rim chitinated. Ostium short, subcylindrical. Colliculum small. Cestum tortuous, terminal fold moderate. Signum very long, rather narrow, curved (Slide No. 403 D, allotype).

Moss Forest Camp, 2600—2800 m, October 9—November 5, 1938 (allotype, female), and the same, five km northeast of Lake Habbema, 2800 m, October 1, 1938 (holotype, male), October 18 and 30, 1938. Letter Box Camp, 3600 m, September 5, 1938. Two males, eight females. Resembles very much an *Isotenes*. Allied to preceding species, distinct by dorsal dentiform patch. Female from Letter Box Camp much darker than other specimens.

Anisotenes leucophthalma spec. nov. (figs. 123, 128, 135)

λευκός = white, *ὄψ* = eye

♂ 22.5 mm, ♀ 27 mm. Head white, vertex in male densely mixed with greyish-fuscous, hardly so in female. Palpus dark grey or fuscous-grey, mixed with white, in male also with light fulvous, basal segment and top of terminal segment white. Antenna fuscous, ringed with white, scape in female blackish above. Thorax white, densely mixed with dark greyish-fuscous in male, less densely mixed with blackish-brown in female, patagium broadly edged with white, thoracic crest blackish. Abdomen pale grey in male, whitish-ochreous in female. Legs whitish, anterior darkly infuscated, tibia and tarsus light-ringed, median tibia with two fuscous bands above. Fore wing broad, in male subtriangular, with a

Genitalia of *Anisotenes* gen. nov. Fig. 124: *scoliographa* spec. nov., female, ostium. Fig. 125: *idem*, ductus bursae and bursa copulatrix. Fig. 126: *dracontodonta* spec. nov., male. Fig. 127: *stematostola* spec. nov., male. Fig. 128: *leucophthalma* spec. nov., male. Fig. 129: *bathygrapha* spec. nov., male. Fig. 130: *decora* spec. nov., male. Fig. 131: *dracontodonta* spec. nov., female, ovipositor and ostium. Fig. 132: *idem*, ductus bursae and bursa copulatrix. Fig. 133: *phanerogonia* spec. nov., ovipositor and ostium. Fig. 134: *idem*, ductus bursae and bursa copulatrix.

moderate costal fold to before middle, with edge ciliated, costa considerably curved anteriorly, with a small brush of cilia just before middle, short-ciliate along posterior half, in female costa strongly curved anteriorly, less curved posteriorly, ciliate throughout, a longer tuft of cilia before middle; apex little rounded, termen slightly sinuate, hardly oblique in male, more so in female. Creamy-whitish, densely scattered with dark grey and fuscous scales, suffused with fuscous and grey, markings fuscous-black. Costa dotted throughout with black. Basal patch moderate, suffused with fuscous, especially along costa, strigulated with black, margin strongly angulate on upper edge of cell, rather narrow, blackish, marked with a dentiform acute black patch above fold, and a rounded black patch on dorsum; central fascia indicated by a suffused fuscous-grey moderate subquadrate spot on costa before $\frac{1}{3}$, in male irregular, blackish, marked with a white costal dot, and by a cloudy large patch of rather bright fuscous suffusion from below this, obliquely to posterior $\frac{2}{5}$ of dorsum, occupying centre of disc to above and beyond cell, irrorated and transversely strigulated with blackish, especially along anterior edge which is tolerably straight, oblique, running vertical below fold; an elongate-rectangular black patch on $\frac{2}{5}$ of dorsum, a blackish-fuscous suffusion from before this to basal patch along dorsum, above not reaching fold; costal patch ill-defined, represented by four dark greyish-fuscous costal dots from middle to before apex, followed by a smaller dot before apex, and a cloudy blackish spot above upper angle of cell, connected with dorsum before tornus by a dark fuscous-blackish transverse suffusion, above tornus in male with a black angulate line posteriorly, in female broader, less distinct; a small, distinct white spot on end of cell, round in male, erect-ovate in female; terminal fourth of wing suffused with mouse-grey, not mixed with fuscous, with two transverse irregular interrupted series of jet-black points: from termen above tornus and from termen above middle, running somewhat obliquely to below costa; apex somewhat darker grey. Cilia white, apical third dark grey, an antemedian row of blackish dots. Hind wing glossy-whitish, distinctly dotted with dull fuscous-grey along posterior half.

Uncus with top gradually rounded. Socius small, broader than in *A. bathygrapha* spec. nov. and *A. stenmatostola* spec. nov. Gnathos with a long hook. Transtilla knob with a robust stalk (Slide No. 442 D, holotype).

Limen narrow. Ostium shallow, ventral edge triangularly incised. Colliculum fitting in this incision, tubular. Cestum tortuous. Bursa copulatrix missing in allotype (Slide No. 433 D, allotype).

Lake Habbema, 3250—3300 m, August 5, 1938 (holotype, male), August 6, 1938, August 18, 1938 (allotype, female), September, 1938. One male, three females. Little allied to preceding, distinct by white discal dot; related with the five following species. Reminds of a *Thrincochroa*.

Anisotenes bathygrapha spec. nov. (figs. 129, 136, 137)*βαθύς* = rich, *γράφω* = to draw

♂ 20—22 mm. Head white, vertex mixed with greyish-fuscous. Palpus dark fuscous-grey, base, median segment towards apex above and terminal segment whitish mixed with dark fuscous-grey. Thorax whitish, shoulder and apex more or less suffused with dark fuscous-grey. Antenna dark fuscous, ringed and suffused with white along basal half. Abdomen pale greyish-ochreous, venter grey. Legs grey, anterior and median darker grey, tarsi pale-ringed. Fore wing broad, triangularly dilated, costal fold extremely narrow, to $\frac{1}{4}$, costa gradually considerably curved anteriorly, less posteriorly, apex subacute, faintly falcate, termen slightly sinuate, little oblique. White, partially suffused and finely irrorated with grey and fuscous, and very faintly suffused with ochreous, markings dark blackish-fuscous. Basal patch moderate, with a narrow dark fuscous streak along base of costa, and a fuscous suffusion on base of wing; edge of basal patch narrow, blackish-fuscous, concave above, strongly angulate on upper margin of cell, with a blackish, inwardly oblique dentiform mark extending from fold to angulation, with top acute or suffused, obliterate below fold; central fascia from $\frac{1}{3}$ of costa to posterior half of dorsum, its anterior edge straight throughout; upper half of this edge formed by a blackish-fuscous well-defined oblique blotch, suffused with whitish in middle below costa, with anterior edge straight, posterior edge concave; lower half of this blotch represented by a light fuscous-grey suffusion, with anterior edge horizontal to end of cell, thence vertical, slightly convex, to dorsum before tornus; sometimes central fascia suffused with dark greyish-fuscous throughout; costal patch elongate-triangular, rather dark grey, sometimes dark fuscous-grey, marked along costa from middle almost to apex with three small, and two larger dark greyish-fuscous triangular dots, and a suffused grey dot; top of costal patch with a blackish spot, well-defined below, suffused above, posterior edge of spot along vein 8; a small inwardly oblique transverse mark on lower angle of cell, sometimes narrowly connected along discoidal vein with costal patch; a faint yellowish-ochreous suffusion along upper and posterior edge of cell, sometimes absent; terminal fourth of wing suffused with mouse-grey, sometimes with dark greyish-fuscous, especially along veins; a darker grey suffusion along terminal edge above, and a transverse group of black dots before middle of termen. Cilia whitish, dark grey opposite apex of wing, apical third dark grey, an antemedian row of irregular dots. Hind wing pale greyish-fuscous, paler towards tornus, posterior half with darker edge and slightly marbled with fuscous.

Uncus with top slightly indent. Socius small. Gnathos with a moderate hook. Transtilla knob with a slender stalk. Valva short (Slide No. 444 D, holotype).

♀ 26 mm. Fore wing narrower than in male, markings paler and much suffused, costal patch almost entirely obliterate.

Limen moderately broad, in middle indent. Ostium shallow, cylindrical. Colliculum moderate, oblique: one side broader than the other. Cestum tortuous, terminal fold long, plicate. Signum moderately long (Slide No. 445 D, allotype).

Scree Valley Camp, 3800 m, October 4, 1938 (holotype, male), October 14, 1938 (allotype, female). Lake Habbema, 3250—3500 m, August 18, 1938. Two males, one female. Distinct by broad wings and well-defined dark markings. Allied to *A. leucophthalma*.

Anisotenes libidinosa spec. nov.

♂ 20 mm. Head dark grey (damaged), face somewhat paler. Palpus dark fuscous-grey, fringe of median segment towards apex above lighter (antennae missing). Thorax light whitish-grey, a broad median band and tegula except along edge dark grey. (Abdomen missing.) Legs ochreous-fuscous, anterior blackish-fuscous. Fore wing rather broad, subovate, little dilated, with a very narrow costal fold to $\frac{1}{4}$, dilated in middle by cilia. Costa gradually considerably curved anteriorly, straight posteriorly, apex subacute, termen slightly concave above, moderately oblique. Light whitish-grey, irrorated with fuscous, markings rather suffused dark greyish-fuscous. Costal fold dark greyish-fuscous. Basal patch indicated by a small, slightly inwardly oblique dark brown transverse streak, running from fold to upper margin of cell before $\frac{1}{4}$ of disc, and by a dark brown dot between top of this streak and middle of costal fold; dark markings dotted with blackish; central fascia moderately broad, straight, from $\frac{1}{3}$ of costa to $\frac{4}{5}$ of dorsum, dark fuscous suffused with brown, downward gradually becoming lighter and more suffused; anterior edge of central fascia with a small projection below costa, posterior edge ill-defined along lower half; costal patch triangular, suffused with dark greyish-fuscous; posterior edge of patch confluent with a greyish-fuscous suffusion occupying entire apical $\frac{2}{5}$ of wing, its anterior edge running along end of cell to lower fourth of central fascia; a small brownish-ochreous dot on lower angle of cell; tornus and termen transversely strigulated with blackish-grey, former more distinctly, also scattered with brownish-ochreous scales. Cilia light grey, whitish en costa before apex, dark grey opposite apex; an interrupted blackish antemedian line. Hind wing pale greyish-brownish, suffused with fuscous towards apex, cilia whitish-greyish, a grey antemedian fascia.

Scree Valley Camp, 3800 m, September 15, 1938. One specimen. Closely allied to preceding, very distinct by strongly suffused markings in fore wing, therefore described, in spite of the abdomen being missing.

Anisotenes stemmatostola spec. nov. (figs. 127, 138, 139)

στέμμα = a wreath, στολή = a dress

♂ 23 mm, ♀ 26 mm. Head and thorax whitish, in male densely mixed and suffused with dark grey, especially on shoulder, in female suffused

with light brownish-fuscous. Palpus in female pale fulvous, median segment suffused with dark grey in middle and towards apex below, terminal segment slightly suffused with fuscous above, tip whitish. Abdomen pale whitish-ochreous, base white. Legs whitish, anterior and median tibia and tarsus slightly infuscated, light-ringed. Fore wing in male with a very narrow costal fold to $\frac{1}{3}$, which can be entirely unfolded (present in left wing, absent in right), costa considerably curved anteriorly, almost straight posteriorly, apex subacute, rather rounded above; in female costa gradually curved anteriorly, straight posteriorly, apex almost rectangular, termen scarcely sinuate, little oblique. Whitish, in male slightly irrorated with greyish, in female irregularly retinate with light brownish, markings rather light brown, edged with blackish-brown, darker in male. Basal patch rather large, slightly suffused with greyish or brownish, along costa transversely strigulated with darker, edge strongly angulate on upper margin of cell, narrow, concave above; edge of lower portion of basal patch formed by an inwardly oblique dentiform dark brown patch with acute top touching upper fourth of central fascia; below fold the latter patch obliterate in male, less distinct in female; central fascia moderate, from $\frac{1}{3}$ (in male) or from $\frac{2}{5}$ (in female) of costa towards tornus, upper half well-defined, with edges sinuate in male, in female anterior edge convex, posterior concave, with a slight projection on upper edge of cell; this central fascia dark brown in male, rather light brown edged with blackish brown in female; lower half much dilated and suffused in male, obliterate in female, except for a suffused brown vertical patch in tornus, densely dotted with blackish brown; costal patch elongate-subovate, from costa before middle to before apex, edge somewhat undulate; dark grey in male, brown in female, in both dotted with blackish-brown; a large triangular patch along termen, suffused with light grey in male, in female sharply edged, dark brown, narrowly connected below middle with the suffused patch in tornus; in female terminal edge blackish-brown, dorsum and fold dotted with blackish-brown; in male an oblique dark brown dot on end of cell. Cilia whitish, apical third suffused with greyish or brownish, an antemedian row of dark brown dots. Hind wing whitish, tinged with pale brownish, transversely strigulated and slightly suffused with fuscous. Cilia whitish, an apical and an interrupted antemedian grey fascia.

Uncus with top slightly indent. Socius small, longer than in *bathygrapha* spec. nov. Gnathos with hook moderate. Transtilla knob with a stalk narrowed in middle (Slide No. 446 D, holotype).

Limen and ostium much like those in *bathygrapha*, limen in middle less indent. Cestum tortuous, terminal fold rather small. Signum long, curved (Slide No. 447 D, allotype).

Top Camp, 2100 m, January 25, 1939 (holotype, male). Moss Forest Camp, 2600—2800 m, October 9—November 5, 1938 (allotype, female). Moss Forest Camp five km northeast of Lake Habbema, 2800 m, October

20, 1938. One male, two females. Distinct by brownish and fulvous retination and by presence of terminal patch. Allied to preceding.

Anisotenes decora spec. nov. (figs. 130, 140, 141)

♂ 22 mm, ♀ 23 mm. Head in male pale whitish-fuscous, in female white, vertex dark fuscous. Palpus in male suffused with grey, in female greyish, in both sexes mixed with fulvous and white scales. Antenna light fuscous, finely ringed with brown. Thorax whitish, densely suffused with fuscous, tinged with grey except on tegulae. Abdomen whitish, slightly suffused with fuscous towards apex above. Legs whitish, anterior and median infuscated above, tarsi pale-ringed. Fore wing oblong, costa in male with a very small costal fold to beyond base, costa slightly curled along basal half, moderately gradually curved throughout; in female costa stronger curved anteriorly, almost straight posteriorly; apex in two sexes subacute, termen slightly sinuate, little oblique. White, markings pale brownish-fuscous and brownish-blackish. Basal patch rather large, in male slightly infuscated, edge brownish-blackish, narrow, suffused anteriorly, upper half slightly undulate, very outwardly oblique to upper edge of cell before $\frac{1}{4}$ of wing length, thence slightly inwardly oblique to fold, much inwardly oblique below this, in middle abruptly dilated over $\frac{1}{4}$; in male costa along basal patch suffused with greyish-fuscous; central fascia indicated by a conspicuous, somewhat curved, outwardly oblique moderate streak from $\frac{1}{3}$ of costa to above middle of disc; this streak greyish-fuscous, sharply edged and suffused below with brownish-black, and connected with dorsum by a light greyish-fuscous suffusion, transversely strigulated with darker fuscous; this suffusion reaching along dorsum almost from edge of basal patch to tornus, its anterior edge almost vertical, slightly concave; its posterior edge tolerably horizontal to middle of vein 3, thence vertical to tornus, slightly outwardly convex and suffused with brownish-blackish; sometimes dorsal suffusion ill-defined; costal patch along fourth fifth of costa, elongate-ovate, narrow, greyish-fuscous, edged with brownish-black points, followed along costa by two fuscous-greyish dots; an erect-triangular moderate almost vertical blackish mark with top on termen above tornus, furcate above, reaching to vein 6; a small triangular brownish-black dot before termen below apex; termen slightly suffused with greyish, a brownish-black narrow terminal line along upper $\frac{2}{3}$, a minute transverse dark line before apex. Cilia white, barred with fuscous-fulvous, especially below apex, an interrupted blackish antemedian line, base white. Hind wing whitish, in male faintly tinged fuscous-ochreous, marbled towards apex with grey, more so in female.

Uncus strongly chitinated, robust, elongate, top rounded and rather flattened. Socius small, ovoid. Gnathos strong, broad, hook moderate. Transtilla knob large, broad, densely covered with short dentations, median projections short, *united* in middle, i.e. transtilla single, not paired (bent downward in mount, see figure). Valva rather short. Aedoc-

agus strongly chitinated, with a moderate subapical thorn (Slide No. 467 D, allotype).

Limen rather narrow, excavate in middle. Ostium a shallow rounded cup. Colliculum moderate. Cestum with upper part transparent but obviously not membranous, broad, coiled; terminal part absent. Signum rather small (Slide No. 448 D, holotype).

Lake Habbema, 3250—3300 m, August 13, 1938 (allotype, male). August 18, 1938. Hill North from Lake Habbema, 3800 m, August 24, 1938 (holotype, female). Three males, one female. Allied to preceding, distinct by little obscured ground colour and well-defined dark markings.

Anisotenes pyrra spec. nov. (figs. 144, 145)

$\pi\sigma\sigma\sigma\sigma$ = reddish

♀ 22—26 mm. Head and thorax fulvous, face paler. Palpus fulvous tinged with fuscous, towards apex of median segment mixed with a few dark fuscous scales. Antenna fulvous ringed with whitish. Abdomen ochreous-whitish. Legs whitish-ochreous, anterior tarsus slightly infuscated, pale-ringed. Fore wing oblong, broadest before middle, costa little ciliated, strongly curved anteriorly, almost straight posteriorly, apex little rounded, termen slightly convex, little oblique. Whitish-fulvous, tinged with pink, slightly suffused with darker pinkish-fulvous and faintly with greyish, markings light fulvous-grey or brownish and dark ferruginous. A conspicuous dark ferruginous moderate rounded dot with a minute curved appendix below anteriorly, slightly inwardly oblique above fold at $\frac{1}{5}$ of wing, sometimes reduced to a minute mark or entirely absent; costal cilia and costa narrowly suffused with darker pinkish-fulvous, transversely strigulated with fulvous-grey; central fascia indicated by an oblique, rather narrow fulvous-grey transverse streak from beyond $\frac{1}{4}$ of costa towards dorsum before tornus, reaching to middle of disc, slightly dilated on costal edge; margins of this streak marked by a few short dark ferruginous transverse strigulae; this streak is connected by an ill-defined grey suffusion with posterior $\frac{1}{3}$ of dorsum; suffusion reaching posteriorly to end of cell, with anterior edge perceptible, forming a rounded projection below fold, excavate beneath this and marked on dorsum with dark-grey transverse strigulation, posterior edge of suffusion indefinite; costal patch represented by a rather narrow longitudinal streak of fulvous-grey or brownish suffusion along costa, from before middle to before apex, somewhat dilated in middle, sometimes rather well-defined, and marked with fine dark ferruginous dots; dorsum slightly suffused with greyish or brighter fulvous throughout, faintly transversely strigulated with dark grey, a moderate brighter fulvous suffusion in disc above tornus; terminal fifth of wing slightly suffused with grey or with brighter fulvous, with slightly curved little oblique transverse rows of dark ferruginous points, a somewhat larger point on end of cell. Cilia pinkish-white, a broad ferruginous

subbasal fascia. Hind wing and cilia ochraceous-whitish, both tinged in apex with light fulvous.

Limen very similar to that in the preceding species. Ostium larger, cup-shaped. Colliculum moderate. Cestum tortuous, terminal fold very large, long, plicate. Signum moderate (Slide No. 451 D, holotype).

Moss Forest Camp, 2600—2800 m, October 14, 1938 and November 4, 1938 (holotype). Five km northeast of Lake Habbema, 2800 m, October 29, 1938. Four specimens. Allied to preceding. Can easily be distinguished from all other species by pinkish tinge and discal dot.

Anisotenes amphilogia spec. nov. (figs. 142, 143)

ἀμφίλογος = dubious

♀ 24 mm. Head creamy-whitish, a median longitudinal patch on vertex and collar fuscous. Palpus grey mixed with white. Thorax dark fuscous-grey, tegula creamy-whitish, slightly suffused with pale fuscous. Abdomen whitish-greyish. Legs whitish, anterior tibia and tarsus suffused with brownish above. Fore wing oblong, rather narrow, costa gradually curved anteriorly, slightly sinuate posteriorly, apex subacute, termen sinuate, little oblique. Creamy-whitish, slightly irregularly suffused with fuscous, retinate with dark grey. A suffused small greyish patch on $\frac{1}{3}$ of costa, a large deep blackish-fuscous elongate spot along cell, from base to middle of wing, anteriorly reaching to fold, posteriorly slightly extending above upper edge of cell, suffused with blackish along edges of cell, fold and parting vein; a moderate erect-triangular spot of greyish fuscous suffusion on dorsum beyond middle; costal patch irregular, indicated by four dark grey dots along costa spread from $\frac{3}{5}$ to before apex, and by a triangular dot below costa at $\frac{3}{4}$; an oblique blackish dot on lower angle of cell; about two irregular subterminal dark fuscous streaks, more or less interrupted and interconnected so as to form subterminal retination extending from tornus to costa before apex. Cilia whitish, apical third grey, an interrupted dark fuscous antemedian fascia. Hind wing whitish, apical third slightly infuscated, cilia concolorous.

Limen moderately angulate at the sides. Ostium rounded, small. Colliculum distinct. Cestum long, moderately broad, little tortuous, terminal fold moderate, end subacute. Signum long, narrow, sickle-shaped, capitulum moderate, subclavate (Slide No. 428 D).

Moss Forest Camp, 2600—2800 m, October 9—November 5, 1938. One specimen. Little allied to preceding and following.

Anisotenes fallax spec. nov. (figs. 148, 149)

♀ 21 mm. Head creamy-whitish, vertex fuscous-greyish. Palpus whitish, mixed with pale fulvous, suffused with grey towards apex. Thorax light greyish tinged creamy, tegula creamy-whitish. Abdomen brownish-grey. Legs whitish touched with greyish-fuscous. Fore wing elongate, moderately broad, costa ciliate, strongly curved anteriorly, slightly curved posteriorly,

Female genitalia of *Anisotenes* gen. nov. Fig. 135: *leucophthalma* spec. nov., ovipositor, ostium and ductus bursae. Fig. 136: *bathygrapha* spec. nov., ovipositor and ostium. Fig. 137: *idem*, ductus bursae and bursa copulatrix. Fig. 138: *stematostola* spec. nov., ovipositor and ostium. Fig. 139: *idem*, ductus bursae and bursa copulatrix. Fig. 140: *decora* spec. nov., ovipositor and ostium. Fig. 141: *idem*, ductus bursae and bursa copulatrix. Fig. 142: *amphiloga* spec. nov., ductus bursae and bursa copulatrix. Fig. 143: *idem*, ovipositor and ostium. Fig. 144: *pyrra* spec. nov., ductus bursae and bursa copulatrix. Fig. 145: *idem*, ovipositor and ostium. Fig. 146: *ellipegrapha* spec. nov., ovipositor and ostium. Fig. 147: *idem*, ductus bursae and bursa copulatrix.

apex subacute, termen scarcely concave above, rounded beneath. Creamy-whitish, densely suffused with pale greyish-fuscous, markings ill-defined, darker greyish-fuscous. Basal patch small, indicated by a suffused strongly angulate greyish-fuscous line, with upper half much outwardly oblique, lower half dilated posteriorly by indefinite greyish-fuscous suffusion; an ill-defined rather broad transverse cloudy fuscous-greyish suffusion from $\frac{1}{3}$ of costa to $\frac{2}{3}$ of dorsum, slightly darker below; costal patch indicated by four suffused light greyish-fuscous dots along costa posteriorly and an oblique greyish streak below costa; a black point on lower angle of cell; apical fourth of wing suffused with pale brownish-fuscous, dotted with black; a faint vertical blotch of greyish suffusion in tornus, dilated above; dorsum and tornus dotted with blackish-fuscous. Cilia creamy-whitish, a faint interrupted antemedian line. Hind wing and cilia whitish, tinged pale ochreous posteriorly.

Limen narrow, gradually curved throughout, slightly dilated in middle. Ostium shallow, membranous. Colliculum indicated. Cestum long, rather broad, little tortuous, terminal fold with edges thickened. Signum curved, rather thick, dentations small, capitulum rounded (Slide No. 432 D).

Moss Forest Camp, 2600—2800 m, October 9—November 5, 1938. One specimen. Of obscure affinity, according to genitalia nearest to preceding.

Anisotenes scoliographa spec. nov. (figs. 124, 125)

σκολιός = oblique, *γράφω* = to draw

♀ 22 mm. Head white, vertex with three suffused grey spots. Palpus dark fuscous-grey, base paler, dorsal fringe of scales towards apex of median segment above, and tip of terminal segment white mixed with grey. Antenna dark fuscous ringed with white. Thorax fuscous-greyish, mixed with white, three indistinct transverse darker grey bands. Abdomen light greyish-ochreous. Legs whitish-ochreous, anterior and median strongly infuscated, tarsi and tibiae pale ringed. Fore wing elongate, rather narrow, little dilated, costa strongly curved anteriorly, straight posteriorly, a small tuft of cilia before middle, apex rounded, termen faintly sinuate, little oblique. Whitish, densely retinate with greyish, dorsal half suffused with fuscous, terminal third stronger retinate with grey. Basal patch moderate, suffused with dark grey and fuscous, a narrow blackish and ferruginous transverse median line, angulate in middle, with a horizontal ferruginous branch from above its middle to base of wing; edge of basal patch black, strongly angulate in middle, narrow above, dilated beneath, somewhat suffused on dorsum; costa throughout rather strongly retinate and suffused with dark grey; central fascia rather narrow, from $\frac{2}{5}$ of costa to dorsum before tornus, upper half dark grey, edged with blackish brown, narrowed and slightly outwardly curved below, to middle of disc; lower half of fascia cloudy, lighter greyish-fuscous, strongly suffused and dilated, edge ill-defined; this edge reaching

along dorsum from $2/5$, to tornus, and lower half of termen, and transversely strigulated, and dotted with blackish-brown; costal patch elongate-triangular extending from slightly beyond middle of costa to before apex, dark grey, with four dots along costa, anterior edge and top dark brown, the latter connected by a small vertical strigula with lower part of central fascia; a convex row of blackish points before middle of termen, filled with dark grey suffusion, thus forming a subtriangular terminal patch; dorsum with a row of blackish-brown dots. Cilia whitish, apical third greyish, a subbasal row of blackish dots. Hind wing pale fuscous-greyish, slightly marbled with darker posteriorly, cilia grey, basal third whitish, a dark grey antemedian line.

Limen narrow, in middle indefinite. Ostium funnel-shaped, moderate, lower edge obliquely truncate. Colliculum oblique. Cestum little tortuous, terminal fold small. Signum large, point strongly curved (Slide No. 449 D).

Moss Forest Camp, five km northeast of Lake Habbema, 2800 m, October 24, 1938. One specimen. Closely allied to *ellipegrapha* spec. nov. and *oxygrapta* spec. nov.

Anisotenes ellipegrapha spec. nov. (figs. 146, 147)

έλλιπής = insufficient, γράφω = to draw

♀ 19 mm. Head dark fuscous-grey, face whitish-fuscous. Palpus white, median segment towards apex and terminal segment dark grey. Antenna pale ochreous ringed with grey, scape dark fuscous-grey above. Thorax fuscous-grey? (much denuded). Abdomen pale ochreous, suffused with dark grey towards apex above, basal segment white, anal tuft pale ochreous. Legs whitish, anterior tibia and tarsus fuscous, the latter white-ringed. Fore wing elongate-ovate, broadest in middle, costa gradually curved anteriorly, slightly curved posteriorly, apex rather pointed, termen sinuate, little oblique. Whitish, evenly marbled and irrorated with pale grey, markings light brown, grey and blackish. Extreme base of costa suffused with dark fuscous-grey, a faint transverse suffused grey streak on costa beyond base reaching to fold, slightly dilated beneath; a conspicuous oblique moderately broad transverse mark on costa before middle, hardly reaching to middle of disc: light brown, edged with blackish throughout; an indistinct cloudy round patch of grey suffusion connecting end of that mark with dorsum before tornus, reaching posteriorly to end of cell; small transverse black marks on dorsum before tornus; a black point below top of costal mark, and another on end of cell; costal patch indicated by three black dots on costa posteriorly, and a longitudinal somewhat oblique small black mark on bases of veins 9 and 10; two more black costal dots before apex; a moderate blackish vertical patch before lower half of termen, its acute base in tornus; an indistinct row of dark points before upper half of termen; apex and edge of termen suffused with dark grey. Cilia (imperfect) greyish-white, an interrupted dark grey ante-

median line. Hind wing and cilia whitish, both touched with greyish in apex and along costa.

Limen moderately broad. Ostium rather large, subcylindrical, lower half slightly narrowed, ventral edge indent. Colliculum narrow. Cestum reduced: straight, rather short, not tortuous, terminal plate little plicate, rather broad. Signum narrow (Slide No. 450 D).

Mist Camp, 1800 m, January 17, 1939. One specimen. Allied to preceding.

Anisotenes oxygrapta spec. nov. (figs. 156, 157)

$\acute{\alpha}\xi\acute{\epsilon}\varsigma$ = sharp, $\gamma\epsilon\acute{\alpha}\gamma\mu\alpha$ = to draw

♀ 19.5 mm. Head dark grey suffused with ferruginous-brown, face below, and a narrow longitudinal streak on vertex white. Thorax dark grey suffused with deep ferruginous-brown anteriorly, light grey mixed with whitish posteriorly, tips of tegulae whitish. Abdomen whitish. Legs whitish slightly infuscated above, anterior tibia and tarsus dark fuscous, white-ringed. Fore wing oblong, rather narrow, broadest before middle, costa ciliated, considerably curved anteriorly, faintly prominent before middle, slightly sinuate posteriorly, apex little rounded, termen faintly sinuate, oblique. Whitish, densely suffused and irrorated with fuscous-grey, markings dark fuscous grey and blackish-fuscous. Base of costa with an oblique transverse blackish strigula not reaching middle of disc; edge of basal patch indicated by a moderately broad transverse fuscous-grey vertical fascia, slightly dilated towards costa, strongly angulate just above middle, slightly mixed with blackish and ochreous, followed on costa by a black point; central fascia narrow, tolerably straight, from beyond $\frac{1}{3}$ of costa to $\frac{3}{5}$ of dorsum, fuscous-grey suffused with blackish-fuscous towards extremities, and marked with blackish-fuscous groups of scales in middle posteriorly; this central fascia interrupted and replaced by faint yellowish-ochreous suffusion just above middle of disc, lower half of fascia dilated by an ill-defined blotch of grey suffusion not reaching termen, with anterior edge serrate; costal patch elongate-triangular, narrow, fuscous-grey suffused with blackish-fuscous anteriorly, four dots along costa and one on top of patch blackish-fuscous; a blackish dot on lower angle of cell; tornus and apical fifth of wing suffused with dark grey; tornus and lower half of termen also mixed with pinkish-fulvous, irregular subterminal rows of black points, curved above and reaching costa. Cilia greyish-fuscous, basal third whitish, an interrupted blackish antemedian line. Hind wing whitish, faintly tinged ochreous posteriorly, apex marbled with light grey. Cilia whitish.

Limen narrow, rounded, dilated in middle. Ostium flattened. Colliculum absent. Cestum short, along lower third of ductus bursae, with an ovate and folded dilatation in bursa. Signum long, sickle-shaped, capitulum elongate, rather pointed (Slide No. 434 D).

Lake Habbema, 3250—3300 m, August 3, 1938. One specimen. Distinct

by narrow fore wing and oblique, narrow markings. Allied to *ellipeggrapha* and *scoliographa*.

Anisotenes spodotes spec. nov. (figs. 150, 151)

σποδότης = ashy

♀ 18—21 mm. Head white, vertex densely suffused with fuscous-grey. Palpus dark greyish-fuscous, mixed with white, median segment towards apex above and tip of terminal segment white. Thorax fuscous-grey mixed with ochreous-whitish. Antenna fuscous-grey, pale-ringed. Abdomen ochreous-grey. Legs whitish, anterior slightly infuscated, tibia and tarsus light-ringed. Fore wing oblong, not dilated, costa strongly curved anteriorly, straight posteriorly, apex little rounded, termen slightly concave above, scarcely oblique. Whitish, densely irrorated, and suffused with fuscous-grey, markings much suffused, darker grey. Costal patch moderate, indicated by a grey inwardly oblique erect-triangular patch on dorsum beyond base, with top reaching above middle of disc, and with posterior edge indefinite, and by a small suffused mark on costa beyond base; a few blackish scales before base of wing; central fascia indicated by a moderate quadrate spot beyond $\frac{1}{3}$ of costa, and a faint streak of greyish suffusion from below this to dorsum beyond middle, slightly dilated below; costal patch elongate-triangular, from before middle of costa to rather before apex, much suffused, marked along costa with some three paler dots, top connected by an ill-defined, blackish, suffused and curved streak with tornus, wing beyond this and beyond costal patch suffused with fuscous-grey; about two subterminal series of suffused blackish dots, apex and terminal edge dark grey; minute blackish scales scattered over middle of disc. Cilia grey with white base, a dark grey antemedian band. Hind wing light greyish, in apex slightly suffused and marbled with fuscous, cilia darker fuscous-grey, a faint grey antemedian line.

Limen submembranous and rather large at the sides, indefinite in middle. Ostium very large, funnel-shaped, slightly narrowed before end, ventral rim irregularly excavate. Colliculum small. Cestum small, short, tortuous, terminal fold absent. Signum moderate, little curved (Slide No. 441 D, holotype).

Sigi Camp, 1500 m, February 24, 1939 (holotype). Mist Camp, 1800 m, January 1939. Two specimens. Distinct by strongly suffused fore wing and ill-defined markings; forming a connection with the following genus.

Anisotenes acrodasys spec. nov. (figs. 194, 195)

ἀκρόρ = a margin, *δασύς* = densely haired

♀ 18 mm. Head whitish, slightly mixed with fuscous. Palpus fuscous, base whitish, dorsal cilia of median segment creamy-whitish. Thorax dark greyish-fuscous, a narrow blackish transverse line anteriorly, an indication of a whitish preapical transverse band (rubbed off in the unique specimen), tegula creamy-whitish, a transverse median blackish and brownish band.

Abdomen whitish touched with greyish. Legs pale fuscous-whitish, anterior tibia and tarsus darker fuscous, light-ringed. Fore wing elongate-subovate, costa strongly curved anteriorly, ciliate, straight posteriorly, apex subacute, termen straight, oblique. White, faintly irrorated and retinate with pale fuscous and pale grey, markings light fuscous and grey. Basal patch moderate, edge distinct, narrow, blackish, little oblique, middle third projecting, rounded: suffused with greyish-fuscous transversely strigulated with blackish; a moderate longitudinal blackish patch in middle of basal patch beyond base of wing; a small blackish suffusion on base of costa; costa beyond patch transversely blotched with grey; transverse fascia dark grey: a subquadrate blotch beyond $\frac{1}{3}$ of costa, reaching below upper edge of cell; an ill-defined suffusion, twice as broad as blotch, along central third of dorsum, strigulated with blackish, connected above with costal patch anteriorly; the latter large, from beyond $\frac{1}{2}$ to $\frac{5}{6}$ of costa, subtrapezoid, with suffused edge, fuscous-greyish, coarsely transversely strigulated with dark brown with some four blackish patches along costa; a straight fuscous-grey little inwardly oblique moderately broad streak from termen to vein 6, angulate there, running to middle of posterior edge of costal patch; a small oblique streak from lower angle of cell towards tornus; interneural rounded groups of blackish scales along lower half of termen, and before its upper half and apex; termen suffused with fuscous-grey; tornus and middle of disc posteriorly faintly suffused with orange-ochreous. Cilia grey, basal half whitish, with a row of blackish blotches. Hind wing pale greyish-fuscous darker towards apex, cilia grey with a whitish basal and a dark grey antebasal line.

Limen short, much dilated towards ostium which is wide, funnel-shaped, membranous. Colliculum and cestum absent. Signum rather short, curved, narrow, smooth, a chitinised projection in bursal wall, capitulum large, obliquely rounded (Slide No. 433 D).

Moss Forest Camp, five km northeast of Lake Habbema, 2800 m, October 26, 1938. One specimen. Resembles a *Parachorista*.

Nearest to *A. spodotes* spec. nov.

Parachorista gen. nov.

Head with roughly appressed scales. Ocellus posterior. Proboscis developed. Antenna in male ciliated. Palpus moderate, porrect, median segment with roughly projecting scales above and beneath, more or less expanded towards apex, terminal segment short. Thorax without crest. Fore wing rather narrow, pointed, with costal fold, vein 2 from $\frac{1}{2}$ — $\frac{3}{5}$, 3 from angle, terminal veins rather curved upward posteriorly, 7 separate, to termen, 11 from middle. Hind wing without eubital pecten, 2 from $\frac{1}{3}$, 3 from angle, separate from 4, often 3 and 4 connate, seldom very short-stalked, 5 approximated at base, 7 and 8 short-stalked or closely approximated towards base.

Tegumen elongate, slender; uncus broad, narrowed above base, top

mostly rounded or diamond-shaped, short-bristled below; gnathos moderate or rather long, curved, hook slender; socius moderate, sometimes large, drooping, densely fine-bristled; transtilla knob large, dentate on top, median projection long, slender; peniculus, an elongate-ovate verrucose projection; valva with folded disc, rather short; vinculum slender, rounded; aedoeagus pistol-shaped, little curved, mostly with a large thorn towards orifice.

Ostium simple; colliculum indicated; ductus bursae moderately long, cestum mostly absent, except for a small terminal part, being a concave body inside bursa copulatrix; the latter ellipsoid; signum very large, dagger-shaped, strongly dentate, close to end of ductus bursae.

Typus generis: *Parachorista cricophora* spec. nov., ♂, ♀.

This genus is closely allied to *Anisotenes* gen. nov.; for differences we may refer to that description. It also shows affinity to *Isotenes*. The large number of the closely allied species indicates that they are of recent origin, and that *Anisotenes* and *Parachorista* are in a stage of rich development; the "woolly" appearance of certain species, with ciliate costa, may be an "alpine" characteristic, similar to that recorded in several Palearctic Lepidoptera which inhabit high mountainous regions. The male genitalia of *Parachorista* are highly characteristic by the complicated valva, combined with the relatively simple uncus. The external structure of the present genus is almost congruent with *Epichorista* MEYRICK, 1910, but the male genitalia of the type species of that genus are of the entirely different *Epagoge* type.

Key to the Papuan species of *Parachorista*

1. Fore wing with a subquadrate well-defined greyish-brown spot before middle of termen. *samata* DIAKONOFF
No such spot. 2
2. Fore wing with pale yellowish-ochreous markings. *lutescens* spec. nov.
Fore wing with greyish or fuscous markings. 3
3. Fore wing with a large triangular patch of ground colour on second fourth of dorsum, paler than other parts of wing. *trulligera* spec. nov.
No such patch 4
4. Basal patch represented by a large semicircular dark greyish-fuscous, blackish-edged blotch on basal fourth of costa. *basalis* DIAKONOFF
No such blotch 5
5. Fore wing with one or two conspicuous blackish discal dots 6
No such dots. 7
6. Two blackish discal dots in a horizontal series; transverse fascia indicated *anthracograptus* spec. nov.
One dark fuscous discal dot; transverse fascia hardly perceptible
. *verecunda* spec. nov.
7. Fore wing with basal patch large, edge straight, outwardly oblique
. *anassa* spec. nov.
Edge of basal patch either angulate, or indefinite 8
8. Basal patch conspicuously dark fuscous-grey, to before $\frac{1}{3}$ of costa, edge slightly angulate; costal fold broad, central fascia indicated by a spot on costa and an oblique suffusion on lower half of wing *anisographa* spec. nov.
Not thus. 9

9. Fore wing with a conspicuous oblique transverse slightly curved dark fuscous mark on end of cell. *cricophora* spec. nov., male
No such mark 10
10. Costal patch indefinite, much obscured by dark suffusion on posterior part of fore wing 11
Costal patch, although suffused, still distinctly darker than ground colour of posterior part of wing. 13
11. Fore wing narrow, acute, with a series of blackish oblique marks and a blackish fascia before termen. *acnemorpha* spec. nov.
Fore wing rather broad, subacute, no distinct subterminal markings. 12
12. Fore wing distinctly mixed and suffused with brownish and fulvous, costa rather smooth *pityrochroa* spec. nov.
Fore wing suffused and marked with greyish-fuscous and grey and dotted with blackish; costa roughly ciliated. *lagaroptycha* spec. nov.
13. Males 14
Females 18
14. Costal patch large, invert-trapezoid *colobodesma* spec. nov.
Costal patch moderate or small, triangular or elongate-ovate 15
15. Costal patch triangular 16
Costal patch elongate-ovate 17
16. Central fascia narrow, not dilated *oligosta* spec. nov.
Central fascia distinctly dilated below middle *rhopalodes* spec. nov.
17. Spot on middle of costal fold larger than costal spot on central fascia *euphyes* spec. nov.
Spot on middle of costal fold rather ill-defined, smaller than costal spot on central fascia *ochra* spec. nov.
18. Central fascia rather broad, little dilated below, almost touching anterior edge of costal patch *psara* spec. nov.
Central fascia always remote and distinctly separated from costal patch 19
19. Central fascia almost interrupted above middle, then abruptly strongly dilated, with a rather large acute projection anteriorly. *rhopalodes* spec. nov.
Central fascia either not interrupted or dilated gradually; angulate projection small or absent. 20
20. Fore wing with ground colour whitish, little irrorated with fuscous or grey (sometimes entirely suffused with light olive), markings much darker 21
Fore wing with ground colour densely irrorated and suffused with brownish-fuscous or greyish-fuscous, markings not much darker 22
21. A curved continuous dark streak from termen above tornus to top of costal patch; central fascia beginning with a distinct dark costal patch *mimela* spec. nov.
Dark mark from termen above tornus either formed by a row of separate black dots, or very narrow and short, or absent; central fascia continuous or with upper half ill-defined *apheles* spec. nov.
22. Markings brownish-fuscous. Basal patch deep brownish-fuscous throughout. Fore wing moderately broad *cricophora* spec. nov.
Markings fuscous-grey. Basal patch not darker than ground colour, edged with fuscous-grey, often a blackish patch on base of wing. Fore wing narrow. *stenoptera* spec. nov.

***Parachorista apheles* spec. nov. (figs. 152, 153)**

ἀφελής = simple

♀ 19 mm. Head and thorax white suffused with greyish-fuscous. Palpus white, median segment suffused with light fuscous in middle, and towards

Female genitalia of Tortricinae. Fig. 148: *Anisotenes fallax* spec. nov., ovipositor and ostium. Fig. 149: *idem*, ductus bursae and bursa copulatrix. Fig. 150: *Anisotenes spodotes* spec. nov., ovipositor and ostium. Fig. 151: *idem*, ductus bursae and bursa copulatrix. Fig. 152: *Parachorista apheles* spec. nov., ovipositor and ostium. Fig. 153: *idem*, bursa copulatrix. Fig. 154: *P. mimela* spec. nov., ovipositor and ostium. Fig. 155: *idem*, ductus bursae and bursa copulatrix. Fig. 156: *A. oxygrapta* spec. nov., ovipositor and ostium. Fig. 157: *idem*, ductus bursae and bursa copulatrix. Fig. 158: *P. pityrochroa* spec. nov., ovipositor and ostium. Fig. 159: *idem*, bursa copulatrix. Fig. 160: *P. acmemorpha* spec. nov., ovipositor and ostium. Fig. 161: *idem*, bursa copulatrix.

apex below, terminal segment dark fuscous above. Antenna whitish, faintly ringed with fuscous, apical third fuscous, scape above fuscous-grey. Abdomen ochreous-greyish. Legs whitish, anterior and median legs infuscated above, with tibia and tarsus white-ringed. Fore wing oblong, costa rather strongly arched anteriorly, faintly concave posteriorly, apex little rounded, termen slightly rounded, little oblique. White, slightly transversely strigulated and scattered with light fuscous-grey scales, markings rather pale fuscous-grey. Basal patch moderate, suffused with fuscous-grey along base of costa, finely strigulated with blackish; edge of this patch narrow, strongly angulate in fold, suffused below; basal patch blackish above, fuscous below; a moderate blackish spot in its middle, preceded by a few blackish scales, a fine short longitudinal blackish streak from middle of base of wing; central fascia from beyond $\frac{1}{3}$ of costa to posterior $\frac{1}{4}$ of dorsum, moderate, gradually slightly dilated below, edges tolerably straight or anterior edge slightly concave with a small acute projection below middle, posterior edge somewhat convex; central fascia irrorated or suffused with greyish-fuscous, narrowly edged above with blackish, a streak on costal edge, and some dotting on dorsal edge blackish; costal patch distinct, elongate-triangular, from middle of costa to before apex, evenly suffused with dark greyish-fuscous, marked along costa with blackish, and whitish dots; sometimes a blackish point on lower angle of cell; blackish dotting before upper half of termen arranged in an oblique row in middle of wing, and in a transverse row below apex; apex suffused with fuscous-grey. Cilia white, a small greyish patch opposite apex and an antemedian row of fine black points. Hind wing light grey, suffused and marbled with fuscous towards apex, cilia greyish with white base.

Limen strong, with triangular dilatations at the sides. Ostium funnel-shaped, large, connected with a distinct, chitinated colliculum. Cestum obliterate, except for a small, semispheroid bursal part. Signum rather curved, capitulum elongate (Slides No. 414 D, holotype, No. 439 D, paratype).

Sigi Camp, 1500 m, February 17—27, 1939 (holotype). Five females. Allied to *mimela* spec. nov.

***Parachorista mimela* spec. nov. (figs. 154, 155)**

μιμηλόζ = imitating

♀ 17 mm. Head whitish, vertex suffused with dark fuscous-grey, edged with white, tuft with a narrow longitudinal white line. Palpus dark fuscous-greyish, basal segment, median segment towards apex, and tip of terminal segment white. Thorax greyish-fuscous mixed with pale ochreous-whitish. Abdomen pale greyish-ochreous. Legs whitish, anterior and median tibia and tarsus dark grey, white-ringed. Fore wing oblong, dilated, costa gradually curved anteriorly, slightly sinuate posteriorly, apex little rounded, termen almost straight above, rounded beneath. Whitish, suffused with light ochreous-yellowish, except along dorsum and

termen, markings ferruginous-brown, dotted with leaden-grey. Base of wing with a small dark grey transverse streak not reaching dorsum; basal fifth of costa with a narrow dark grey streak; basal patch indicated by a large, ferruginous-brown transverse blotch, leaden-grey in middle, originating from $\frac{1}{5}$ of costa, not reaching dorsum, with posterior edge angulate in middle of disc, with lower end acute, an irroration of black scales in middle of blotch; a small dark grey dot on costa beyond $\frac{1}{5}$; central fascia rather narrow, from $\frac{2}{5}$ of costa to dorsum before tornus, interrupted in cell and above dorsum, so as to form a small subtriangular transverse spot on costa, light leaden-grey, edged with ferruginous; median part of fascia represented by a rounded somewhat suffused ferruginous-brown spot below cell in middle of wing, and by an irregular spot on dorsum; these two spots connected by light leaden suffusion; costal patch large, conspicuous, elongate-semiovate, reddish-ferruginous, on costa dark grey, and marked with two small whitish bars, in centre dotted with light leaden-grey; a light ochreous-yellowish suffusion tinged olive, between central fascia and costal patch, with posterior edge ill-defined, extending from about middle of posterior edge of costal patch to tornus; a curved suffused ferruginous-reddish streak, yellowish above, running from termen above tornus almost to top of costal patch; two ill-defined ferruginous-fuscous strigulae from upper half of termen to costa before apex; terminal and apical edge with a suffused grey streak, mixed with ferruginous, slightly dilated on veins. Cilia whitish, apical half light grey, an antemedian row of dots, and a patch opposite apex, dark grey. Hind wing pale fuscous, brighter fuscous towards apex, faintly dotted with grey, cilia paler, whitish-greyish, a faint grey antemedian line.

Limen very similar to that in *P. rhopalodes* spec. nov., but slightly angularly bent at the sides. Ostium somewhat sclerotized. Cestum longer, tortuous (twice), bursal part much smaller than in *P. rhopalodes*. Signum shorter, dentations larger, capitulum longer, top stronger rounded (Slide No. 413 D, holotype).

Sigi Camp, 1500 m, February 17, 1939, February 26, 1939 (holotype). Mist Camp, 1800 m, January 14, 1939. Three females. Allied to *P. apheles* spec. nov. and *P. oligosta* spec. nov., superficially resembles very much an *Isotenes*.

***Parachorista oligosta* spec. nov. (fig. 162)**

ὀλιγοστός = smallest

♂ 16.5 mm. Head and thorax whitish, mixed and suffused with fuscous. Palpus pale fuscous, median segment with projecting scales towards apex above, white. Antenna pale fuscous, flagellum banded with white. Abdomen pale greyish. Legs whitish, anterior leg infuscated, tibia and tarsus light-ringed. Fore wing with a moderate costal fold to before middle, costa gradually curved anteriorly, straight posteriorly, a short brush of cilia in middle, apex rounded, termen scarcely convex, little oblique. White,

slightly suffused with grey, somewhat tinged fuscous, markings dark grey. Basal half of fold dark grey, base of wing above fold slightly suffused with fuscous-grey, obliquely strigulated with dark grey; central fascia narrow, pale greyish, ill-defined, from a short blackish streak along costa at $\frac{2}{5}$, to $\frac{3}{4}$ of dorsum, darker and slightly dilated along basal third; costal patch moderate, somewhat elongate-triangular, suffused with dark fuscous-grey, top and three small dots along costa blackish-grey; apex of wing suffused with grey, finely irrorated with darker fuscous-grey, edge of this suffusion ill-defined, from top of costal patch to termen above tornus; some indistinct fuscous-grey irroration in tornus, and along upper half of wing before costal patch. Cilia white, a dark fuscous-grey median band, interrupted along lower half of termen, and in tornus. Hind wing pale grey, evenly infuscated in apex. Cilia greyish with a darker antemedian shade, and whitish base.

Uncus somewhat rounded, broad-diamond-shaped. Socius rather large. Hook of gnathos short. Transtilla knob very large, elongate, median projection long, sinuate. Aedocagus with terminal thorn (Slide No. 440 D).

Mist Camp, 1800 m, January 17, 1939. One specimen. Allied to preceding, distinct by small size and dark grey costal markings.

***Parachorista pityrochroa* spec. nov. (figs. 158, 159)**

παραρχωός = bran-coloured

♀ 16 mm. Head and palpus light grey tinged fuscous, latter rather slender. Thorax fuscous-grey mixed with whitish (damaged). Abdomen pale ochreous-whitish. Legs pale ochreous, infuscated, anterior leg fuscous, light-ringed. Fore wing elongate-ovate, costa gradually curved anteriorly, almost straight posteriorly, apex pointed, termen straight above, gradually rounded beneath, oblique. Creamy-whitish, densely irrorated and suffused with fuscous-brownish, and partially with fulvous, markings dark fuscous-greyish. Anterior third of wing with ground colour little irrorated with fuscous, a faint fulvous streak along fold. Basal third of costa coarsely transversely strigulated with blackish-fuscous; indistinct small dark discal marks beyond base and at about $\frac{1}{5}$, and a suffused dark brownish-fuscous dot at $\frac{1}{5}$ of dorsum indicate basal patch; central fascia from beyond $\frac{1}{3}$ of costa to $\frac{2}{3}$ of dorsum, greyish-fuscous, edged with dark fuscous-brown, in middle of disc slightly suffused with fulvous, with upper third narrow, narrowed above middle, with lower half dilated; anterior edge slightly concave in middle; posterior two-thirds of wing densely suffused with fuscous-brownish tinged ferruginous, spotted with brownish-fulvous except along costa and termen, this suffusion much obscuring posterior edge of central fascia; costal patch ill-defined, elongate-ovate, darker brownish-fuscous, four dark brown dots along costa; a series of subterminal dark fuscous-brown marks from termen to below apex, middle one curved, running from termen above tornus almost to top of costal patch; a fulvous suffused dot on lower angle of cell; dorsum slightly

strigulated in middle with blackish-fuscous. Cilia creamy, opposite apex and tornus suffused with grey, an antemedian row of blackish-fuscous dots. Hind wing whitish, in apex marked with a pair of greyish dots, cilia whitish.

Limen as in preceding. Ostium with lower edge deeply indent. Cestum absent. Signum little curved, rather broad, coarsely dentate (Slide No. 411 D).

Sigi Camp, 1500 m, February 26, 1939. One specimen. Distinct by colouring.

Parachorista rhopalodes spec. nov. (figs. 163, 171, 172)

ῥοπαλόδης = club-shaped

♂ 14 mm. Head white, vertex densely mixed with grey. Palpus dark grey, base and apex of median segment whitish. Thorax and tegula grey, edged with white, patagium white. Abdomen grey touched with ochreous, anal tuft and venter paler. Legs whitish, slightly suffused with grey, anterior and median tarsus and tibia suffused and ringed with dark fuscous. Fore wing elongate-ovate, rather narrow, costa with a moderate fold to middle, gradually moderately curved anteriorly, straight posteriorly, apex subacute, termen slightly sinuate above, obliquely rounded beneath, moderately oblique. White, retinate and suffused with grey, markings dark grey, ferruginous, and blackish-brown. Basal half of costal fold suffused with dark grey; basal patch moderate, slightly suffused with pale ochreous, a blackish suffused dot in middle; edge of patch slightly angulate above middle, suffused with blackish, its lower half formed by an inwardly oblique black patch to dorsum beyond base; a narrow pale grey strigula on costa beyond and parallel to edge of basal patch, to above middle of disc; central fascia dark brown mixed with ochreous scales, posterior half of lower part grey, running from before middle of costa to $\frac{2}{3}$ of dorsum, abruptly dilated above middle, lower half of central fascia about twice as broad beneath as above, its anterior edge sinuate above, with an angulate projection above middle, suffused below; posterior edge of fascia straight, mixed with ferruginous above, rounded below; costal patch elongate-triangular, from $\frac{3}{5}$ of costa to before apex, dark grey, lower half suffused with ferruginous; a light ochreous suffused vertical patch from top of costal patch to vein 3, sometimes absent; terminal and apical part of wing coarsely retinate with grey, mixed with ferruginous. Cilia white, an antemedian row of suffused grey dots. Hind wing whitish tinged fuscous-greyish, more so posteriorly, cilia white, a faint antemedian grey line.

Uncus erect-ovate-diamond shaped. Sclerotisation at base of arm of gnathos rounded below. Transtilla knob with long dentations, median projection moderate (Slide No. 408 D, holotype).

♀ 17 mm. Head white, thorax evenly greyish (damaged). Abdomen pale whitish-ochreous or ochreous-grey. Fore wing pointed-subovate, costa

gradually curved anteriorly, straight posteriorly, apex pointed, termen hardly sinuate, little oblique. White, densely irrorated with pale grey and light ochreous, markings dark grey and ferruginous. Basal patch indicated by an elongate patch on costa, dark grey mixed with ferruginous; a coarse irroration of black and ferruginous scales in middle of disc beyond base, angulate posteriorly, connected below with a suffused very oblique streak, greyish mixed with ferruginous, and transversely strigulated with dark brown, running from lower third of disc beyond middle to dorsum before middle; a narrow greyish-olive oblique strigula from costa to below middle of disc, tolerably parallel to upper edge of basal patch; central fascia moderately broad, narrowed and almost obliterate above middle, gradually dilated thence, grey, becoming dark grey along costa, edged above and transversely strigulated below with ferruginous, mixed with blackish in disc below middle; costal patch elongate, ovate-triangular, deep ferruginous, somewhat mixed with grey and black scales, top connected anteriorly by a patch of light grey suffusion with middle of central fascia; top of costal patch also connected below by a vertical patch of light ochreous suffusion with central fascia above tornus; two somewhat curved small transverse ferruginous marks before lower half of termen, in tornus connected with base of central fascia. Cilia (imperfect) whitish, an antemedian row of suffused blackish dots. Hind wing pale whitish-fuscous, tinged pale brownish towards apex, cilia whitish.

Limen narrow curved at the sides and slightly dilated by membranes below, in middle obliterate, immediately forming a semimembraneous short tubular ostium. Colliculum indicated. Cestum a short curved moderately broad band along upper half of ductus bursae, and a triangular plate at the edge of bursa. Signum very large, dagger-shaped, dentate, capitulum elongate (Slide No. 409 D, allotype).

Sigi Camp, 1500 m, February 17, 1939 (allotype, female), February 26, 1939 (holotype, male), February 27, 1939. Rattan Camp, 1200 m, February 19, 1939. Five males, two females. Closely allied to *P. colobodesma* spec. nov. differing by wing shape, by slightly different markings, and by distinct genitalia.

***Parachorista colobodesma* spec. nov. (fig. 164)**

κολοβός = damaged, *δεσμός* = a band

♂ 15 mm. Head dirty white. Palpus dark grey, basal segment and top of median whitish. Thorax dirty white, anteriorly suffused with grey, a broad median, and an apical transverse band, and a narrow longitudinal median streak, dark fuscous. Abdomen rather dark grey. Legs ochreous, anterior and median tibia and tarsus dark fuscous, light-ringed. Fore wing subovate, rather broad, costal fold dilated angularly before middle, to middle, costa gradually rather strongly curved along $\frac{3}{4}$, straight posteriorly, apex rather obtuse, termen straight above, rounded beneath. White, scattered with dark grey scales, markings dark grey and deep brown.

Base of costa with a small dark grey streak, followed by a larger transverse dark grey patch before middle of costal fold; an irregular dark brown patch on dorsum, extending from base to before middle, strongly dentate above, dentations reaching costal marks, along dorsum this patch mixed with white and whitish-grey; central fascia formed by a moderate, erect-seniovate, somewhat oblique dark brown patch on costa before middle, and a large patch of dark grey suffusion strigulated with brown, along posterior third of dorsum to tornus, anterior edge serrate, dark brown, a rounded dark brown spot in middle of disc, posterior edge horizontal above, vertical, somewhat angulate below; costal patch elongate-trapezoid, dark brown, four blackish suffused dots along costa, lower edge horizontal along upper margin of cell, suffused with reddish-fulvous; transverse vein with a suffused reddish-fulvous streak; preterminal and apical areas suffused with light grey, retinate with dark grey, two vertical suffused short transverse streaks: before termen below apex, and from termen above tornus, more or less suffused and connected so as to form a terminal mark; terminal edge dark grey. Cilia sordid white, slightly suffused with grey, a grey patch opposite apex, a suffused and interrupted antemedian dark grey fascia. Hind wing fuscous-grey, cilia light grey with a pale basal line.

Genitalia rather similar to those of *P. rhopalodes* spec. nov.: uncus broader, slightly octagonal. Socius large. Sclerotisation at base of arm of gnathos dilated below. Transtilla knob with very long median projection (Slide No. 440 D).

Sigi Camp, 1500 m, February 25, 1939. One specimen. Closely allied to preceding.

***Parachorista anthracograpta* spec. nov. (fig. 165)**

ἄνθραξ = charcoal, *γράφω* = to draw

♂ 16 mm. Head white, lower part of tuft on vertex, fuscous. Palpus fuscous, slightly mixed with white. Thorax whitish, densely mixed with fuscous, apex fuscous. Abdomen pale whitish-greyish. Legs whitish (anterior missing). Fore wing oblong, strongly narrowed towards base, costal fold rather narrow, to beyond middle, costa oblique along fold, slightly prominent in middle, gently curved posteriorly, apex pointed, termen scarcely sinuate above, slightly convex beneath, oblique. White, slightly irrorated with grey, markings greyish tinged fuscous and blackish. Basal patch with a fuscous-grey streak on base of costa; faintly suffused with fuscous, edge indicated by a rounded black dot below costa before $\frac{1}{4}$, and by a large, irregular, subtriangular black dot in fold obliquely below first dot, lower edge irrorated; central fascia rather narrow, from beyond $\frac{2}{5}$ of costa to $\frac{3}{4}$ of dorsum; this fascia suffused with fuscous-greyish, ill-defined, darkest on dorsum; fascia marked on costa with a subquadrate black patch, excavate below, and above fold with a rounded black patch, projecting anteriorly beyond edge of fascia; costal

patch elongate-triangular, suffused with pale fuscous-greyish, bearing four dark grey small dots along costa, and a dark grey small mark on top; a blackish dot on lower angle of cell, a larger one in tornus; a preterminal series of condy dark grey dots before upper half of termen preceded by greyish retination. Cilia (imperfect) whitish, an antemedian row of blackish dots? Hind wing pale greyish-fuscous, cilia paler, a greyish antemedian line.

Uncus quadrate-diamond-shaped. Socius large. Transtilla knob with a very long median projection, which is dentate along basal half (Slide No. 417 D).

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

***Parachorista verecunda* spec. nov. (fig. 189)**

♂ 14 mm. Head pale fuscous-whitish. Palpus rather long, greyish-fuscous, upper edge of median segment fuscous-whitish. Thorax suffused with greyish-fuscous. Abdomen pale fuscous-whitish. Legs pale fuscous, suffused with darker fuscous-grey above. Fore wing elongate-ovate, dilated, costa with a rather narrow ciliate fold reaching to before middle; costa gradually curved anteriorly, straight posteriorly, apex subacute, termen scarcely convex above, rounded beneath. Pale ochreous-fuscous, slightly irrorated with brownish-fuscous, markings dark fuscous. Base of costa with a suffused blackish longitudinal streak; ill-defined transverse strigulation of minute undulate dark lines in disc at $1/4$; central fascia from costa before middle to dorsum beyond middle; rather narrow, twice interrupted so as to form a suffused transverse streak on costa reaching to upper edge of cell, a round dot just below cell, and a suffused elongate mark on dorsum; costal patch at $3/4$, moderate, subtriangular, oblique: top pointing towards middle of termen, and almost connected by a narrow, curved, oblique line with lower third of termen, thence running to tornus; faint transverse strigulae on end of cell, in tornus, and before apex; a few suffused dots before upper half of termen, and in apex. Cilia pale ochreous. Hind wing pale ochreous, sparsely scaled, towards apex suffused with brownish, and faintly dotted with grey; cilia pale ochreous, turning whitish towards tornus.

Uncus erect-ovate, little dilated. Socius small. Gnathos arms broad. Transtilla knob slender. Aedoeagus without subapical spike (cornuti not perceptible). Slides No. 490 D, holotype, No. 415 D, paratype.

Sigi Camp, 1500 m, February 20, 1939 (holotype). Two specimens. Nearest to *P. anthracographa* spec. nov.

***Parachorista acmemorpha* spec. nov. (figs. 160, 161, 168)**

$\acute{\alpha}\chi\mu\acute{\iota}$ = point, $\mu\omicron\sigma\sigma\eta$ = shape

♀ 15 mm. Head and thorax pale greyish-fuscous, face whitish. Palpus greyish-fuscous, basal segment and base of median segment white, middle of median segment suffused with dark greyish-fuscous, tip of terminal

Male genitalia of *Parachorista* gen. nov. Fig. 162: *oligosta* spec. nov. Fig. 163: *rhopalodes* spec. nov. Fig. 164: *colobodesma* spec. nov. Fig. 165: *anthracograptia* spec. nov. Fig. 166: *anassa* spec. nov. Fig. 167: *trulligera* spec. nov. Fig. 168: *acmemorpha* spec. nov. Fig. 169: *cricophora* spec. nov.

segment whitish. Abdomen light greyish. Legs whitish touched with fuscous, anterior tibia and tarsus dark fuscous-grey, light-ringed. Fore wing narrow, dilated, acutely pointed, costa gradually curved anteriorly, apex acute, termen slightly sinuate, moderately oblique. Whitish, irrorated with greyish-fuscous and blackish-fuscous, markings dark brownish-fuscous. Basal two-fifth of wing transversely obliquely strigulated and irrorated with greyish-fuscous, strigulation accentuated by groups of black scales in disc beyond base, and at $\frac{1}{5}$; a small blackish-fuscous transverse mark on dorsum before middle; central fascia moderately broad, from $\frac{2}{5}$ of costa to $\frac{3}{4}$ of dorsum; dark brownish fuscous, anterior edge faintly projecting below costa; a fuscous-greyish suffusion connecting this fascia with anterior edge of costal patch and extending beyond its top and beyond end of cell, with posterior edge slightly suffused with brownish, below not reaching fold; costal patch elongate-ovate, retinate with dark brownish-fuscous, bearing four dark greyish-fuscous dots along costa; an oblique rather broad blackish-fuscous subterminal streak from termen to below apex, in tornus with a triangular projection reaching to lower angle of greyish-fuscous suffusion above mentioned; upper two-thirds of this streak with three rather broad oblique branches, running almost to posterior edge of costal patch, narrowed above, finely anastomosing with each other; apex suffused with light greyish-fuscous. Cilia whitish, tip touched with greyish, basal half with a row of blackish dots. Hind wing whitish, towards apex faintly touched with pale ochreous, and retinate with pale greyish; cilia whitish, with a pale fuscous antemedian line.

Limen narrow, angulate, dilated before middle and forming a small ovate thickening on each side before ostium, which is funnel-shaped. Colliculum perceptible. Cestum absent. Signum moderately long, little curved, capitulum elongate, slightly clavate, a little curved (Slide No. 429 D, holotype).

♂ 11.5 mm. Palpus rather slender, dark grey, base whitish. Fore wing elongate-ovate, pointed, little dilated, moderately broad, costal fold narrow, ciliated, to beyond $\frac{2}{5}$, costa gradually moderately curved anteriorly, slightly curved posteriorly, apex acute, termen almost straight, considerably oblique. Base of costa with a dark grey streak; upper half of base of wing suffused with dark grey; central fascia and costal patch suffused with dark grey along costa; dark subterminal markings ill-defined.

Tegumen slender, long. Uncus with rounded-ovate top. Socius moderate. Transtilla knob with moderately broad median projection (Slide No. 436 D, allotype).

Mist Camp, 1800 m, January 11, 1939 (holotype, female, allotype, male), December 28, 1938. Two males, one female, males in admaged condition. Distinct by peculiar terminal markings and rather pointed fore wing.

Parachorista anassa spec. nov. (fig. 166)*ἄνασσα* = a princess

♂ 16—19 mm. Head whitish mixed with grey, faee below fuscous. Palpus dark fuscous-grey, median segment mixed with whitish towards apex, basal segment white. Thorax dark fuscous-grey, mixed with white. Abdomen whitish, mixed with dark grey in middle above. Legs greyish-whitish, anterior tibia and tarsus blackish, the latter white-ringed. Fore wing with a moderate costal fold to $\frac{1}{3}$, costa obliquely curved anteriorly, straight posteriorly, apex subaeute, termen straight or faintly convex, little oblique. White, irrorated with greyish-fuscous, markings dark greyish-fuscous, and blackish-fuscous. Basal patch moderate, suffused with fuscous, irrorated and edged with blackish, edge slightly serrate, convex, somewhat projecting above middle; central fascia narrow, from before $\frac{1}{3}$ of costa of middle of dorsum, dark greyish-fuscous, along costa and along anterior edge suffused with blackish; anterior edge tolerably straight, slightly irregularly undulate, posterior edge suffused and obliterate below middle, extended by a light greyish-fuscous irroration to $\frac{3}{4}$ of dorsum; costal patch elongate-triangular, from beyond middle to before apex, dark grey, dotted with blackish, with four blackish-grey dots along costa; a black point on lower angle of cell; an oblique black strigula in tornus; some three oblique small black streaks along termen, sometimes suffused, and ill-defined; apex dark grey. Cilia white, a median row of dark grey dots, a suffused grey patch in tornus. Hind wing pale greyish-fuscous, marbled with darker grey; cilia pale greyish-fuscous, a narrow grey antemedian line.

Uncus erect-diamond-shaped. Soeius large. Transtilla knob large, with a thick stalk (Slide No. 420 D, holotype).

Moss Forest Camp, 2600—2800 m, October 14, 1938 (holotype). Five km northeast of Lake Habbema, 2800 m, October 26—30, 1938. Four specimens. Rather variable. Nearest to *P. anthracographa* spec. nov.

Parachorista cricophora spec. nov. (figs. 169, 183, 184)*κρίκος* = a hook, *φέρω* = to bear

♂ 17 mm. Head light greyish-fuscous. Palpus light greyish-fuscous, median segment suffused with dark fuscous towards base and above, terminal segment fuscous. Thorax fuscous, suffused with light fuscous in middle, tegula edged with light fuscous. Abdomen light greyish. Legs fuscous, light-ringed, posterior leg pale ochreous. Fore wing oblong, costal fold small, to $\frac{2}{5}$; costa curved anteriorly, straight posteriorly, apex subaeute, termen straight, little oblique. Whitish, tinged pale greyish-fuscous, markings greyish-fuscous, and dark fuscous. Costal fold suffused with greyish-fuscous except towards apex, basal fourth of wing slightly suffused with light greyish-fuscous, edge of suffusion slightly angulate in middle, oblique; this edge running from beyond middle of fold to beyond $\frac{1}{3}$ of dorsum; an irroration of dark fuscous scales below middle of disc

before base of wing; central fascia narrow, greyish-fuscous suffused with dark blackish-fuscous, from $\frac{2}{5}$ of costa to dorsum before tornus, dilated on costa, little distinct below it, gradually but strongly dilated below middle; anterior edge of central fascia tolerably straight, serrate in middle, posterior edge much suffused, running along lower edge of cell to its angle, thence to tornus; costal patch elongate-semiovate, anterior extremity rounded, posterior extremity acute, suffused with greyish-fuscous; some three paler dots on patch along costa; a dark blackish-fuscous curved, and suffused streak from top of patch, edging cell posteriorly, with lower half dilated so as to form an oblique semiovate spot; a little curved vertical row of blackish points from termen above tornus almost to costa; a suffused dark greyish-fuscous erect patch along upper half of termen, narrowed below; a dark greyish-fuscous small mark in tornus. Cilia whitish, antemedian row of blackish-fuscous dots along upper half of termen, a dark greyish patch in apex, a blackish one in tornus. Hind wing whitish-greyish, suffused with light fuscous along costal half and terminal edge, a transverse row of three greyish dots before apex; cilia whitish, dotted with greyish opposite apex.

Top of uncus gradually rounded. Socius rather small. Sclerotizations at base of gnathos small, subtriangular, point of gnathos moderate. Transtilla knob with a rather short median projection. Aedoeagus without apical thorn (Slide No. 425 D, holotype).

♀ 17 mm. Head fuscous, edges of vertex, face below and collar whitish. Palpus dark fuscous, lower edge whitish. Thorax deep fuscous-brown, a narrow transverse blackish fascia anteriorly, patagium mixed with whitish. Abdomen greyish-whitish, suffused with dark grey above posteriorly. Legs whitish, anterior tibia and tarsus blackish, latter light-ringed. Fore wing oblong, rather narrow, scarcely dilated, costa arched anteriorly, straight posteriorly, apex subacute, termen sinuate, moderately oblique. Whitish, densely suffused with greyish, fuscous, and light tawny-ochreous, retinate and marked with dark brown. Basal patch moderate, suffused with greyish, slightly irrorated with dark grey; edge of patch narrow, suffused with blackish, strongly angulate in middle, less distinct below fold; an elongate-triangular small patch along base of costa, and a rounded suffused small patch above base of dorsum, dark blackish-fuscous; central fascia from $\frac{1}{3}$ of costa to dorsum beyond middle, moderately broad above, abruptly dilated below middle, suffused with dark fuscous, in middle tawny-ochreous; anterior margin of fascia narrowly marked with blackish-brown, which colour forms about three dots along lower half; this margin rather strongly concave, with lower half serrate (or rather straight), with a small dentation below middle; posterior edge of central fascia suffused and ill-defined, reaching along dorsum to tornus; space between basal patch and central fascia suffused in middle from costa to dorsum with greyish; costal patch ill-defined, elongate-triangular, suffused with grey and striped along veins with dark fuscous-brown; four

dark brown dots on patch along costa, top of patch with a rounded dark brown dot anteriorly, mostly connected with an oblique dark brown streak along end of cell; cell whitish posteriorly; preterminal area sometimes (in allotype) suffused with light brown and fawny-ochreous; dark brown dots, short longitudinal streaks and patches before upper half of termen, sometimes connected so as to form a coarse dark brown retination; tornus with one or two vertical dark brown irregular strigulae, slightly suffused with greyish. Cilia whitish-grey, in tornus and in apex suffused with grey, an antemedian row of black dots. Hind wing whitish, slightly infuscated and dotted with greyish towards apex; cilia similar to those in male.

Limen with semimembraneous dilatations at the sides, curved before middle, middle membraneous, dilated. Ostium shallow, cup-shaped. Colliculum indicated, almost membraneous. Cestum long, narrow, tortuous (three times), in bursa copulatrix dilated, end elongate, narrow. Signum long, sickle-shaped, capitulum rather pointed (Slide No. 421 D, allotype).

Moss Forest Camp, five km northeast of Lake Habbema, 2800 m, October 17, 1939 (allotype, female), October 18, 1938 (holotype, male), October 15—30, 1938. Moss Forest Camp, 2600—2800 m, October 9—November 5, 1938. One male, seven females. A variable species, with central fascia more or less concave anteriorly, in one female specimen obliterate below middle; another female specimen with basal patch white except edge, with a broad black transverse patch from base of costa to middle of basal patch. Nearest to *P. psara* spec. nov.

***Parachorista psara* spec. nov. (figs. 175, 176)**

ψαρός = greyish

♀ 13.5 mm. Head and palpus rather dark greyish-fuscous. Thorax dark greyish-fuscous, tegula paler. Abdomen pale greyish-whitish, towards apex suffused with darker grey. Legs greyish, anterior tibia and tarsus dark fuscous, pale-ringed. Fore wing elongate-ovate, costa gradually eurved anteriorly, slightly curved posteriorly, apex moderately pointed, termen slightly convex, strongly oblique. Whitish, densely marbled with fuscous-grey, markings darker greyish-fuscous and blackish-fuscous. Base of costa with an elongate, rather broad dark greyish-fuscous patch, a small irroration of blackish scales in middle of disc before base; central fascia from beyond $\frac{2}{5}$ of costa to dorsum beyond $\frac{3}{4}$; dark greyish-fuscous, slightly edged with blackish-fuscous; this fascia somewhat extended along costa, almost interrupted and slightly suffused with yellowish above middle; upper part of fascia narrow, lower part much dilated, forming a slightly oblique large erect-quadrate blotch, with a blackish dot on its anterior edge below middle of disc; costal patch moderate, elongate-triangular, dark greyish-fuscous mixed with light grey and blackish-fuscous, top blackish; this patch is almost connected anteriorly with central fascia by a cloudy grey suffusion along costa, posteriorly almost connected with termen by two slightly curved transverse dark greyish-

fuscous streaks, originating from termen above tornus and from middle of termen respectively; a third, smaller similar streak running transversely before apex, from costa to termen; terminal edge suffused with dark greyish-fuscous; a small blackish dot on lower angle of cell. Cilia greyish, an antemedian row of small dark greyish-fuscous dots. Hind wing and cilia whitish, slightly touched with fuscous-ochreous posteriorly.

Limen narrow, at the sides dilated, less curved, in middle obliterate. Ostium a semimembraneous short tube, lower edge excavate. Colliculum moderate, hardly indicated. Cestum little tortuous, running along lower $\frac{1}{3}$ of ductus bursae, and in bursa copulatrix, dilated below, end rounded. Signum narrow, curved, dentate, capitulum rounded (Slide No. 410 D).

Sigi Camp, 1500 m, February 26, 1939. One specimen. Allied to preceding.

***Parachorista lagaroptycha* spec. nov. (figs. 173, 174)**

λαγρός = weak, *πρός* = "line"

♀ 17 mm. Head and thorax dark grey, tuft on vertex with whitish tips of scales. Palpus whitish, median segment mixed with light grey posteriorly, terminal segment mixed with darker grey. Abdomen pale greyish-ochreous. Legs whitish, tinged pale ochreous, anterior and median tibia and tarsus infuscated, light-ringed. Fore wing elongate, little dilated, rather broad, costa gradually curved anteriorly, faintly sinuate posteriorly, apex pointed, termen slightly sinuate, moderately oblique. Light greyish, densely suffused with fuscous-grey, markings blackish-fuscous. Base of costa transversely strigulated with blackish-fuscous; a blackish mark in fold at $\frac{1}{5}$ of wing, posterior edge well-defined, with two dentations, anterior edge indefinite, connected by a dark grey suffusion with base of wing, and with base of dorsum; central fascia moderately broad, from before $\frac{2}{5}$ of costa to $\frac{3}{4}$ of dorsum, dark grey along costal third, blackish-fuscous elsewhere; anterior edge of fascia suffused with blackish, tolerably straight, with an angulate projection at $\frac{3}{4}$, posterior edge indefinite; wing beyond fascia densely suffused with fuscous-grey, retinate with dark fuscous, obscuring edges of costal patch, which is rather large, triangular, marked on costa with four blackish-grey dots, on top with a blackish point; an oblique small blackish mark along lower half of transverse vein, connected by grey suffusion with a curved blackish mark in tornus; an interrupted blackish line from before $\frac{3}{4}$ of termen to top of costal patch; two curved rows of blackish points before apex, posterior row continued along termen to tornus. Cilia greyish-fuscous, a blackish bar in tornus, an interrupted antemedian blackish-fuscous fascia. Hind wing and cilia dirty whitish, slightly infuscated towards apex.

Limen as in preceding. Ostium funnel-shaped, connected with colliculum which is scarcely perceptible. Cestum reduced: a small curved plate in upper part of ductus bursae, and a semiovate, folded body in bursa.

Genitalia of Tortricinae. Fig. 170: *Parachorista euphyes* spec. nov., male. Fig. 171: *P. rhopalodes* spec. nov., female, ovipositor and ostium. Fig. 172: *idem*, ductus bursae and bursa copulatrix. Fig. 173: *P. laguroptycha* spec. nov., female, ovipositor and ductus bursae. Fig. 174: *idem*, bursa copulatrix. Fig. 175: *P. psaru* spec. nov., female, ovipositor and ostium. Fig. 176: *idem*, ductus bursae and bursa copulatrix. Fig. 177: *Heterochorista dispersa* gen. nov., spec. nov., female. Fig. 178: *Parachorista ochra* spec. nov., male. Fig. 179: *P. lutescens* spec. nov., female, ovipositor and ostium. Fig. 180: *idem*, signum. Fig. 181: *P. stenoptera* spec. nov., female, ovipositor and ostium. Fig. 182: *idem*, ductus bursae and bursa copulatrix. Fig. 183: *P. ericophora* spec. nov., female, ovipositor and ostium. Fig. 184: *idem*, ductus bursae and bursa copulatrix. Fig. 185: *Isochorista papuana* spec. nov., female.

Signum rather long, less curved than in preceding species, capitulum more rounded (Slide No. 422 D).

Moss Forest Camp, five km northeast of Lake Habbema, 2800 m, October 17, 1938. One specimen.

***Parachorista stenoptera* spec. nov. (figs. 181, 182)**

στενός = narrow, *πτερόν* = a wing

♀ 17 mm. Head grey, face paler, vertex and collar suffused with dark fuscous. Palpus whitish, posterior half suffused with grey. Abdomen pale greyish-whitish. Legs whitish, anterior and median suffused with dark grey above, white-ringed. Fore wing elongate, not dilated, narrow, costa gradually moderately curved anteriorly, slightly sinuate posteriorly, apex pointed, termen distinctly sinuate, little oblique. Greyish-whitish, suffused with grey along costa and termen, markings fuscous-grey and blackish-fuscous. Base of wing white; basal patch large, evenly suffused with rather dark fuscous-grey, anterior edge with a blackish patch on costa, slightly mixed with blackish scales in middle of disc, posterior edge oblique, to $\frac{2}{5}$ of dorsum, with a suffused dot above middle, and a small triangular mark on dorsum blackish-fuscous; central fascia narrow, from $\frac{1}{3}$ of costa to $\frac{3}{5}$ of dorsum, dark greyish-fuscous, lower half slightly dilated; anterior margin of fascia with upper half straight, lower half less oblique, considerably serrate, and edged with a blackish-fuscous zig-zag streak which is dilated on dorsum; posterior margin of fascia little suffused, slightly convex; costal patch narrow, elongate-triangular, greyish, with four dark fuscous dots along costa, and one in top; termen suffused with grey, sometimes also with fulvous, in holotype with short blackish streaks on veins; a greyish transverse blotch before apex. Cilia light grey, an interrupted antemedian blackish fascia. Hind wing with termen considerably sinuate above; whitish. Cilia whitish.

Limen rather broad, perceptible throughout (i.e., also in middle), inner edge semimembraneous, dilated. Ostium rounded-cup-shaped. Colliculum separate, small. Cestum short, dilated in bursa, end blunt. Signum narrow, sickle-shaped, capitulum rather long, conical (Slide No. 423 D, holotype).

Moss Forest Camp, five km northeast of Lake Habbema, 2800 m, October 16, 1938 (holotype), October 17—19, 1938. Three specimens. Nearest to *P. cricophora* spec. nov.

***Parachorista ochra* new species (fig. 178)**

ὄχρος = pale

♂ 12 mm. Head greyish-fuscous. Palpus greyish-fuscous, basal segment and base of terminal whitish. Thorax greyish-fuscous. Abdomen light grey. Legs whitish, anterior greyish-fuscous above, light-ringed. Fore wing elongate-ovate, pointed, with a rather broad costal fold, broadest at $\frac{1}{3}$, edge ciliate, costa gradually curved anteriorly, straight posteriorly, apex pointed, termen slightly sinuate above, obliquely rounded below, oblique.

Whitish, irrorated with greyish-fuscous, markings greyish-fuscous. Basal patch indicated by a somewhat denser greyish-fuscous irroration at base of wing, less extended below; costal fold with an elongate patch at $\frac{1}{3}$, and a smaller one before apex: dark greyish-fuscous; a suffused transverse streak from dorsum before tornus towards second costal patch, dark fuscous on dorsum, obliterate in middle of disc; costal patch elongate-triangular, extending from beyond middle of costa to shortly before apex, fuscous-greyish, with four dots along costa, and with top suffused with darker fuscous; tornus suffused with dark greyish-fuscous; apical fourth of wing transversely strigulated with fuscous-grey, irregular ill-defined oblique strigulae; a mark of greyish-fuscous suffusion in disc above tornus. Cilia (imperfect) whitish, with an antemedian row of dark grey dots. Hind wing and cilia whitish.

Uncus elongate-ovate (in mount not quite flattened out!). Socius small. Gnathos short. Transtilla knob short-dentate, median projection long. Aedoeagus without terminal thorn (Slide No. 426 D).

Top Camp, 2100 m, January 22, 1939. One specimen. Distinct by small size, pointed wing and reduced markings. Nearest to *P. euphyes* spec. nov.

***Parachorista euphyes* spec. nov. (fig. 170)**

εὐφύης = slender

♂ 16 mm. Head, palpus and thorax light grey tinged ochreous, tegula suffused with fulvous anteriorly. Abdomen pale greyish-whitish. Legs whitish, anterior and median tibia and tarsus suffused with grey above, light-ringed. Fore wing elongate, rather broad, costal fold narrow, to $\frac{1}{3}$, much dilated by long cilia, costa gradually curved anteriorly, scarcely curved posteriorly, apex pointed, termen hardly concave above, little oblique. Whitish irrorated with pale fuscous-greyish, dotted with blackish-fuscous, markings blackish-fuscous, partially slightly suffused with fulvous-ochreous. Base of costa with a short streak and a small patch beyond this: dark greyish-fuscous; basal patch with upper half slightly suffused with greyish, and faintly suffused with fulvous-ochreous, furthermore indicated by three angulate transverse tolerably parallel dark fuscous lines, posterior one from before $\frac{1}{4}$ of costa, running obliquely to above middle of disc, thence vertical, to $\frac{1}{3}$ of dorsum; central fascia indicated by a rather narrow oblique transverse streak beyond $\frac{1}{3}$ of costa, pale greyish-fuscous, finely edged with dark fuscous, and anteriorly slightly edged with fulvous-ochreous; a dark grey streak along costa; this streak reaches $\frac{2}{5}$ across wing and is connected by faint ochreous suffusion with a suffused slightly oblique blackish-fuscous mark below cell before middle of wing; a faint greyish-fuscous triangular suffusion on $\frac{3}{4}$ of dorsum; costal patch ill-defined, pale greyish, elongate-triangular, marked with four dark fuscous points along costa, and with a blackish-fuscous elongate dot on top; a dark point on lower angle of cell, an oblique row of dark fuscous points from dorsum before tornus, tolerably parallel with termen, to middle of wing; two curved, ill-defined series of such points from termen

above middle, and below apex, respectively, not reaching costal patch; a faint greyish slightly curved suffusion from tornus to lower angle of cell. Cilia pale fuscous-greyish, basal third white, edged by an antemedian row of dark fuscous dots. Hind wing pale greyish, somewhat darker towards apex and costa; cilia whitish.

Uncus elongate-ovate. Socius very large. Transtilla knob with a small median projection. Aedocagus without terminal thorn (Slide No. 424 D).

Moss Forest Camp, 2600—2800 m, October 9—November 5, 1938. One specimen. Nearest to *P. cricophora* spec. nov.

***Parachorista trulligera* spec. nov. (fig. 167)**

♂ 19 mm. Head dirty-whitish, a median streak on vertex and face, dark fuscous. Palpus grey. Thorax light grey, centre dark fuscous, apex whitish. Abdomen grey. Legs pale ochreous, anterior dark fuscous above. Fore wing oblong, slightly dilated; with a narrow costal fold to $\frac{2}{5}$, which is strongly dilated beyond base by long roughish marginal cilia; costa strongly curved anteriorly, straight posteriorly, apex subacute, termen slightly concave above, rounded beneath, moderately oblique. Sordid creamy-whitish, partially tinged light fuscous-ochreous, densely suffused with fuscous, dark grey, and blackish. Base of costa with a narrow dark grey streak, followed by a suffused blackish-grey mark at $\frac{1}{3}$ of costa; basal patch large, suffused with dark blackish-grey, broadly edged posteriorly with blackish-fuscous; this edge running from the above mentioned costal mark to above dorsum, dark grey below, strongly indent on fold, straight, inwardly oblique above fold, much outwardly oblique below this; (paratype: with patch at $\frac{1}{3}$ of costa erect-triangular, dark grey edged black, connected by an outwardly oblique small line with middle of disc; basal patch represented by a vertical slightly curved blackish-fuscous streak on costa beyond base, reaching $\frac{3}{4}$ across wing, followed in disc by a rounded-diamond-shaped blackish patch, reaching to beyond $\frac{1}{4}$ of disc); central fascia indicated by a narrow dark fuscous faintly outwardly curved line from costal patch at $\frac{1}{3}$ to beyond middle of dorsum, dilated by a triangular fuscous suffusion along lower $\frac{1}{3}$; ground colour between this and basal patch forming a conspicuous creamy-whitish triangle, slightly irrorated with fuscous; wing beyond central line evenly densely suffused with fuscous, a dot on end of cell and a row of suffused small dots from apex to tornus, blackish; costal patch indicated by some four cloudy dark grey dots along costa posteriorly, and by a blackish-fuscous irregular dot below costa before $\frac{3}{4}$; cell posteriorly suffused with whitish; a round patch of greyish suffusion above tornus, preceded by a spot of ground colour; (paratype: costal patch suffused with grey; a distinct white spot on middle and one on end of cell). Cilia dark grey, base white, an interrupted dark fuscous antemedian line. Hind wing pale greyish-fuscous, paler towards dorsum, cilia concolorous, a whitish basal line.

Uncus rounded. Gnathos arms rounded. Socius elongate, moderately

long, drooping. Transtilla knob with a short median projection (Slide No. 427 D, holotype).

Moss Forest Camp, 2600—2800 m, October 9—November 5, 1938 (holotype); five km northeast of Lake Habbema, 2800 m, October 13, 1938. Two specimens. Allied to *P. basalis* (DIAKONOFF).

***Parachorista basalis* combin. nov.**

Isotenes basalis DIAKONOFF, 1941, Treubia, vol. 18, pp. 32—33, pl. 1, fig. 2 (gen. ♂).

Distribution: Northeast New Guinea, Hunsteinspitze, 1350 m.

Rattan Camp, 1200 m, February 12, 1939 (Slide No. 388 D). Iebèlè Camp, 2250 m, November 7, 1938. Two males. Now the genus *Isotenes* becomes better known, we are satisfied that the present species must be transferred to the genus *Parachorista*; it is nearest to the preceding species.

***Parachorista anisographa* spec. nov. (fig. 196)**

ἀνίστος = unequal, *γράφω* = to draw

♂ 19 mm. Head white, face with a median longitudinal fuscous fascia. Palpus white, densely suffused with dark fuscous except upper edge of median segment. Thorax white, densely mixed with blackish-fuscous, a subapical white band. Abdomen grey. Legs greyish-whitish, anterior and median tibia and tarsus infuscated, white-ringed. Fore wing elongate-ovate, broadest in middle, costal fold broad, elongate-semioval, reaching to beyond middle; costa obliquely curved anteriorly, slightly curved posteriorly, apex subrectangular, termen gently rounded, hardly oblique. White, densely irrorated with greyish fuscous, markings suffused dark brown and ferruginous-fuscous. Basal patch to $\frac{1}{4}$, densely suffused with blackish-fuscous on costal fold, densely irrorated with the same colour, and with blackish below fold; outer edge of patch little oblique above, with a projecting group of black scales above middle, very oblique below, to $\frac{2}{3}$ of dorsum; central fascia moderate, formed by a semicircular ferruginous-fuscous dot before middle of costa, and by a sinuate blackish-fuscous fascia from below this to dorsum before tornus, with upper half strongly outwardly curved, lower half of fascia straight, oblique; costal patch rather narrow, elongate-triangular, from beyond middle to before apex, dark grey mixed with black, with two whitish dots on costa; top of patch continued anteriorly by an ill-defined dark grey suffusion to lower angle of cell; irregular dark grey suffusion along termen marked with interneural groups of jet-black scales; posterior half of wing denser irrorated with grey. Cilia white, a subbasal row of blotches and a patch on dorsum, dark grey. Hind wing and cilia whitish, tinged pale fuscous.

Uncus rather broad, top slightly narrowed. Socius small, pending. Gnathos robust. Transtilla knob slender, median projection long, narrow. Vinculum broad. Aedoeagus with a terminal thorn (Slide No. 380 D).

Top Camp, 2100 m, February 3, 1939. One specimen. Allied to *P. basalis* (DIAKONOFF).

***Parachorista lutescens* spec. nov. (figs. 179, 180)**

♀ 14 mm. Head, palpus and thorax pale yellowish-whitish, median segment of palpus slightly infuscated. Antenna pale ochreous ringed with fuscous, scape fuscous. Abdomen whitish, slightly tinged with greyish before apex above, preanal segment black below. Legs pale whitish-ochreous, anterior and median tibia infuscated. Fore wing elongate-ovate, pointed, costa moderately curved anteriorly, little curved posteriorly, apex rather pointed, termen scarcely sinuate, considerably oblique. Pale whitish-yellowish, markings light yellowish-ochreous, slightly suffused with tawny. Costa marked throughout with small longitudinal blackish streaks; a rather broad, suffused oblique patch on costa beyond base, reaching to middle of disc, anterior edge rather distinct, tolerably straight; central fascia rather broad, from costa before middle to dorsum before tornus, yellowish-ochreous, slightly suffused with fuscous; upper third of this fascia oblique, with tolerably parallel edges, two small dark brown dots on costa; middle part of fascia dilated, and more suffused with fuscous, in middle of disc with an excavation anteriorly, and an angulate projection posteriorly, each with a small dark brown transverse marginal mark; lower third of central fascia somewhat more dilated, anterior edge concave, posterior edge rounded; a dark brown short streak along costa beyond central fascia, with a narrow ochreous-yellowish strigula parallel to that fascia, ending on top of its posterior projection; costal patch moderate, semioval, with three dark brown short streaks along costa, separated by two rounded spots of ground colour; top of patch connected with middle of a moderate semioval spot before middle of termen; this spot connected by less distinct ochreous-yellowish preterminal transverse strigulation with apex and tornus; a few dark brown scales scattered in middle of disc on edges of markings; a series of small dark brown dots along dorsum. Cilia pale whitish-yellowish. Hind wing whitish, touched with yellowish, faintly dotted with greyish before apex. Cilia whitish.

Limen narrow, in middle almost transparent. Ostium moderate, cup-shaped, lower edge indent. Colliculum narrow, moderately long, dilated towards extremities. Cestum absent. Ductus bursae long, narrow. Signum rather short, dagger-shaped, capitulum rounded, showing retinate structure. Ovipositor lobe slender, elongate (Slide No. 468 D).

Top Camp, 2100 m, January 25, 1939. One specimen. Little related to other species, distinct by yellowish tinge, and distinctly separate veins 3 and 4 in hind wing.

***Heterochorista* gen. nov. (fig. 186)**

Head with appressed scales, vertex somewhat rougher scaled. Ocellus posterior. Proboscis moderate. Antenna minutely ciliated in female. Palpus moderately long, subascending, dilated in middle with roughly projecting scales above and beneath, terminal segment moderately long, roughish.

Thorax smooth. Fore wing without raised scale-tufts, elongate-ovate, pointed, termen oblique. Vein 2 from $\frac{3}{5}$, 3 from angle, 3—5 separate, equidistant, 7 and 8 long-stalked, 7 to termen, 11 from before middle. Hind wing without cubital pecten, a long brush of hairs on base of vein 1a above, 2 from $\frac{2}{3}$, 3 from angle, 4 absent, 5 approximated at base, 6 and 7 stalked, 7 to apex, closing vein angulate.

Fig. 186: *Heterochorista dispersa* gen. nov., spec. nov., female, wing neuration and head.

Typus generis *Heterochorista dispersa* spec. nov., female.

A development of *Isochorista* MEYRICK, 1881. Differs from *Lamyrodes* MEYRICK, 1910 by dilated palpus, with terminal segment exposed, and by stalked veins 6 and 7 in hind wing.

***Heterochorista dispersa* spec. nov. (figs. 177, 186)**

♀ 18 mm. Head and thorax pale golden-ochreous, tegula dark fuscous-grey. Palpus light ochreous, densely irrorated with dark fuscous-grey, median segment suffused with blackish-fuscous towards apex below. Antenna ochreous, ringed and mixed with dark fuscous. Abdomen ochreous-greyish, suffused with darker grey before apex, anal tuft golden-ochreous, basal segment whitish. Legs light ochreous, anterior tibia and tarsus infuscated, light-ringed. Fore wing ovate-pointed, moderately broad, broadest in middle; costa strongly curved anteriorly, distinctly curved posteriorly, apex acute, almost falcate, termen sinuate, much oblique. Light ochreous-brownish, tinged with golden, anterior $\frac{2}{3}$ dotted, and densely suffused with dark fuscous-grey; edge of this suffusion ill-defined, regularly concave, from costa just before apex to $\frac{2}{3}$ of dorsum; some dotting of ground colour along and below costa, especially at $\frac{4}{5}$; an indication of a large blackish spot below costa beyond base of wing; a curved broad subterminal fascia from costa before apex to tornus, greyish-

fuscous, with both edges dotted with blackish and serrate; this fascia followed by a pair of grey preterminal transverse strigulae; terminal edge grey; dorsum suffused with dark greyish-fuscous. Cilia pale fulvous-ochreous, mixed with dark grey, an antemedian line, and a patch in tornus, dark grey. Hind wing pale ochreous, somewhat suffused with brownish towards apex, faintly marbled with fuscous. Cilia pale whitish-ochreous.

Limen broad, upper margin twice excavate, lower margin with rounded angles. Ostium funnel-shaped. Colliculum moderate, rather narrow. Ductus bursae moderately long, coiled, cestum absent. Signum narrow, curved, acute; capitulum, a rounded plate (Slide No. 465 D).

Moss Forest Camp, five km northeast of Lake Habbema, 2800 m, October 17, 1938. One specimen.

Isochorista MEYRICK, 1881

Isochorista MEYRICK, 1881, Proc. Linn. Soc. N.S. Wales, vol. 6, p. 424; *ibidem*, vol. 35, p. 165, 1910. Lepid. Catal., fasc. 10, p. 1, 1910. Gener. Ins., fasc. 149, p. 8, 1913. FERNALD, Gener. Tortr. Typ., pp. 42, 60, 1908. FLETCHER, Mem. Agr. Ind., Ent., vol. 11, p. 119, 1929. DLAKONOFF, Zool. Meded. Mus. Leiden, vol. 121, pp. 119, 186—188, figs. 5G (head), F (neur.), 6A—D (gen. ♂), 7J—K (gen. ♀).

Key to the Papuan species of *Isochorista*

1. Basal patch and costal patch well-defined, dark fuscous . . . *sulcata* spec. nov.
Basal patch, if defined, only on costal half, costal patch rather indefinite, or absent 2
2. Costal half of wing with discernible markings *polysperma* spec. nov.
Markings altogether absent *papuana* spec. nov.

Isochorista papuana spec. nov. (fig. 185)

♀ 19 mm. Head and palpus dark fuscous, Antenna whitish, ringed with dark fuscous. Thorax fuscous ? (damaged). Abdomen ochreous-grey, anal tuft pale ochreous. Legs ochreous-fuscous, tarsi pale-ringed, posterior pale ochreous. Fore wing elongate-subovate, moderately broad, costa strongly curved anteriorly, straight posteriorly, apex rather acute, slightly projecting, termen concave above, rounded beneath, considerably oblique. Evenly light greyish-fuscous, somewhat darker along costa posteriorly, scattered with a few blackish scales in disc; cilia pale greyish-ochreous. Hind wing pale greyish, paler towards base, sparsely dotted with darker grey towards apex, cilia pale greyish, a darker antemedian shade, becoming broader and more distinct along dorsum.

Limen rather broad, lower edge gradually rounded, upper edge excavate in middle, minutely ciliate. Colliculum small (in figure visible inside ostium). Ductus bursae short, bursa copulatrix elongate. Signum little curved, slender, acute (Slide No. 455 D).

Baliem Camp, 1700 m, November 16—27, 1938. One specimen. Somewhat damaged, but sufficiently defined by the genitalia. This and the following two species are the first representatives of the genus that become known outside Australia.

Isochorista sulcata spec. nov.

♂ 16 mm. Head pale ochreous. Palpus dark grey, extreme tip pale ochreous. Antenna pale greyish, dark-ringed, scape pale ochreous. Thorax pale ochreous, spotted with dark grey, shoulder more suffused with dark grey. (Abdomen missing). Legs dark fuscous, posterior pale ochreous, tibiae faintly pale-ringed. Fore wing elongate-triangular, dilated, costal fold strong, moderately broad, with a deep submedian furrow throughout, posterior third of lower edge ciliate; costa moderately curved throughout, apex somewhat projecting, obtusely pointed, termen slightly concave above, obliquely rounded beneath, rather oblique. Whitish-ochreous, scattered with dark fuscous and brownish scales, markings dark fuscous. Base of wing and of costa suffused with dark fuscous; base of dorsum with a large rounded-ovate patch of long dark grey scales, originating from edge of wing, and pressed against wing surface; this patch reaching halfway across disc, suffused posteriorly with fuscous; edge of this suffusion straight, from below fold at $\frac{1}{3}$ of wing to $\frac{1}{4}$ of dorsum; costal fold along edge of costa suffused with fulvous-brown, dotted with dark fuscous, posterior fourth suffused with dark greyish-fuscous; costal patch large, slightly oblique, elongate-triangular, from beyond middle of costa to before apex, reaching below almost to vein 5, blackish-fuscous, mixed with chestnut-brown, three pale ochreous dots along costa; top of costal patch connected by an oblique narrow greyish-brownish striga with tornus; posterior fourth of wing transversely strigulated with rather ill-defined narrow greyish and brownish lines, running parallel to the latter strigula. Cilia rather bright ochreous, mixed with brown scales along middle, pale towards tornus. Hind wing pale fuscous, densely marbled with darker fuscous, cilia greyish-ochreous.

Moss Forest Camp, five km northeast of Lake Habbema, 2800 m, October 15, 1938. One specimen, unfortunately lacking the abdomen, but sufficiently defined by dorsal patch of scales and by the peculiar shape of costal fold in fore wing.

Isochorista polysperma spec. nov.

πολύ = many, *σπέρμα* = a seed

♀ 12.5 mm. Head, palpus, thorax and antenna ochreous-grey, antenna dark-ringed, palpus suffused and irrorated with blackish (Abdomen missing). Legs ochreous-greyish, anterior and median much infuscated, tarsi light-ringed. Fore wing elongate-subovate, rather narrow, costa strongly curved anteriorly, straight in middle, slightly curved before apex, apex rounded, somewhat projecting, termen sinuate, rather oblique. Pale greyish-ochreous, faintly irrorated with light brown, suffused with grey, marked with dark brown scales. Basal patch indicated by a small triangular grey spot on base of costa, with lower edge horizontal, and by a small greyish suffusion on base of dorsum; central fascia ill-defined, formed by a narrow oblique transverse fascia on $\frac{1}{4}$ of costa reaching to

middle of disc, with a few dark brown scales along its edges in disc, along cell as far as discoidal vein abruptly dilated by a dark grey suffusion, almost connected by a faint somewhat brighter ochreous-brownish irroration with posterior half of dorsum, and with tornus; costal patch ill-defined, formed by a tawny-grey streak from before middle of costa to apex, with lower edge concave anteriorly, indefinite posteriorly; top of patch undulate, reaching almost to vein 6 beyond base; markings along costa dotted with cloudy dark grey spots; a semicircular row of dark brown points beyond and around upper angle of cell extending from vein 11 to vein 5, one point on angle of cell; another row of similar points straight, slightly oblique, from tornus to vein 6 beyond middle; tornus and termen suffused with greyish, terminal edge with a dark brownish-grey line; dorsal edge dotted with dark grey. Cilia pale ochreous with an antemedian row of dark brown small dots, in tornus dark grey. Hind wing pale greyish, faintly dotted with darker grey. Cilia whitish-greyish, with an interrupted antemedian shade.

Baliem Camp, 1600 m, December 12, 1938. One specimen.

Thrinophora MEYRICK, 1881

Thrinophora MEYRICK, 1881, Proc. Linn. Soc. N.S. Wales, vol. 6, p. 431, 1881; *ibidem*, vol. 35, p. 171, 1910. FERNALD, Gen. Tortr. Typ., pp. 42, 60, 1908. FLETCHER, Mem. Agr. Ind., Ent., vol. 11, p. 221, 1929. DIAKONOFF, Zool. Meded. Mus. Leiden., vol. 21, pp. 174–175, figs. 4E (head), 4D (neur.), 6I (gen. ♂), 1939.

Acropolitis MEYRICK, Proc. Linn. Soc. N.S. Wales, vol. 6, p. 432, 1881; *ibidem*, vol. 35, p. 171, 1910. Lepid. Catal., fasc. 10, p. 4, 1912. Gener. Ins., fasc. 149, p. 9, 1913. FERNALD, Gen. Tortr. Typ., pp. 42, 60, 1908. FLETCHER, Mem. Agr. Ind., Ent., vol. 11, p. 5, 1929.

In 1910 MEYRICK recorded thirteen species of "*Acropolitis*" from Australia and Tasmania, to which five species have been added by TURNER afterwards. A single Papuan species has been described by MEYRICK much later, but it was placed in the genus *Anisochorista*. At present three new species from New Guinea are added.

All the Papuan species possess the following features: veins 6 and 7 in hind wing stalked, stalk $\frac{1}{2}$, slightly curved, veins 4 and 5 connate, sometimes stalked (this feature is not recorded of the Australian species); white discal spot more or less conspicuous, cilia white, barred entirely or on basal half with greyish or brownish. The double posterior thoracic crest is a feature of little practical value for the characterisation of this genus, as it disappears even in slightly worn specimens.

Tegumen broad, short, narrowed above. Uncus small, curved, top cuspidate, bristled below. Socius rather small or moderate, pending. Gnathos small, arms narrow, hook short. Valva broad at base, narrowed posteriorly, a patch of long bristles in disc towards base, costa distinct, cucullus moderate, separated, sacculus broad, rectangular, little sclerotized. Transtilla complete, lateral knobs strong, with a series of heavy

thorns above, anellus erect, bristled, vinculum, a slender ring. Aedocagus large, sinuate, cornuti a sheaf of spines, and a huge thorn with dilated base.

Ovipositor lobes rather narrow. Limen a broad, little sclerotized band. Colliculum strong, long, with a split in dorsal wall. Ductus bursae moderately long, wide, strongly flattened, cestum a moderately sclerotized, strongly flattened tube. Signum very strong; possibly it is formed by the blade of the usual cacoeciine type of signum but without the capitulum, fused together with a strongly folded terminal plate of the cestum. Bursa copulatrix moderate, subspheroid.

Key to the Papuan species of *Thrinophora*

1. Males 2
Females 4
2. Dot on upper angle of cell small, mostly conspicuous, pure white; if this dot connected with tornus, then this connection darker coloured than dot itself *archboldi* spec. nov.
Spot on upper angle of cell large, not purely white, connected with costa and termen, these connections of the same colour as spot, not darker 3
3. Spot on upper angle of cell moderate, smaller than patch of ground colour which connects this spot with tornus; basal area suffused with fuscous, darker than tornal area *leucotorna* spec. nov.,
Spot on upper angle of cell large, almost as broad as patch connecting this with tornus; basal area less suffused, not noticeably darker than tornal area. *ostracopsis* MEYRICK
4. Hind wing with apical half distinctly retinate with greyish-fuscous, but not suffused with light fuscous-brownish; large species: 32–35 mm *archboldi* spec. nov.
Hind wing faintly retinate on apical half, this retination obscured by a distinct fuscous-brownish suffusion, extending almost to base of wing; smaller species: 27–29 mm. 5
5. Dark markings in disc dark grey and blackish, much contrasting with whitish ground colour. *leucotorna* spec. nov.
Dark markings in disc grey (except blackish suffusion below spot on end of cell), little contrasting with greyish ground colour *nebulosa* spec. nov.

Thrinophora archboldi spec. nov. (figs. 187, 192, 193)

♂ 26–28 mm. Head with vertex whitish mixed with dark greyish-fuscous, face dark fuscous-grey, lower third white. Palpus dark greyish-fuscous, median segment mixed with white scales, especially towards apex, terminal segment more mixed with white. Antenna dark brown, finely ringed with light ochreous, cilia light ochreous, scape dark fuscous. Thorax dark fuscous, or whitish-fuscous, with more or less distinct suffused lateral white spots anteriorly, posterior half white, tegula deep ferruginous. Abdomen whitish, infuscated posteriorly, clothed with rough long scales, anal tuft white. Legs ochreous, suffused with fuscous above, except on articulations, anterior tibia and tarsus dark ferruginous-fulvous, the latter white-ringed. Fore wing elongate-triangular, costa moderately curved throughout, apex rounded, termen straight, and almost vertical above, rounded beneath. Greyish-whitish, suffused with

greyish-fuscos and retinate with deep ferruginous, markings extended, rather dark greyish-fuscos, partially suffused with blackish. Basal patch densely suffused with blackish-fuscos, obliquely-ovate; its edge running very obliquely from about $\frac{1}{8}$ of costa to fold beyond $\frac{1}{4}$ of wing, obtusely angulate there, thence to before $\frac{1}{4}$ of dorsum, suffused with black posteriorly, base of dorsum with a narrow white streak; fold of wing suffused with black throughout; transverse fascia from $\frac{2}{5}$ of costa to $\frac{3}{5}$ of dorsum, with an angulate projection on middle of anterior edge, and a rectangular projection above middle of posterior margin, slightly dilated on costa; edges of fascia well-defined except on and above dorsum; a horizontal suffused black streak above middle of fascia; this streak followed by a moderate, rounded snow-white dot, narrowly edged with blackish suffusion below; this dot situated before $\frac{2}{3}$ of wing, above middle of disc; costal patch extending over more than $\frac{1}{3}$ of costa, almost reaching apex, with acute top reaching tornus, anterior edge of patch with an indentation above middle; costal patch followed by a blackish undulate projection almost touching white discal dot, oblique and hardly concave below; posterior edge of this projection strongly sinuate, and with a deep excavation above middle, convex below, edged and finely dentate on veins by ferruginous retination above mentioned, ending in a minute black streak in tornus; an erect-semioval or subtriangular spot on upper half of termen, suffused with blackish between veins; costa with some ten tolerably equidistant pairs of suffused whitish marks, alternating with suffused blackish dots; dorsum with a row of suffused blackish dots; terminal edge with a minute ferruginous-blackish line, which is interrupted in tornus so as to form a series of black points. Cilia white, barred with fuscous, basal half dark fuscous, extreme base lighter, entirely white in apex (one paratype more suffused with greyish-fuscos, making separation between basal area, transverse fascia, and apical patch less distinct).

Tegumen rounded. Uncus cuspidate. Socius moderate, semioval. Transtilla knob with strongly narrowed base. Sacculus almost rectangular (Slide No. 455 D, holotype).

♀ 32—35 mm. Median and terminal segments of palpus white mixed with dark fuscous scales, and with a suffused basal, and a broader subapical transverse band. Thorax whitish, mixed and anteriorly more or less suffused with greyish-fuscos. Abdomen more infuscated posteriorly, fringe of segments white. Fore wing less dilated than in male, termen sinuate and vertical above, broadly rounded, and slightly prominent below. Lighter than male, markings being less extended, ground colour scarcely suffused with greyish, and instead of ferruginous retination regularly covered with rounded dots and short transverse blotches, ferruginous or blackish-brown. Markings in allotype: basal area forming an oblique streak from base of costa to below fold beyond $\frac{1}{4}$ of wing, suffused with blackish below, anterior edge zig-zag; transverse fascia formed by a moderate obliquely-ovate spot on $\frac{2}{5}$ of costa, scarcely con-

Genitalia of Tortricinae. Fig. 187: *Thrincophora archboldi* spec. nov., male. Fig. 188: *T. leucotorna* spec. nov., male. Fig. 189: *Parachorista verecunda* spec. nov., male. Fig. 190: *Thrincophora leucotorna* spec. nov., female, ovipositor and ostium. Fig. 191: *idem*, ductus bursae and bursa copulatrix. Fig. 192: *T. archboldi* spec. nov., female, ovipositor and ostium. Fig. 193: *idem*, ductus bursae and bursa copulatrix. Fig. 194: *Anisotenes acrodasys* spec. nov., ostium. Fig. 195: *idem*, signum. Fig. 196: *Parachorista anisographa* spec. nov., male. Fig. 197: *Thrincophora nebulosa* spec. nov., female.

nected with a large irregular marking in middle of disc which is connected by a straight, oblique fascia with $\frac{3}{5}$ of dorsum; this marking is rounded above, enclosing an elongate-ovate horizontal spot of ground colour above middle of disc, and edged at the sides and below with black suffusion; besides, this marking with two irregular projections anteriorly: one at top and one below middle, and with a third projection posteriorly in middle of disc which edges the white discal dot from below; the latter less conspicuous than in male; a suffused black dot on middle of costa; costal and terminal patches as in male, the former suffused with whitish above middle posteriorly, the latter continued along termen to above tornus; terminal line indistinct; white costal marks alternating with ferruginous spots. Cilia white, irrorated and barred along basal two-thirds with fuscous-blackish. Hind wing white, apical fourth coarsely retinate with pale greyish. Cilia white with a median series of pale fuscous dots along apical third of wing (Two specimens marked rather dark brown instead of ferruginous, and leaden-grey instead of greyish-ferruginous, one of these specimens densely irrorated and obscured, with markings indistinct; another specimen much lighter, dotted with blackish and leaden grey throughout, spot of ground colour in transverse fascia obliquely rounded instead of elongate-ovate; in both specimens discal white dot larger and more conspicuous than in allotype).

Colliculum long, strong. Cestum long. Signum with point broad, moderately long, regularly curved (Slide No. 454 D, allotype).

Moss Forest Camp, 2800 m, October 9—November 5, 1938 (allotype, female). Lake Habbema, 3250—3300 m, August 27, 1938. Five km north-east of Lake Habbema, 2800 m, October 25, 1938 (holotype, male). Five males, four females.

This large and distinct species is dedicated to the leader of the Expedition, Mr RICHARD ARCHBOLD.

***Thrincophora ostracopis* (MEYRICK, 1938)**

Anisochorista ostracopis MEYRICK, 1938, Trans. Entom. Soc. Lond., vol. 87, p. 505.

Thrincophora ostracopis, DIAKONOFF, Zool. Meded. Mus. Leiden, vol. 21, p. 147, figs. 4E (head), 4D (neur.), 6J (gen. ♂), 1939.

Distribution: British New Guinea: Papua, Western District, Mafulu 4000 feet. Northwest New Guinea: Hunsteinspitze, 1350 m.

Rattan Camp, 1200 m, February 19, 1939. One male. Hind wing with veins 6 and 7 stalked, veins 4 and 5 short-stalked, 3 from angle. Distinct by coarse markings, long costal fold to beyond middle of costa, and light ochreous-greyish, unicolorous hind wing.

***Thrincophora leucotorna* spec. nov. (figs. 188, 190, 191)**

λευκός = white, *τορνός* = tornus

♂ 22—26 mm. Head and thorax fuscous-grey mixed with white. Antenna fuscous-grey, faintly ringed with white. Palpus blackish, median segment

suffused with white laterally, white towards apex above, terminal segment blackish mixed with white, tip white. Abdomen ochreous-greyish, suffused with darker grey above posteriorly, anal tuft greyish and white. Legs pale ochreous, femora dark grey above, tarsi dark fuscous above, both ringed with white. Fore wing elongate-subtriangular, dilated, rather broad, costa gradually moderately curved throughout, apex rounded, termen straight, almost vertical. White, suffused and retinate with fuscous-grey, slightly sprinkled with light fuscous, markings darker fuscous-grey, partially edged, and dotted with black. Basal patch ill-defined, moderate, edge almost vertical, strongly angulate in middle, top of angulation connected with a quadrate discal blackish patch just above fold, fuscous-grey marbled with white and blackish, narrowly edged with black; transverse fascia broad, oblique, from costa before middle towards dorsum before tornus; dark fuscous-grey, retinate with blackish, obliterate below fold; anterior margin of fascia slightly sinuate, with a small angulation below middle, mostly this margin rather indistinct; posterior margin well-defined, twice excavate, edged with blackish, forming a narrow horizontal blackish streak in middle of disc; a rounded conspicuous spot of white ground colour above middle of disc; this spot strongly excavate below this streak, excavation filled with slight fulvous-greyish suffusion; basal half of costa suffused with dark grey; middle of disc slightly tinged with light fulvous; dorsum suffused with fuscous-greyish; costal patch dark fuscous-grey, elongate-triangular, from before $\frac{2}{3}$ of costa to before apex, marked with three blackish costal dots alternating with whitish ones, preceded on costa by a black point, followed by a fuscous-brownish dot before apex; top on vein 7 with a large very oblique transverse dark fuscous-grey blotch, dotted with black, reaching with acute point almost to tornus; an angulate black anterior projection on upper end of this blotch, sometimes connected with end of horizontal projection from central fascia; this blotch curved, narrowed below, enclosing a rounded conspicuous white patch of ground colour opposite tornus; preapical costal dot connected by a narrow blackish vertical preterminal strigula with a round black dot before upper third of termen; apical third of wing distinctly transversely strigulated with fuscous. Cilia white barred with grey, basal half blackish-grey barred with white opposite apex. Hind wing rather light brownish-fuscous, paler towards base; cilia grey with a fuscous antemedian shade.

Tegumen short, almost ovate. Uncus with top very densely bristled below. Socius rather small, semiovate. Transtilla knob with scarcely narrowed base. Valva short, sacculus little angulate (Slide No. 456 D, holotype).

♀ 27—28 mm. Head and palpus more mixed with white, thorax suffused with blackish in middle. Fore wing with costa strongly curved anteriorly, less curved posteriorly, apex rounded, very slightly projecting, termen scarcely concave above, rounded beneath, vertical. White, strigulated and retinate with grey and blackish, markings dark grey, scarcely infuscated, no fulvous suffusion. Part of central fascia, and portion of top of

costal patch preceding and following white discal spot, more suffused with black; transverse appendix from top of costal patch curved, less oblique, gradually narrowed below, with its acute extremity reaching tornus, sometimes connected with preterminal fascia. Hind wing paler. Otherwise similar to male.

Colliculum moderately chitinated, rather narrow, moderately long. Cestum broad, rather short. Signum with point narrower than in *T. archboldi* spec. nov., curved only towards end (Slide No. 456 D, allotype).

Mist Camp, 1800 m, January 10—14, 1939. Top Camp, 2100 m, February 7, 1939 (holotype, male), February 8, 1939 (allotype, female), February 9, 1939. Iebèlè Camp, 2250 m, November 17, 1938. Six males, two females. Nearest to *T. ostracopis* MEYRICK.

Thrinophora nebulosa spec. nov. (fig. 197)

♀ 29 mm. Head grey irrorated with white, vertex mixed with white. Palpus white, slightly irrorated with fuscous, median segment with an oblique transverse median dark grey suffusion, terminal segment, except tip, faintly suffused with greyish. Thorax dark grey slightly irrorated with whitish, tegula edged with white. Abdomen ochreous-greyish (damaged). Legs whitish, anterior leg blackish, tibia and tarsus with dark grey rings. Fore wing elongate, moderately dilated, rather broad, costa gradually moderately curved, less curved posteriorly, apex rounded, termen considerably rounded, more so below, vertical. Pale mouse-grey, markings suffused darker grey dotted with black. Basal patch moderate, edge suffused with black, strongly angulate in fold, very oblique above, less distinct beneath, costa dotted throughout with small blackish triangular marks alternating with blackish and dark grey points; central fascia indicated by a transversely oblique narrow ill-defined streak of grey suffusion from before $\frac{1}{3}$ of costa towards tornus, slightly edged with blackish above, abruptly dilated just below middle of disc so as to form a large ill-defined rounded patch of grey suffusion reaching dorsum; upper edge of this patch formed by a black triangular mark with truncate top; base of this mark forming narrow short horizontal streaks, posterior streak excurved, enclosing a rounded spot of ground colour; anterior and posterior edges of grey suffusion indefinite, black strigulation along fold; dorsum transversely strigulated with grey; costal patch ill-defined, grey, erect-triangular, from before $\frac{3}{5}$ of costa to before apex, top suffused with black; a strongly curved erect-triangular dark grey appendix from top of costal patch to tornus, narrowed below lower extremity, which is running parallel to terminal edge; a suffused preapical blackish line dotted with black, dilated before termen below apex to vein 5, slight fulvous strigulation on posterior third of wing. Cilia white, barred with grey, basal half blackish, barred with white. Hind wing pale whitish-ochreous, tinged with pale brownish-fuscous posteriorly; cilia whitish with a distinct fuscous antemedian band.

Colliculum strong, but short. Cestum moderate. Signum with point short, little curved (Slide No. 458 D, holotype).

Moss Forest Camp, 2600—2800 m, October 9—November 5, 1938 (holotype). Two specimens. Closely allied to preceding, distinct by shape of wing, greyish ground colour, paler markings, and absence of conspicuous white discal and pretornal spots.

Adoxophyes MEYRICK, 1881

Adoxophyes MEYRICK, 1881, Proc. Linn. Soc. N.S. Wales, vol. 6, p. 429. Trans. N. Zeal. Inst., vol. 15, pp. 39—40, 1883. Proc. Linn. Soc. N.S. Wales, vol. 35, p. 205, 1910. Lepid. Catal., fasc. 10, p. 13, 1910. Gener. Ins., fasc. 149, p. 18, 1913; in DE JOANNIS, Ann. Soc. Ent. Fr., vol. 98, p. 710, 1929. FERNALD, Gener. Tortr. Typ., pp. 42, 60, 1908. WALSINGHAM, Ann. Mag. Nat. Hist., ser. 7, vol. 5, p. 481, 1900. FLETCHER, Mem. Agr. Ind., Ent., vol. 11, p. 6, 1929. DIAKONOFF, Zool. Meded. Mus. Leiden, vol. 121, pp. 126, 159—162, figs. 4I (head), 4F (neur.), 7F—G (gen. ♂), 4B (gen. ♀).

Adoxophyes is common at medium altitudes but one species penetrates as high as Lake Habbema. The species from high elevations are the largest in size.

The genus is difficult and needs a thorough revision, as some species of WALKER and PAGENSTECHER are obscure or hardly recognisable at all. The following key is given provisionally, pending future opportunity for revision.

Key to the Papuan species of *Adoxophyes*

1. Fore wing with a curved longitudinal fascia from base to tornus
 horographa MEYRICK
 No such longitudinal fascia 2
2. Fore wing with a slender dark *inwardly* oblique wedge-shaped mark on dorsum
 before $\frac{1}{4}$; transverse fascia linear, ill-defined *controversa* spec. nov.
 No markings on basal third of dorsum at all or sometimes a rounded or a
 triangular spot 3
3. Fore wing with a large dark triangular or rounded spot on $\frac{1}{4}$ of dorsum, not
 connected with costa 4
 No such spot. 6
4. Fore wing with transverse fascia much dilated below, connected by an angulate
 projection with costal patch *fasciculana* WALKER
 Transverse fascia widely separated from costal patch. 5
5. Fore wing with transverso fascia well-defined along both edges
 thoracica DIAKONOFF
 Fore wing with transverse fascia suffused along posterior edge
 vindicata MEYRICK
6. Fore wing with orange irroration and orange edges to markings. 7
 Fore wing without orange irroration, markings not edged with orange. 9
7. Males 8
 Females *templana* PAGENSTECHER
8. Fore wing with costal patch separated by a broad streak of ground colour
 from transverse fascia, without anterior projection below middle
 templana PAGENSTECHER
 Fore wing with costal patch separated by a narrow streak of ground colour

- from transverse fascia, with a horizontal projection below middle anteriorly
 ioterna MEYRICK
9. Males 10
 Females 15
10. Fore wing with a suffused longitudinal submedian dark streak from base of wing. *perstricta* MEYRICK
 Fore wing without such streak. 11
11. Fore wing with transverse fascia distinct 12
 For wing with transverse fascia ill-defined, much suffused or absent. . . 13
12. Small species: 13–16 mm *rufostriatana* PAGENSTECHER
 Large species: 23 mm *acropeta* spec. nov.
13. Ground colour whitish-ochreous *nebrodes* MEYRICK
 Ground colour considerably suffused with ferruginous-brown. 14
14. Without silky gloss; costal patch hardly darker than remainder of wing; rather dull species. *aniara* DIAKONOFF
 With strong silky gloss; costal patch conspicuously darker than remainder of wing. *marmarigodes* spec. nov.
15. Narrow-winged; central fascia distinct 16
 Broad-winged; central fascia cloudy, and ill-defined or absent. 17
16. Brownish, retinate with chestnut-brown *rufostriatana* PAGENSTECHER
 Brownish-ochreous, retinate with fulvous *perstricta* MEYRICK
17. Hind wing evenly suffused with rather deep isabel-ochreous
 nebrodes MEYRICK
 Hind wing whitish, if suffused with ochreous, then only along apical half
 18
18. Without silky gloss; narrower-winged *aniara* DIAKONOFF
 With strong silky gloss; broader-winged. *marmarigodes* spec. nov.

***Adoxophyes controversa* spec. nov. (fig. 206)**

♂ 14–17 mm. Head pale ochreous, face fuscous, suffused with dark brown. Palpus ochreous-fuscous, suffused with dark brown posteriorly, terminal segment dark brown. Antenna light ochreous, ringed with dark brown, scape suffused with dark brown, except before apex. Thorax pale ochreous, apex with a large dark brown spot. Abdomen pale greyish-ochreous, anal tuft and venter pale whitish-ochreous. Legs pale ochreous, slightly suffused with pale fuscous, anterior leg darker infuscated above, median femur with a narrow blackish apical ring. Fore wing broad, rather short, ovate-truncate, broadest at $\frac{2}{3}$, strongly narrowed anteriorly, costal fold moderate, to slightly beyond $\frac{2}{5}$, edge short-ciliated. Costa strongly curved throughout, apex rounded, termen straight, vertical, rounded beneath. Pale ochreous, markings brown. Costal edge narrowly suffused throughout with deep ochreous, with a series of small suffused light brown specks, confluent anteriorly so as to form a light brown suffusion on base of costa; basal patch indicated by a conspicuous small erect triangular dark brown patch on $\frac{1}{5}$ of dorsum, with top continued into a more or less distinct irregular streak to below costal fold, strongly angulate posteriorly, slightly angulate below middle of disc, little distinct above; central fascia indicated by an erect-triangular small inwardly oblique brown mark on costa somewhat beyond $\frac{1}{3}$, reaching $\frac{1}{4}$ across wing; inner edge of this

mark concave; top of mark subacute, connected with $\frac{2}{3}$ of dorsum by a minute interrupted slightly sinuate brown line, or a series of brown scales, faintly suffused with brighter ochreous, on dorsum forming a little oblique minute sharp dark brown strigula; an indistinct series of dark brown scales suffused with ochreous, running from upper angle of cell to tornus; costal patch conspicuous, elongate-semiovate, from $\frac{2}{3}$ of costa to before apex, with top connected with termen just above tornus by a moderate curved fascia; costal patch light brown, touched with lilac, sharply edged except on costa posteriorly with dark brown; anterior edge of patch slightly concave, with a small blunt angulation below costa, posterior edge convex; top of patch abruptly narrowed below vein 4, forming a narrow dark brown line thence; a few dark brown marginal scales in, and below apex. Cilia light ochreous. Hind wing whitish-ochreous; cilia light ochreous.

Socius moderate. Gnathos with angles projecting, rounded and scobinate, point rounded, broad. Aedoeagus pistol-shaped, robust (Slide No. 397 D, holotype).

Rattan Camp, 1150—1200 m, February 12, 1939. Three specimens. Distinct by *inwardly* oblique upper part of central fascia.

Adoxophyes vindicata MEYRICK, 1910 (fig. 203)

Adoxophyes vindicata MEYRICK, 1910, Proc. Linn. Soc. N.S. Wales, vol. 35, p. 207.

Distribution: Solomon Islands: Choiseul.

Bernhard Camp, 50 m, July, 1938 (J. OLTHOFF). Bernhard Camp, 100 m, April 5, 1939. Auracaria Camp, 800 m, March 18—20, 1939. Rattan Camp, 1200 m, March 2, 1939 (allotype, male). Baliem Camp, 1700 m, November 16—27, 1938. Five males, one female.

♂ 17 mm (allotype). Head brownish-ochreous, face above deep ferruginous. Palpus fuscous. Thorax pale-ochreous, light brownish-ochreous anteriorly, apex with ferruginous spots. Abdomen pale greyish-ochreous, anal tuft and legs pale ochreous, anterior tibia and tarsus dark fuscous, light-ringed. Fore wing with costa considerably curved from base to apex, apex little rounded, termen straight, little oblique, rounded beneath; costal fold moderately broad, broadest before middle, to $\frac{2}{5}$, ciliated. Pale ochreous, suffused along costa, and a little on veins posteriorly with bright ochreous. Markings light ferruginous-lilac, edged with reddish-ferruginous, dark ferruginous, and brownish. Base of costa suffused with ochreous-brownish; a rounded large patch before $\frac{1}{4}$ of dorsum, reaching

Fig. 198: *Chresmarcha enaemargyrea* spec. nov., female, genitalia.

to above middle of disc, interrupted by fold; dorsum beyond this patch minutely edged with greyish or suffused with greyish-lilac; central fascia from $\frac{2}{5}$ of costa to $\frac{3}{5}$ of dorsum, moderately broad and suffused with lilac-grey on costa; in middle of disc this fascia narrowed to a dark fulvous-brown streak (being its anterior edge), and dilated below middle of disc by an obliquely erect-triangular lilac suffusion, reaching below to tornus, and becoming indistinct posteriorly; costal patch elongate-semiovate, from $\frac{3}{5}$ of costa to before apex; an undulate streak from middle of patch to termen above tornus, concave twice: in middle of disc, and above tornus; another almost straight vertical striga from posterior end of costal patch to preceding streak before its end, together with that streak forming a fureation, which is filled between veins 4—5 with ferruginous-lilac; costa and central area strewn with minute transverse brown strigulae; terminal edge strewn with dark brown points. Cilia pale golden-ochreous, greyish below tornus. Hind wing pale ochreous, brighter towards apex, cilia pale golden-ochreous.

Socius rather large. Gnathos with angles strongly projecting, convex, edges scobinate, hook moderate. Aedoeagus sickle-shaped (Slide No. 398 D, allotype).

The description of this species is based upon one female specimen; the male has not been described before. In MEYRICK's collection, however, a series of males, identical with the specimen described above, is placed under the name *vindicata*. Very probably these males belong to the same species as the female type specimen. The present species is closely allied to *A. heteroidana* MEYRICK, differing by the central fascia which is narrowed in disc in the latter species, and by the ground colour which is greyish-ochreous in *heteroidana*.

***Adoxophyes templana* (PAGENSTECHER, 1900)**

Tortrix templana PAGENSTECHER, 1900, Zoologica, vol. 29, p. 225.

Adoxophyes templana, MEYRICK, Proc. Linn. Soc. N.S. Wales, vol. 35, pp. 208—209, 1910. Lepid. Cat., fasc. 10, p. 13, 1912. Gener. Ins., fasc. 149, p. 18, 1913.

Distribution: Solomon Islands, North Australia, Bismarek Islands, New Guinea: Woodlark Island.

Hollandia, 0—100 m, August 27, 1938. Bernhard Camps B, 100 m, April 10, 1939. One male, one female.

***Adoxophyes nebrodes* MEYRICK, 1920 (figs. 201, 202)**

Adoxophyes nebrodes MEYRICK, 1920, Exot. Microl., vol. 2, p. 339; Trans. Ent. Soc. Lond., vol. 87, p. 505, 1938. DIAKONOFF, Treubia, vol. 18, p. 36, 1941.

Distribution: Netherlands New Guinea: Setekwa River, Snow Mountains, 2—3000 feet; British New Guinea, Papua, Kokoda, 1200 feet; North-west New Guinea: Head Camp near Malu (Kaiserin Augustafluss Expedition).

♀ 26 mm, allotype. Head thorax and abdomen ochreous, palpi suffused brownish. Fore wing broad, with costa gradually curved from base to $\frac{3}{4}$, straight posteriorly, apex obtuse-pointed, termen slightly sinuate above, rounded beneath. Tawny-ochreous, hind wing somewhat darker. Central fascia indicated by some dark scales on $\frac{2}{5}$ of costa and on $\frac{3}{4}$ of dorsum; costal patch narrowly edged with brown, suffused with brownish-lilae, with anterior edge from before $\frac{2}{3}$ of costa to termen above tornus; edged with dark brown, serrate, posterior edge indicated by a vertical brownish strigula from costa before apex to middle of termen; a minute brownish terminal strigula beyond this strigula; a pair of minute brownish transverse marks on costa beyond middle of costal patch. Hind wing light tawny-ochreous, glossy, towards apex moderately suffused and marbled with deeper tawny. Cilia in fore and hind wing tawny-ochreous.

Limen moderately broad, much narrowed in middle. Ostium small, dorsal wall formed by a moderately broad band. Bursa copulatrix elongate. Signum a moderate, ovate, denticulate plate (Slide No. 399 D, allotype).

Bernhard Camp B, 100 m, April 10–12, 1939 (allotype, female, April 12, 1939). Araucaria Camp, 800 m, March 21, 1939. Four males, two females. Male with hind wing pale yellowish-ochreous, cilia pale ochreous.

Perhaps correlated with *A. bematica* MEYRICK from the Solomon Islands, but darker, differing also by the edging of the costal patch.

Adoxophyes acropeta spec. nov. (fig. 208)

ἄζρον = top, *πέτομαι* = to fly

♂ 25 mm. Head brownish, face above suffused with dark ferruginous-brown. Palpus light brownish-ochreous, posterior half and terminal segment suffused with dark ferruginous-brown. Antenna ochreous-brownish, finely ringed with dark brown. Thorax ochreous-fuscous (damaged). Abdomen whitish-ochreous, anal tuft pale ochreous. Legs light ochreous (posterior legs missing). Fore wing elongate-truncate, costal fold strong, dilated in middle, to about $\frac{1}{3}$; costa curved along anterior $\frac{2}{3}$, straight posteriorly, apex little rounded, rectangular, termen slightly sinuate, vertical. Light ochreous, suffused and strigulated with light fulvous, markings blackish-brown. Base of costa suffused with light fulvous, with about four narrow blackish-brown strigulae, second and fourth continued across wing to an elongate dark blackish-brown, purplish tinged suffusion occupying basal $\frac{2}{5}$ of dorsum, except extreme base of wing; posterior edge of this suffusion rather well-defined, indent; central fascia dark blackish-brown, purplish tinged, formed by a triangular, almost vertical moderate patch on $\frac{1}{3}$ of costa, its anterior edge connected by a suffused narrow streak with anterior edge of a subquadrate suffused patch on $\frac{2}{3}$ of dorsum; costal patch indicated by a fulvous elongate-ovate suffusion along posterior third of costa reaching almost to apex, its anterior edge continued by a slightly sinuate series of blackish-brown points from $\frac{2}{3}$ of costa to termen above tornus and along this to tornus; another series of such

points parallel to first series, running halfway between first and apex, to before middle of termen, thence becoming vertical; a third short series of points before apex; a few dark brown points below middle of costa. Cilia pale ochreous (imperfect). Hind wing and cilia pale ochreous.

Socius slender, rather long. Gnathos with a bilobed appendix below, hook long, slender. Transtilla knob robust. Aedoeagus little curved with a subapical thorn (Slide No. 402 D).

Top Camp, 2100 m, January 25, 1939. One specimen. Intermediate between *A. rufostriatana*-group and *A. aniara*-group. Distinct by large size and rectangular fore wing.

Adoxophyes aniara DIAKONOFF, 1941

Adoxophyes aniara DIAKONOFF, 1941, Treubia, vol. 18, pp. 36–37; *ibidem*, vol. hors série, p. 44, 1944.

Distribution: Northwest New Guinea, Etappen Mountain, 850 m; Hunsteinspitze, 1350 m, Netherlands Southwest New Guinea, Wissel Lakes, 1750 m.

Rattan Camp, 1200 m, February 19, 1939. Mist Camp, 1800 m, January 14, 1939. Iebèlè Camp, 2250 m, November 15, 1939. Top Camp, 2100 m, January 25, 1939. Two males, two females.

♂ 18–22 m, ♀ 26 mm. Females tinged darker ferruginous, hind wing paler than in the type; costal patch with inner edge continuous, running below parallel to tornus, to end of dorsum. Otherwise similar to the type.

This and the two following large species show some resemblance with *Homona* chiefly through their facies, and the dark apex of the hind wing. Both are closely allied to the female of *A. heteroidana* MEYRICK; the male described as *heteroidana* is, in our opinion, an entirely different insect, belonging to the *A. rufostriatana*-group. An answer to this question can be given with certainty only after breeding these species from larvae.

Adoxophyes marmarogodes spec. nov. (figs. 199, 200, 207)

μαρμαρινόδης = glistening

♂ 20.5 mm. Head light ochreous-fulvous face densely suffused in centre with dark ferruginous-brown. Palpus deep ferruginous, darker posteriorly, terminal segment almost blackish. Antenna fulvous, flagellum except towards base light ochreous ringed with fulvous. Thorax fulvous-brown, paler posteriorly ? (damaged). Abdomen whitish-ochreous, anal tuft pale ochreous. Legs ochreous suffused with fulvous posteriorly, anterior tibia and tarsus dark fuscous above, tarsus light-ringed. Fore wing ovate-truncate, broadly dilated, broadest at $\frac{3}{4}$, costa considerably curved throughout, stronger anteriorly, apex subacute, projecting, termen considerably sinuate, vertical, costal fold reaching somewhat beyond $\frac{1}{3}$, broad, semiovate. edge long-ciliate. Light ochreous, suffused and slightly indistinctly transversely strigulated with fulvous, markings ferruginous-fulvous, scattered and

Genitalia of Tortricinae. Fig. 199: *Adorophyes marmarogodes* spec. nov., female, ovipositor and ostium. Fig. 200: *idem*, bursa copulatrix. Fig. 201: *A. nebrodes* MEYRICK, female, ovipositor and ostium. Fig. 202: *idem*, bursa copulatrix. Fig. 203: *A. vindicata* MEYRICK, male. Fig. 204: *Chresmarcha sybillina* MEYRICK, female, ovipositor and ostium. Fig. 205: *idem*, bursa copulatrix. Fig. 206: *Adorophyes controversa* spec. nov., male. Fig. 207: *A. marmarogodes* spec. nov., male. Fig. 208: *A. acropeta* spec. nov., male.

edged with small transverse dark ferruginous-brown strigulae and points. Base of costa suffused with fulvous; an indistinct ferruginous-fulvous suffusion on dorsum indicating lower part of basal patch; transverse fascia obliterate in middle of disc, indicated by an oblique transverse moderate suffused darker-edged patch on $\frac{1}{3}$ of costa, and by an ill-defined faint suffusion on $\frac{3}{4}$ of dorsum; apical fourth suffused with ferruginous-fulvous throughout, edged and marked with oblique curved series of dark dotting; anterior edge of this suffusion from $\frac{2}{3}$ of costa, hardly sinuate, slightly concave along lower half to before end of vein 2, thence strongly concave to tornus. Cilia ochreous, along costa around apex and along upper $\frac{2}{3}$ of termen deep fulvous, along termen with light ochreous basal line becoming broader downward, tornal cilia suffused with greyish. Hind wing pale ochreous, brighter towards costa and apex, slightly suffused and blotched with fulvous along apical sixth; cilia ochreous, bright ochreous with a faint antemedian fulvous shade around apex and upper fourth of termen.

Male genitalia resembling those of *A. vindicata*. Uncus somewhat shorter and more clavate. Socius shorter. Gnathos smaller, with shorter hook; processes at the lower edge more rounded and shorter. Aedoeagus longer (Slide No. 400 D, holotype).

♀ 25—28.5 mm. Head light ferruginous-brown, crown between antennae more or less suffused with dark ferruginous-brown or fuscous, collar orange-ferruginous. Palpus light ferruginous-brown, top of median segment sometimes suffused with blackish above. Antenna light ferruginous, flagellum ochreous, ferruginous-ringed. Thorax ochreous-brownish sometimes mixed with fulvous. Abdomen pale whitish-ochreous or pale ochreous, brownish above, more or less tinged yellowish, anal tuft pale yellowish. Legs pale ochreous, suffused with yellowish, anterior tibia suffused with blackish. Fore wing with costa curved anteriorly, rather straight posteriorly, apex obtuse, termen slightly sinuate above, rounded and strongly prominent beneath. Deep tawny-ochreous, regularly and densely strigulated with light ochreous-fulvous or light brown, markings light chestnut-brown, somewhat suffused. A strongly suffused triangular patch on $\frac{1}{3}$ of dorsum, reaching to fold; central fascia moderately broad, from $\frac{2}{5}$ of costa to beyond $\frac{3}{4}$ of dorsum, dilated below $\frac{1}{3}$ of disc, slightly narrowed again below fold; inner edge of fascia straight and rather well-defined, outer edge suffused, often indefinite along its lower $\frac{3}{4}$; costal patch large, chestnut-brown, triangular-dentiform, with elongate base extending from slightly beyond middle of costa almost to apex; this patch reaching below to the stalk of veins 7 and 8, with a tooth-shaped, slightly curved, pointed and outwardly oblique projection from middle of lower edge of patch, pointing towards termen above tornus; top of this projection reaching to about vein 3; sometimes a cloudy indistinct brownish-greyish suffusion between costal patch and lower half of central fascia; tornus brighter yellowish; in one specimen about three irregular subterminal series of impressed dark brown short transverse strigulae from costa to tornus;

terminal edge deep brown. Cilia deep chestnut-brown, bright ochreous between veins 1b—2, shining. Hind wing pale ochreous, brighter ochreous along costal half, faintly transversely strigulated, on costa before apex strigulated with greyish. Cilia light yellowish-ochreous, slightly suffused with greyish, and with a faint brown antemedian line around apex.

Limen narrow, curved. Bursa copulatrix pear-shaped. Signum a large ovate convex plate with rough surface (Slide No. 401 D, allotype).

Top Camp, 2100 m, February 9, 1939. One male (holotype). Moss Forest Camp, 2600—2800 m, October 9—November 5, 1938. Three females. Five km northeast of Lake Habbema, October 21—26, 1938. Two females (allotype). Iebèlè Camp, 2250 m, November 25, 1938. One male. This is the largest *Adoxophyes* species known to us. It resembles a *Homona*. Distinct by the not darkly edged markings, by the silky gloss of the fore wing, and by the deep fulvous cilia in the two sexes. Nearest to *A. aniara* DIAKONOFF.

Chresmarcha MEYRICK, 1910

Chresmarcha MEYRICK, (part.), Proc. Linn. Soc. N.S. Wales, vol. 35, p. 219. Lepid. Catal., fasc. 10, p. 16, 1912. Gener. Ins., fasc. 149, p. 21, pl. 1, fig. 1, 1913. FLETCHER, Mem. Agr. Ind., Ent., vol. 11, p. 48, 1929.

Chresmarcha DIAKONOFF, nec MEYRICK, (part.), Zool. Meded. Mus. Leiden, vol. 21, pp. 135—142, figs II, J, 3F. F, 1939.

Chresmarcha DIAKONOFF, (*sensu stricto*), Treubia, vol. 18, p. 31, 1941; *ibidem*, vol. hors série, pp. 34—35, 1944.

Typus generis *Chresmarcha sibyllina* MEYRICK, male, not female!

The present genus represents one of the most striking examples of the mysterious white and black mimicry, characteristic of certain elements of the fauna of Lepidoptera of New Guinea. Some *Chresmarcha* species by their colouring imitate certain species of *Chionoithremma* (viz., those with a white fore wing with black marginal markings), to such an extent that they succeeded to deceive not only their surmised enemies — however puzzling the use of such mimicry may be in nature — but also Entomologists! MEYRICK regarded his female of *Chresmarcha sibyllina* as belonging to the same species as the male insect which he described under that name. The female, however, appears to be a true *Chionoithremma*. Later he separated the female insect under the name of *patarea* MEYRICK; but left it in the genus *Chresmarcha*. The present author followed MEYRICK's view (1939), but was much mystified by the differences in wing neuration and in the nature of the genitalia of the supposed sex partners, and consequently made the mistake of suppressing the genus *Zacorisca* as a synonym of "*Chresmarcha*" MEYRICK. Afterwards he was able to ascertain that both these opinions were untenable, by the discovery of the true male partner of the female insect, originally described by MEYRICK as *Chresmarcha sibyllina*, afterwards as *Chresmarcha patarea*. This female appears to be a *Chionoithremma*, a relative of *Zacorisca* MEYRICK (tribe *Zacoriscini*). The males of *Chresmarcha sibyllina* and *C. delphica*, characterised by the

absence of a costal fold, by having veins 7 and 8 stalked, by having vein 3 originating from before angle of cell in fore wing, and by the possession of the genitalia of a cacoeciine type, appeared to be close relatives of the brownish and fulvous-coloured species of *Adoxophyes*, and to belong to a different tribe, viz. the Cacoeciini. There was, however, one last link in our chain of arguments missing: the females of *Chresmarcha sensu stricto* remained unknown. It was, therefore, a great satisfaction to find the female of *sibyllina* among the present material, as a last proof of the true nature of the present genus. Exactly in accordance with our hypothesis, this female insect bears the same white and black markings as the male, and possesses also a neururation of both fore and hind wing in all respects identical with that of MEYRICK's male type specimen of *Chresmarcha sibyllina*.

It may be stressed that we regard the male specimen as the type of the species *sibyllina*, as it has been recorded in the description before the female; the latter should be named *Chionothremma patarea* (MEYRICK). The male accordingly becomes the type of the present genus. As most species of *Chionothremma* possess the above mentioned white and black colouring, and as this may be regarded as the basic scheme of coloration of this genus, we surmise the *Chionothremma* colouring to be genuine, and the colouring of *Chresmarcha* to be due to mimicry, and not on the contrary.

Herewith the tricks of *Chresmarcha* are not yet exhausted. We discovered a specimen of this genus in the present collection which apparently is a mimic of Lepidoptera with a quite different scheme of coloration also very common in New Guinea; this colouring appears independently in several families, as Zygenidae, Geometridae, Lithosiidae, Callidulidae, etc.; it consists of a white ground colour with the apical half or third of the fore wing deep wine-red, edged with a blackish suffusion. Examples — possibly genuine — of this colouring can be found in the genus *Damias* (Callidulidae).

The resemblance of *Chresmarcha enaemargyrea* spec. nov., described below, with a representative of the *Damias*-group is so striking that we were completely deceived and put the single specimen aside under macro-Heterocera; only a thorough re-investigation of the specimen involved afterwards revealed its true nature! This species resembles also *Zacorisca daphnaea* MEYRICK, itself possibly a mimic of the above mentioned "*Damias* coloration".

As said above, the nearest relative of *Chresmarcha* appears to be the genus *Adoxophyes*, representing a group of species with rather uniform colouring and markings, altogether different from the "black and white" type, viz., with an ochreous, brownish or fulvous ground colour, and with the ordinary "basal area", "central fascia" and "costal patch". The genus *Chresmarcha*, as understood by us, may be redescribed as follows.

Head with narrow, loosely appressed hair-scales, face short-scaled.

Ocellus posterior. Proboscis developed. Antenna moderately ciliated in male, pubescent in female, scape moderate. Palpus rather short, porrect; median segment clothed with appressed, rather short scales, slightly projecting towards apex above and beneath; terminal segment short, pointed. Thorax without crest. Fore wing without costal fold, smoothly scaled, vein 2 from slightly beyond middle, 3 from half way between vein 2 and angle, 4 from angle, 5 scarcely approximated towards base, 7 and 8 stalked, stalk over $\frac{1}{2}$, 7 to termen, 11 from before middle of cell, which is not curved posteriorly. Hind wing without cubital pecten, 2 from about middle, 3 nearer to 4 than to 2, 4 from angle, 5 slightly and gradually converging with 4 towards base, hardly curved, 6 and 7 connate or short-stalked.

Genitalia typically cacoeciine. Tegumen broad and short, uncus narrow, hook-shaped, with dilated and truncate top, socius small, narrow, drooping, gnathos very strong, H-shaped, with short top and long lateral pending projections (which is a development of the gnathos in *Adoxophyes*) Valva and sacculus rather small, simple. Transtilla with lateral dentate knobs, peniculus present. Aedoeagus very short, slightly curved. Ostium simple, colliculum present, cestum absent, bursa copulatrix elongate, signum very small.

Nearest to *Adoxophyes* MEYRICK, 1910, differing by the absence of the costal fold in male, by the almost parallel vein 5 in hind wing, and also by markings, quite unusual in Cacoeciini. The species must have acquired diurnal habits together with their conspicuous colouring.

Key to the species of *Chresmarcha*

1. Snow-white, apical third of wing orange-fulvous, separated by black streak, marked with metallic dots *enaemargyrea* spec. nov.
White with black marginal markings 2
2. Hind wing yellowish-white, a grey streak along termen. . . *delphica* MEYRICK
Hind wing dark grey *sibyllina* MEYRICK

Chresmarcha sibyllina MEYRICK, 1910 (figs. 204, 205)

Chresmarcha sibyllina MEYRICK, 1910, Proc. Linn. Soc. N.S. Wales, vol. 35, p. 220, No. 15. Lep. Catal., fasc. 10, p. 16, 1912. Gener. Ins., fasc. 149, p. 21, pl. 1, fig. 1, 1913. DIAKONOFF, Zool. Meded. Mus. Leiden, vol. 21, pp. 135, 136, 138, figs. 1 I—J, 3 E—F, 1939. Treubia, vol. 18, p. 31, 1941; *ibidem*, vol. hors série, pp. 34—35, 1944.

Distribution: British New Guinea, Owgarra.

♀ 23 mm (allotype). Head pale orange-ochreous, face narrowly edged with black. Palpus light orange-ochreous, terminal segment black. Antenna black, scape mixed with pale ochreous. Thorax whitish, tinged pale orange-ochreous anteriorly. Abdomen dark grey, anal scaling roughish, dark grey, ovipositor deep orange. Legs dark grey. Fore wing broad, truncate, strongly dilated, costa strongly rounded throughout, apex rounded, termen straight above, rounded beneath, little oblique. Snow-

white, glossy, base narrowly suffused with pale orange-ochreous, base of costal edge with a short black streak; costa from before middle to apex with a moderate black streak, gradually narrowed anteriorly, and continued along edge of wing as far as $\frac{1}{4}$, somewhat dilated towards middle, and marked with four rounded white dots; these dots become narrower towards apex, ultimate dot forming a small vertical streak before apex; a moderate black streak along termen to tornus, preceded by another, strongly sinuate streak, running from middle of costal streak to tornus; an irregularly ovate spot of ground colour between these streaks, faintly suffused with pale yellow. Cilia blackish with white base (damaged). Hind wing dark grey; cilia white, with a narrow grey antemedian line. Fore wing below blackish with white central half, hind wing below dark grey.

Ostium small, limen narrow, simple, slightly curved in middle. Colliculum moderate, weak. Ductus bursae rather short, no cestum. Bursa copulatrix elongate, signum very small: a short hook upon an ovate basal plate (Slide No. 396 D, allotype).

Sigi Camp, 1500 m, February 22, 1939. One specimen. DURRANT records one female specimen of *C. sibyllina* from Snow Mountains, Utakwa River, 4000—6000 feet, February 1, 1913 (*Brit. O.U. & WOLL, Exp.* vol. 1, p. 154, 1915); by all probability it concerns a *Chionoethremma* species.

***Chresmarcha enaemargyrea* spec. nov. (fig. 198)**

ἐραιμος = bloody, *ἀργύρεος* = silvery

♀ 27 mm. Head, palpus fuscous-black (damaged; palpi missing). Thorax fuscous. Abdomen fuscous-black, becoming paler towards base, towards apex with faint bluish-purple gloss. Legs and venter dark fuscous. Fore wing broad, dilated, costa strongly arched at base, curved posteriorly, apex pointed, projecting, slightly falcate, termen being deeply sinuate above, prominent and broadly rounded beneath, vertical. A large semi-circular well-defined snow-white glossy patch with base occupying almost entire dorsum, edged on base of dorsum, on base of wing (here more broadly), and along anterior half of costa by a black streak; posterior edge of patch with a small triangular projection in middle, and two minute projections: at $\frac{1}{4}$ and $\frac{3}{4}$ respectively; apical third of wing deep orange-fulvous, separated from white patch by a rather broad black fascia, running from middle of costa to dorsum before tornus, moderately dilated on costa and dorsum, with posterior edge irregularly suffused; a narrow black marginal line along termen, sending off small pointed streaks on veins, these streaks becoming shorter towards tornus; spots of shining pale blue or greenish-metallie scales, round or ovate, arranged as follows: closely set in a series along anterior half of costa, from well beyond base to before middle, thence curved to tornus, forming a broad fureation on lower half of wing; anterior arm of this fureation interrupted above, below forming an almost continuous curved fascia to above dorsum before

tornus; posterior arm of furcation strongly outwardly curved, formed by four well-isolated spots between veins, last spot above tornus; some two spots below $\frac{2}{5}$ of costa; three round spots along posterior fifth of costa, last one largest, in apex, not reaching edge of wing; from each of these three spots originates a vertical series of smaller metallic spots, sinuate and tolerably parallel to terminal edge of wing; first series very short, second series to above middle, third series slightly submarginal, ending on termen above tornus. Cilia purplish-black with greenish-metallic shine. Hind wing dark fuscous-purple, glossy, a silvery-white patch occupying less than basal half of wing, broadly suffused with fuscous along costa, posterior edge little suffused, strongly convex, moderately dentate on veins. Cilia purplish-fuscous, with a narrow pale basal line, and a dark purple-fuscous subbasal fascia.

Limen, a moderate membranous transverse band, supported by a narrow median rod. Ostium simple. Colliculum a weak somewhat concave plate. Ductus bursae moderately long, wide. Bursa copulatrix ovoid. Signum a small tooth with a large embossed capitulum (Slide No. 1006 D, type).

Hollandia, sea-level, July, 1938. One specimen. A welcome addition to this interesting genus.