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## Original article

A new subfamily Crocanthinae based on the genus *Crocant* Meyrick and its related genera, with a world catalog of the subfamily (Lepidoptera, Lecithoceridae)

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## ABSTRACT

A new subfamily, Crocanthinae n. subf., is proposed for *Crocant* Meyrick and its allies, which have been considered as a monophyletic group with a unique genital character—an absent or remarkably reduced gnathos in the male genitalia. The subfamily includes *Aprosoesta* Turner, *Lamprista* Park, *Pacificulla* Park, *Hannara* Park, and *Gonaepa* Walker. *Aprosoesta* Turner st. rev. is resurrected as a valid genus with highly specialized characters. In this paper, five new species of *Aprosoesta*, *A. subpancala* sp. nov., *A. cordispina* sp. nov., *A. strombiana* sp. nov., *A. vinnula* sp. nov., and *A. eremitatos* sp. nov., and three new species of *Crocant*, *C. gracilosa* sp. nov., *C. susuensis* sp. nov., and *C. hagenensis* sp. nov., are described from Papua New Guinea or Papua, Indonesia as new to science. Consequently, 11 species of the genus *Aprosoesta*, 37 species of *Crocant*, two species of *Hannara*, three species of *Lamprista*, 23 species of *Pacificulla*, and six species of *Gonaepa*, are recognized. The genus *Aprosoesta* is divided into two species-groups: the *pancala* species-group and the *vinnula* species-group, and the genus *Crocant* is divided into four species-groups: the *parasinopsis* species-group, the *characotis* species-group, the *anacostola* species-group, and the *leucodonta* species-group, with 12 species not assigned to these species-groups. In addition, 18 new combinations and two synonyms of species are proposed.

Illustrations of adults of all known species, with few exceptions, and genitalia of all new species and previously known species, where available, are provided. A key to the species for the species-groups and genera, and a world catalogue of the subfamily are given.

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## Introduction

The genus *Crocant* Meyrick includes the most colorful moths of the family Lecithoceridae, which are mostly distributed in the Australian Region, mainly in northern and eastern Australia and New Guinea (Papua New Guinea and Papua of Indonesia), and some species of *Crocant* are found in the adjacent islands of Indonesia. The adults of *Crocant* are medium to large in size among members of the family, with brightly colored forewings, yellow, orange, or sometimes rosy, and are active during the day, although most of them come to light at night. The antennae are usually longer than the forewing. As far as is known, the larva of the type

species (TS), *C. prasinopsis* Meyrick, feeds on eucalyptus leaves in forest litter (Common 1996), otherwise there is no known species of economic importance.

The genus *Crocant* was transferred from Gelechiidae to Timyridae by Clarke (1965), and then the family name was replaced with Lecithoceridae by Gozmány (1978). The genus is one of the most infrequently encountered groups in the family; in the others, none of the previous workers, including Gozmány (1978), were able to assign it to previously proposed subfamilies of Lecithoceridae: Ceuthomadarinae, Lecithocerinae, or Torodorinae. Lvovsky (1996) designated Oditinae as one of the subfamilies of Lecithoceridae. However, in recent studies using molecular data or combined molecular and morphological data by Kaila et al (2011) and Heikkilä et al (2014), it was suggested that Oditinae is not associated with the family Lecithoceridae and should be excluded from the family. Sohn et al (2015) also clearly supported this conclusion. The genus has been considered as a monophyletic group with remarkable differences from other genera in Lecithoceridae. The

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synapomorphies include the relatively bright colored wings, the hindwing often with similar markings to those of the forewing, and the gnathos absent or remarkably reduced in the male genitalia. Considering these uniquely specialized characters without gnathos in the male genitalia, the genus could not be properly placed in a known subfamily with confidence. No revisionary work on their generic status has been presented to date, and all species with the above mentioned characteristics have been simply placed into the genus. Since the genus was established by Meyrick (1886), based on *C. prasinopsis* Meyrick, 1886, from New Guinea, 69 species were previously reported by earlier authors, including Diakonoff (1954). Recently, Park (2011) described four species of *Aprosoesta* Turner, placing them in the genus *Crocantnes*, from Papua New Guinea and Papua of Indonesia; and Park and Lee (2013a, 2013b, 2013c) described 10 new species belonging to three new genera: *Pacificulla* Park, *Lamprista* Park, and *Hanara* Park, separating from the genus *Crocantnes*.

In this study, a new subfamily, Crocanthinae n. subf., is proposed for the genus *Crocantnes* Meyrick and its five related genera: *Aprosoesta* Turner, *Gonaepa* Walker, *Pacificulla* Park, *Lamprista* Park, and *Hanara* Park. The new subfamily is defined by highly specialized characters with a lacking or remarkably reduced gnathos in the male genitalia. The genus *Crocantnes* Meyrick is divided into four species-groups: the *prasinopsis* species-group, the *characotis* species-group, the *anacostola* species-group, and the *leucodonta* species-group, with descriptions of three new species. However, 11 species of *Crocantnes* have not been assigned into these species-groups due to some uncertainties; these are listed in the “Group not assigned” category. In addition, the genus *Aprosoesta* Turner st. rev. has been resurrected as a valid genus and is divided into two species-groups, the *pancala* species-group and the *vinnula* species-group, with descriptions of five new species from Papua New Guinea or Papua, Indonesia. The genus *Gonaepa* Walker is poorly known, and is listed with six described species. The following 18 new combinations are proposed: *Aprosoesta poliozona* (Park, 2011) comb. nov., *A. warmarensis* (Park, 2011) comb. nov., *A. gatoralis* (Park, 2011) comb. nov., *A. cyclopsana* (Park, 2011) comb. nov., *Pacificulla carcharias* (Meyrick, 1910) comb. nov., *P. cleomorpha* (Meyrick, 1931) comb. nov., *P. euryppya* (Meyrick, 1918) comb. nov., *P. gelastis* (Meyrick, 1918) comb. nov., *P. heliocharis* (Diakonoff, 1954) comb. nov., *P. ignea* (Meyrick, 1925) comb. nov., *P. megalophthalma* (Diakonoff, 1954) comb. nov., *P. protoma* (Diakonoff, 1954) comb. nov., *P. pyrostola* (Diakonoff, 1954) comb. nov., *P. sceptorhophora* (Diakonoff, 1954) comb. nov., *P. scioxantha* (Meyrick, 1910) comb. nov., *P. thermocharis* (Meyrick, 1931) comb. nov., *P. thrasydora* (Meyrick) comb. nov., and *Gonaepa phaeograpta* (Meyrick, 1931) comb. nov. Two species of *Crocantnes* are synonymized: *C. monodesma* Meyrick syn. nov. with *C. fallax* Durrant, and *C. triglenopa* Meyrick syn. nov. with *C. symmochlopa* Meyrick.

Consequently, a total of 83 species of the subfamily are recognized in the world: 56 species from the Papuan region, including Papua New Guinea and Indonesia (Papua, Celebes), and 19 species from north east Australia. Of these, only two species, *C. prasinopsis* Meyrick and *C. sidonia* Meyrick, are distributed in both areas. This result indicates that species of the subfamily Crocanthinae display an extremely high degree of endemism. Finally, a world catalog of the subfamily with all known species so far is provided, including the type locality (TL), depository of types, and distributional range of each species.

## Materials and methods

Examined specimens were mainly obtained from the following museums: (1) the National Museum of Natural History (USNM), Washington, D.C., USA; (2) the Natural History Museum (BMNH), London, UK; (3) the Rijksmuseum van Natuurlijke Historie

(National Museum of Natural History Naturalis; RMNH), Leiden, The Netherlands (changed to “Netherlands Centre for Biodiversity Naturalis”); (4) the Australian National Collection of Insects (ANIC), Canberra, Australia; and (5) the South Australian Museum, Adelaide (SAMA), Adelaide, Australia. Of the types preserved in the SAMA, only photographs were provided and compared. For identification and description of new species, the genitalia of some types in the above museums were dissected and compared to the genitalia slides which were previously made by Clarke (1965) and Diakonoff (1954). In a few cases, types could not be found and it is assumed that they are probably lost.

Genital illustrations of known species are provided wherever possible; however, the following species are not illustrated here: (1) species for which the types have not been dissected; (2) some TS which were previously illustrated by Clarke (1965) and recently described by Park and Lee (2013a, 2013b, 2013c)—for these species, sources of the figures are provided instead; and (3) species described with line drawings of genitalia by Diakonoff (1954)—photos were taken from the genital slides of these in the RMNH and they were illustrated again. Wing venations are provided for some representative species of the genus and species-group. The type locality of the species is indicated as “TL” and the depositories of the type specimen are given in square brackets “[ ]”. The localities of some types are indicated in the map provided in Figure 159. The color standard for the description of adults follows Kornerup and Wanscher (1978). Types for new species will be deposited in the USNM or RMNH, on indefinite loan from Papua New Guinea or Indonesia.

## Systematic accounts

### Family Lecithoceridae

#### Subfamily Crocanthinae Park, subf. nov.

##### Genus *Crocantnes* Meyrick, 1886

The new subfamily Crocanthinae is defined as having the gnathos absent or highly reduced in the male genitalia, separating from the previously known subfamilies of Lecithoceridae: Ceuthomadarinae, Lecithocerinae, and Torodorinae.

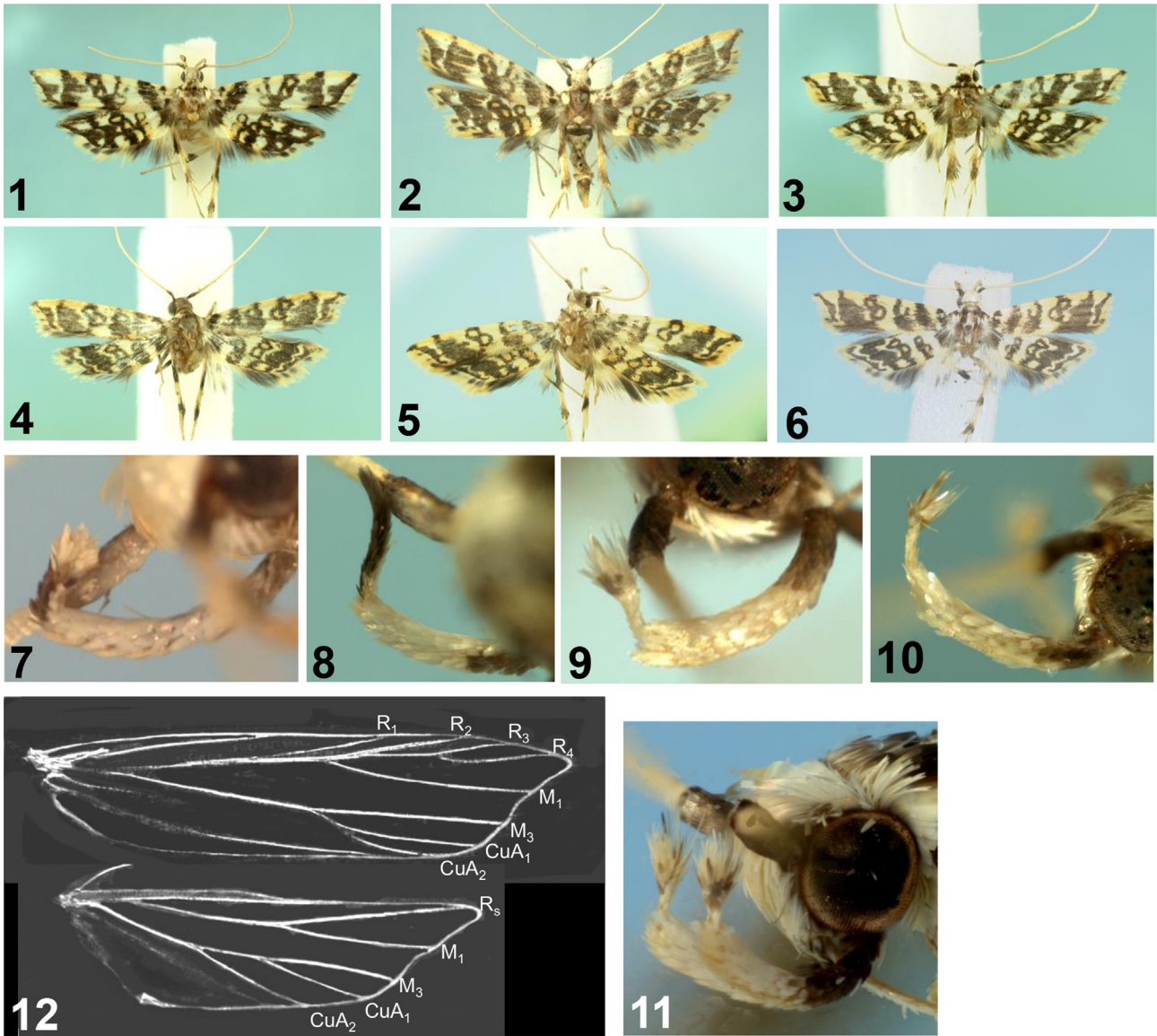
##### Key to the genera of Crocanthinae

1. Male genitalia with gnathos absent -----2  
Male genitalia with gnathos partly reduced ---*Gonaepa* Turner
2. Labial palpus with slender third segment, not dimorphic ---3  
Labial palpus with sexual dimorphism; forewing venation with  $R_2$  stalked with  $R_{3+4}$  -----4
3. Forewing venation with  $R_2$  free -----*Crocantnes* Meyrick  
Forewing with  $R_2$  connate or short-stalked with  $R_{3+4}$  -----  
-----*Hanara* Park
4. Hindwing unicolorous; labial palpus with sexual dimorphism or not -----*Lamprista* Park  
Hindwing with similar wing maculation as forewing; labial palpus always with sexual dimorphism -----5
5. Male labial palpus with extremely long, thickened second segment; third very short or absent. Female with slender third segment -----*Pacificulla* Park  
Male labial palpus with normally thickened second segment; third segment flattened with loose scales at apex or long and variously; recurved. Female with slender third segment, -----  
-----*Aprosoesta* Turner

##### *Aprosoesta* Turner, 1919, st. rev.

*Aprosoesta* Turner, 1919: 151; Meyrick, 1925: 231, as a synonym of *Crocantnes*.

TS: *Aprosoesta pancala* Turner, 1919.



**Figures 1–12.** Adult, labial palpus, and venation of *Aprosoesta* species: 1, *A. pancala* (Turner); 2, *A. poliozona* Park; 3, *A. warmarensis* Park; 4, *A. gatoralis* Park; 5, *A. cyclopsana* Park; 6, *A. subpancala* Park; 7, labial palpus of *A. pancala*; 8, ditto, *A. poliozona*; 9, ditto, *A. gatoralis*; 10, ditto, *A. cyclopsana*; 11, ditto, *A. subpancala*; 12, venation of *A. pancala*.

The genus *Aprosoesta* Turner was established based on the TS, *A. pancala* Turner, from N. Queensland, Australia (Turner 1919), but it was treated as a junior synonym of *Crocantbes* Meyrick (Meyrick 1925a) and previous workers followed it (Common 1996; Gozmány 1978). However, it has good separable characters differentiating it from the genus *Crocantbes* as follows: the hindwing as highly ornamented as the forewing with similar maculation and the forewing with  $R_2$  stalked with  $R_{3+4}$ ; the labial palpus in the male is anomalously, the third segment is short with brush-like rough scales apically or flattened, sometimes strongly curved in an S-shape; and the female's third segment is normally slender. Based on these unique separable characters, *Aprosoesta* Turner is proposed as a valid genus.

The genus is divided into two groups: the *pancala* species-group with six known species, and the *vinnula* species-group with five species in New Guinea and Australia.

**Key to the species-groups, based on external morphology**

- 1. Both wings with similar maculation ———*pancala* species-group
- Both wings with different maculation —*vinnula* species-group

**The *pancala* species-group**

This group includes the TS of the genus and five sibling species which have shared characteristics in wing maculation and male genitalia. The group is defined by having both forewings and hindwings with similar maculation, a short third segment of labial palpus in the male, ending with a triangularly dilated hair tuft, and normally a slender one in the female, and elongate valva of the male genitalia, with dense strong setae along the margin. The *pancala* species-group has a very similar structure of the male genitalia among the species.

**Key to species of the *pancala* species-group, based on the male genitalia**

- 1. Valva elongate, with an apical spine; aedeagus with cornuti consisting of a row of numerous spines————— 2
- Valva moderate, without apical spine; aedeagus with cornutus consisting of a single spine or absent————— 3
- 2. Caudal arms of uncus less than 1/3 length of the basal part of the uncus; juxta longer than tegumen (Figure 113) —————*C. subpancala* sp. nov.

- Caudal arms of uncus as long as basal part of the uncus or longer; juxta shorter than tegumen----- 3
3. Cucullus sharply produced apically; aedeagus very narrowed apically, with an apical spine -----*C. gatoralis* Park  
Cucullus rounded apically; aedeagus blunted apically, without apical spine -----*C. cyclopsana* Park
4. Aedeagus with a single spine of cornutus ----*C. pancala* Turner  
Aedeagus without cornutus----- 5
5. Cucullus elongate, triangularly produced apically -----*C. poliozona* Park  
Cucullus moderate, more or less broad, not so much produced apically -----*C. warmarensis* Park

**1. *Aprosoesta pancala* (Turner, 1919)**  
(Figures 1, 7, 11)

*Aprosoesta pancala* Turner, 1919: 151. TL: Queensland, Australia.  
*Crocantnes pancala*; Meyrick, 1925: 231; Common, 1996: 116; Park, 2011: 781 [ANIC].

**Diagnosis.** Adult (Figures 1, 7). Wingspan, 13–15 mm. This species is externally similar to its allies of the group, but it can be distinguished from them by the male genitalia: valva moderately elongate, with round outer margin; juxta more or less quadrate, concave on caudal margin; aedeagus stout, slightly shorter than valva, with a single spine of cornutus.

**Male genitalia.** See Park (2011: 781, Figures 1 and 1a–b).

**Material examined.** 1♂, Australia, 15°28'S, 145°13'E, 4 km from Cooktom Old, 21 v 1977, IBF Common & ED Edwards, gen. slide no. CIS-5919/Park. 1♂, Papua New Guinea, near Bulolo, Mt Susu Nat. Res., 975 m, 27–28 viii 1983, S. Miller; UV light, Araucaria For., gen. slide no. CIS-5640/Park; 7♂, same data as the preceding specimen, gen. slide no. CIS-5918/Park; 6♂, Madang, Brahman Mission 200 m, 11–15 x 1992, V. O. Becker Col.; Col. Becker, PNG 2973; 1♂, Indonesia, Papua, Wandammen Peninsula, ZWA-Exp. 1996; Gng Meja Res. near Monokwari Japanese Monum., 0°52'S, 134°06'E, 12 ii 1996, at light; 1♂, Indonesia, Papua, Birdshaped Peninsula, Tuan Wow (nr. Andai) Primary Lowland Forest 240 m, at light, 21 xi 1993, AJ de Boer, AL M Rutten & R de Vos.

**Distribution.** Australia, Papua New Guinea, Indonesia (Papua).

**Remarks.** Park (2011) noted that a considerable morphological variation in the male genitalia is found between specimens from Australia and Papua. Such differences, with information from a molecular study when additional specimens become available, may possibly prove that the two geographically isolated populations are in fact different species.

**2. *Aprosoesta poliozona* (Park, 2011), comb. nov.**  
(Figures 2, 8)

*Crocantnes poliozona* Park, 2011: 782. TL: Madang, Papua New Guinea [USNM].

**Diagnosis.** Adult (Figure 2). Wingspan, 12–13 mm. This species can be distinguished from its allies by the third segment of the labial palpus (Figure 8): longer, as long as 2/3 length of second, more or less flattened, dark brown entirely, gently arched. The male genitalia have good separable characters, with the uncus much shorter, more deeply concave on caudal margin; tegumen shorter than 1/2 the length of valva; cucullus elongate, more or less triangularly produced; juxta short, deeply emarginated, V-shaped on caudal margin; aedeagus small, shorter than 1/2 the length of valva, without spine-like cornutus.

**Male genitalia.** See Park (2011: 782, Figures 9a–c).

**Material examined.** 2♂, Madang, Brahman Mission- 200 m, 11–15 X 1992, V. O. Becker Col.; Col. Becker PNG 2973, gen. slide no. CIS-5641/Park (holotype).

**Distribution.** Papua New Guinea (Madang).

**3. *Aprosoesta warmarensis* (Park, 2011), comb. nov.**  
(Figure 3)

*Crocantnes warmarensis* Park, 2011: 784. TL: Papua, Indonesia [RMNH].

**Diagnosis.** Adult (Figure 3). Wingspan, 11.0 mm. This species is distinguishable from *A. pancala* and *C. poliozona* by its smaller size. The maculation on both wings is slightly variable within species and is not a good separable character for identification. The male genitalia are more similar to those of *C. poliozona* Park, but can be distinguished by the broader, less elongate valva and more or less pentagon-like juxta.

**Male genitalia.** See Park (2011: 784, Figures 10a–c).

**Material examined.** 1♂, Indonesia, Papua, Birdshaped Peninsula, ZMA-Exp. 1996; Artac Mountains 300 m, Warmare Dua 0°58'S, 133°53'E, 27 ii 1996, at light, Primary Forest Cult. Area, gen. slide no. CIS-5969/Park (holotype), in the RMNH.

**Distribution.** Indonesia (Papua).

**4. *Aprosoesta gatoralis* (Park, 2011), comb. nov.**  
(Figures 4, 9)

*Crocantnes gatoralis* Park, 2011: 784. TL: Papua, Indonesia [RMNH].

**Diagnosis.** Adult (Figure 4). Wingspan, 10.0–12.0 mm. This species is externally similar to *A. warmarensis* and they are hardly distinguishable from each other, but the forewing ground color pale orange and the hindwing with distinct zigzag, orange-white line between the submarginal and marginal fascia. It can be distinguished from its allies by the male genitalia, especially the more slender, elongate valva with an apical spine, and distinctly bifurcate uncus.

**Male genitalia.** See Park (2011: 784, Figures 11a–c).

**Material examined.** 1♂, Indonesia, Papua, Birdshaped Peninsula, ZMA-Exp., 1996; Gng Meja Resv., near Manokwari Japanese Monument, 0°52'S, 134°06'E, 12 ii 1996, at light, gen. slide no. CIS-5970/Park (holotype); 1♂, Indonesia, Papua, Cyclop Mountains, Depapre 560 m, at light, 11 x 1993, AJ de Boer, AL M Rutten & R de Vos, gen. slide no. CIS-6010/Park, in the RMNH.

**Distribution.** Indonesia (Papua).

**5. *Aprosoesta cyclopsana* (Park, 2011), comb. nov.**  
(Figures 5, 10)

*Crocantnes cyclopsana* Park, 2011: 786. TL: Papua, Indonesia [RMNH].

**Diagnosis.** Adult (Figure 5). Wingspan, 11.0 mm. This species is similar to *A. gatoralis* (Park) in the external and male genital characters, but can be distinguished by the male genitalia, having the uncus with narrower basal stalk and less slender lateral arms, shorter than 1/2 the length of the uncus; cucullus not so much sharply produced; and aedeagus more stout than that of the latter, cornuti consisting of 12–13 spines.

**Male genitalia.** See Park (2011, Figures 12a–c).

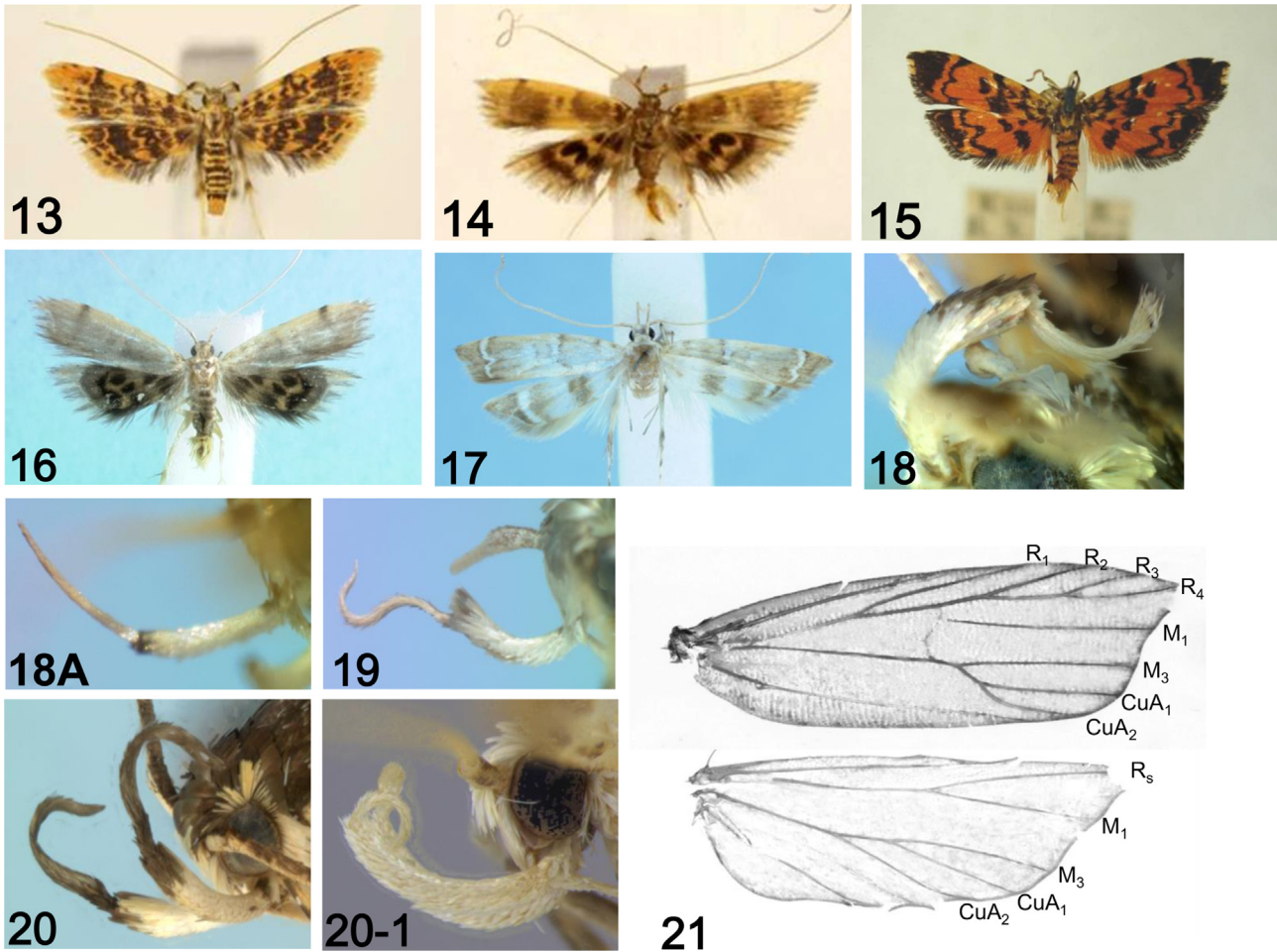
**Material examined.** 1♂, Indonesia, Papua, ZMA-Exp., 1996; Depapre, Cyclops Mountains, 2° 29'S, 140°27'E, 21 i 1996, at light, gen. slide no. CIS-5972/Park (holotype).

**Distribution.** Indonesia (Papua).

**6. *Aprosoesta subpancala* Park, sp. nov.**  
(Figures 6, 11, 113)

**Type.** Holotype: ♂, Papua New Guinea, Morobe, Wau 1000 m, 17–30 ix 1992, VO Becker; Col. Becker, PNG 865, gen. slide no. CIS-6123/Park [USNM].

**Diagnosis.** This species is superficially similar to its allies of the *pancala* species-group, especially to *A. gatoralis* Park, by the short third segment of labial palpus with rough hair-like scales apically (Figure 11). The male genitalia are also close to those of *A. gatoralis*,



**Figures 13–21.** Adult and labial palpus of *Aprosoesta* species: 13, *A. vinnula* Park, sp. nov., holotype; 14, *A. strombola* Park, sp. nov., holotype; 15, *A. heliograptia* Meyrick; 16, *A. cordispina* Park, sp. nov., holotype; 17, *A. eremitatos* Park, sp. nov.; 18, male labial palpus of *A. vinnula*; 18A, female labial palpus of *A. vinnula*; 19, male labial palpus of *A. strombiana*; 20, labial palpus of *A. heliograptia*; 20-1, male labial palpus of *A. eremitatos*; 21, venation of *A. vinnula*.

but can be distinguished by the following: uncus with shorter latero-caudal arms; juxta longer, as long as tegumen; valva broader basally, with stronger apical spine, costa nearly straight, then strongly angled beyond 2/3 length, ventral margin strongly arched beyond 2/3; aedeagus with a row of 12 short spines.

**Description.** Adult (Figure 6). Wingspan, 11.5 mm. Head shiny orange, white on frons and dorsal surfaces. Antenna with elongate, dark brown basal segment; flagellum orange-white throughout, except a few dark brown preapical segments, with a white apex. Second segment of labial palpus thickened, dark brown in basal 2/5 and shiny white beyond; third segment about 1/2 the length of the second, slender in the basal 1/2 and dilated with brush-like scales apically. Wings ground color, marking and venation similar to those of *gatoralis* Park. Hind tibia with dark brown scale tuft at base, middle, and apex. Spinous zones on abdominal tergite VI–VII. Female is unknown.

**Male genitalia** (Figures 113, 113A). Uncus bifurcate, nearly flat on caudal margin; lateral arms about 1/3 the length of the uncus. Tegumen moderately long, about 1/2 the length of the valva. Valva elongate, broad at base and narrower toward apex; costa nearly straight, then strongly angled at 3/5; ventral margin slightly convex before 2/3 length, then concave; cucullus more or less short, birdshead-shaped, with a strong apical spine at lower corner of distal margin, strong setae along near margins; apex sharply produced. Juxta elongate, as long as tegumen, with triangular weakly

sclerotized latero-caudal lobes; anterior margin produced medially. Vinculum narrow, band-like. Aedeagus more or less slender, shorter than valva; cornuti consisting of a row of 12 short spines in distal 1/2.

**Distribution.** Papua New Guinea (Morobe).

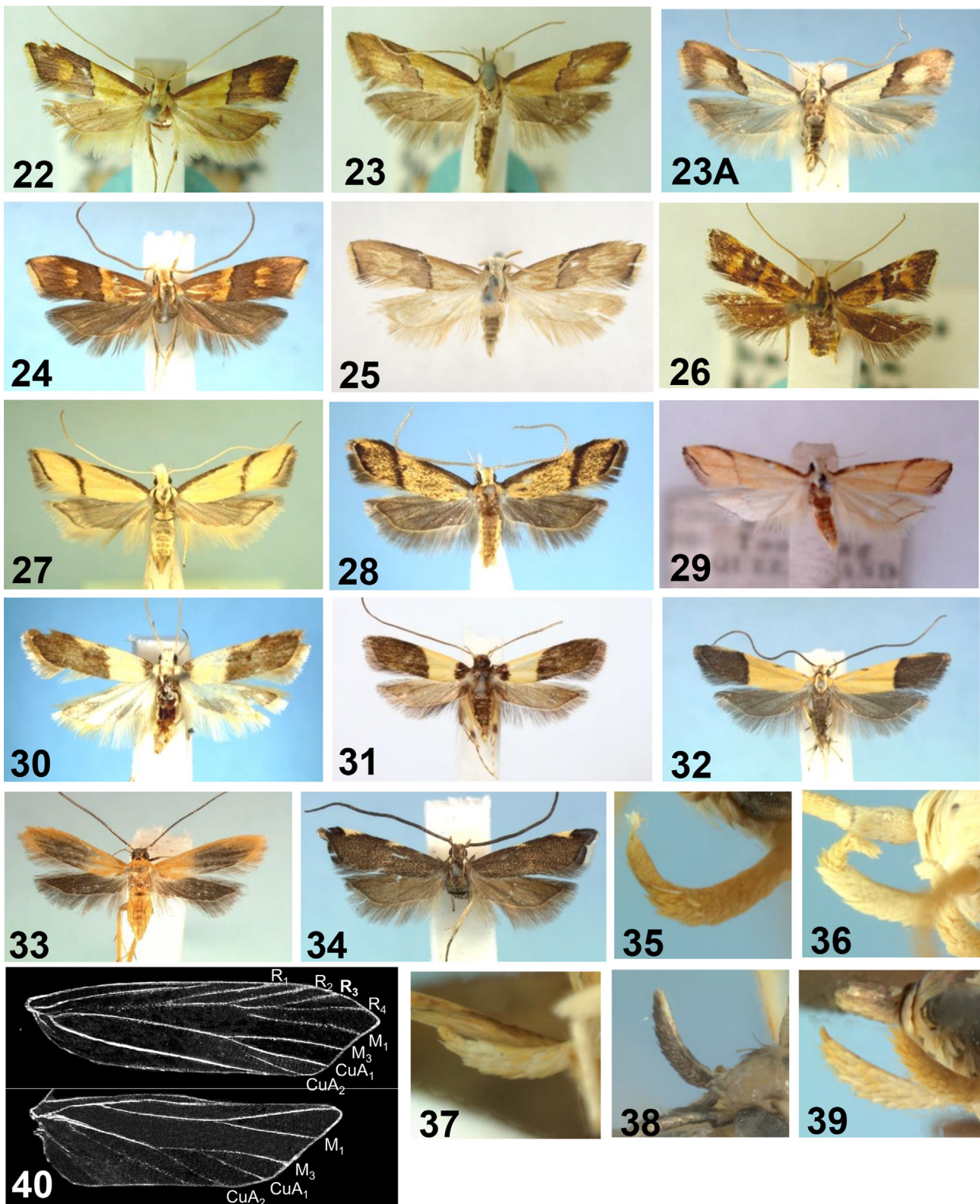
**Etymology.** The species name is derived the Latin, *sub* (under, below), with the name of the TS of the genus.

#### The *vinnula* species-group

The *vinnula* species-group is differentiated from the *pancala* species-group by the various colorful ground color with similar maculation in both wings, forewing venation with  $R_2$  stalked with  $R_{3+4}$ ,  $M_2$  absent, the characteristically specialized labial palpus, and the male genital character. The group comprises five species, including *A. heliograptia* Meyrick and four other new species.

#### Key to the species of the *vinnula* species-group

- Both wings ground color reddish orange (Figures 15, 20) ————— *A. heliograptia* Meyrick  
Both wings ground color orange or orange-white ————— 2
- Both wings ground color orange ————— 3  
Both wings ground color orange-white ————— 4
- Head and thorax pale brownish dorsally; third segment of labial palpus flattened with scale tuft apically; male genitalia with



**Figures 22–40.** Adult, labial palpus, and venation of *Crocantnes* species: 22, *C. prasinopis* Meyrick, paratype, BMNH; 23, *C. glycina* Meyrick, ANIC; 23A, ditto; 24, *C. zonodesma* Lower, ANIC; 25, *C. thermobapta* Lower, ANIC; 26, *C. halurga* Meyrick, paratype, BMNH; 27, *C. perigrapta* Meyrick, paratype, ANIC; 28, *C. acroxantha* Lower, ANIC; 29, *C. epitherma* Lower, BMNH; 30, *C. thiomorpha* Turner, ANIC; 31, *C. doliopa* Meyrick, ANIC; 32, *C. microdelpha* Lower, ANIC; 33, *C. gracilosa* Park, holotype, USNM; 34, *C. diula* Meyrick, ANIC; 35, male labial palpus of *prasinopis* Meyrick; 36, ditto, *C. glycina* Meyrick; 37, ditto, *C. zonodesma* Lower; 38, ditto, *C. gracilosa* Park, male; 39, ditto, *C. diula* Meyrick; 40, venation of *C. prasinopis* Meyrick. ANIC = Australian National Collection of Insects; BMNH = British Natural History Museum; USNM = National Museum of Natural History.

broad, conic uncus, valva without such process at base of dorsal margin (Figures 13, 18, 114), —————*A. vinnula* Park, sp. nov. Head and thorax dark brown dorsally; third segment of labial palpus slender, strongly curved into S-shape; male genitalia with slender, long uncus, valva with basal curved process at base of dorsal margin (Figures 14, 19, 115)—————

—————*A. strombiana* Park, sp. nov.

4. Forewing with white, distinct, submarginal line angled medially; hindwing with black markings including rounded spots medially; male genitalia with arrow-shaped uncus, valva with short apical spine (Figures 16, 117) —————*A. cordispina* Park, sp. nov. Forewing without marginal line; hindwing with black markings, no such rounded spots medially; male genitalia with simply slender uncus, valva with long spine on ventral margin beyond 3/4 (Figures 17, 22, 118) —————*A. eremitatos* Park, sp. nov.

#### 7. *Aprosoesta vinnula* Park, sp. nov.

(Figures 13, 18, 18A, 21, 114, 114A, 146, 146A)

*Type.* Holotype: ♂, Col. Becker PNG 2972, Papua New Guinea, Madang, Brahman Mission 200m, 11–15 X 1992, V. O. Becker Col., gen. slide no. CIS-5619/Park. Paratype: 1♂, 3♀, same data as the holotype, gen. slide no. CIS-5638/Park (♀) [USNM].

*Diagnosis.* This new species can be distinguished from the others by the specialized, broadly flattened third segment of the labial palpus (Figure 19) in the male, and the male genital structure with a very broad, more or less triangular uncus, differing from the slender uncus in the others; and the different structures of juxta and the aedeagus.

*Description.* Adult (Figure 13). Wingspan, 13 mm. Head shiny pale brownish dorsally, with pale orange scales posteriorly; with well-developed pale orange collar. Antenna about 1.3 times longer than forewing length; basal segment slender, dark brown dorsally, orange-white laterally; flagellum shiny, orange-white throughout, with pale brownish annulations. Labial palpus (Figure 18) with sexual dimorphism: in male (Figure 17), second segment thickened with appressed scales, strongly recurved, shiny orange white, except dark brown scales on ventral surface in apical third; third segment broadly flattened with triangular scale tuft apically, shorter than second, shiny orange white; in female (Figure 17A), second segment normally slender, second segment with brownish scales apically, third segment normally slender, shorter than second. Tegula orange-white; thorax brownish dorsally. Foretibia orange-white with brownish in distal quarter; midtibia orange-white ventrally, grayish orange dorsally, with dark brown scales apically; hindtibia with dark brown scales medially and brownish scales apically. Forewing ground color orange, with complex of dark brown fascia: basal fascia small; subbasal fascia broad, band-like; antemedian fascia moderately broad; median fascia very broad, with yellowish spot centrally, followed by two similar spots surrounded by dark brown circles medially; postmedian fascia broadly expanded to zigzag on inner margin medially, with convex outer margin; subterminal fascia consisting of six to seven spots; costa arched beyond 3/4 length; apex acute; termen strongly concave; fringe with two small dark brown spots on costa pre-apically and four to five elongate spots along termen; venation (Figure 21) with  $R_1$  arising from middle of cell;  $R_2$  and  $R_{3+4}$  stalked for basal quarter;  $R_3$  and  $R_4$  stalked at middle;  $R_5$  absent;  $M_1$  remote at base;  $M_2$  absent;  $M_3$  nearly straight;  $CuA_1$  and  $CuA_2$  stalked at basal fifth. Hindwing with similar markings as on the forewing; apex acute; termen oblique, nearly straight; fringe alternated with orange and dark brown scales in basal quarter length, grayish brown along inner margin; venation similar to the *pancala* species-group, with  $M_2$  absent. Abdomen light orange, with dark brown transverse bands on the first to seventh

segments, dark fuscous bands on the eighth segment, and grayish orange terminally.

*Male genitalia* (Figures 114 and 114a). Uncus broad basally, more or less triangular. Tegumen well-developed, with small triangular process. Valva elongate; basal 1/2 broad; cucullus thumb-like, with strong bristle-like setae along outer margin. Juxta plate broad. Aedeagus very stout, shorter than valva, broader towards apex, width in distal part broader than base of valva, with a spine apically; cornuti consisting of various shapes of sclerites as shown in Figure 120A.

*Female genitalia* (Figures 146, 146A). Papillae anales short. Ductus bursae extremely broad, as wide as abdominal segment VIII, nearly parallel sided. Corpus bursae small; signum absent.

*Distribution.* Papua New Guinea (Madang).

*Etymology.* The species name is derived from the Latin, *vinnulus* (sweet, charming).

#### 8. *Aprosoesta strombiana* Park, sp. nov.

(Figures 14, 19, 115, 115A)

*Type.* Holotype: ♂, Col. Becker, PNG 864, Papua N. Guinea, Morobe, Wau 1000m, 17–30 IX 1992, V. O. Becker Col., gen. slide no. CIS-5620/Park. Paratype: 1♂, same data as the holotype [USNM].

*Diagnosis.* The wing color pattern of the new species is superficially similar to that of the preceding new species, *A. vinnula* sp. nov., but can be distinguished by the less complicated markings in both wings and the specialized labial palpus with slender, strongly curved into the S-shaped third segment (Figure 19).

*Description.* Male (Figure 14). Wingspan, 14 mm. Head dark brown dorsally; face silvery white; collar with dark brown scales. Antenna about 1.3 times longer than forewing length; basal segment slender, pale grayish brown dorsally, blackish ventrally; flagellum pale grayish orange throughout. Second segment of labial palpus thickened, stout, with appressed scales dorsally and some loose scales ventrally, strongly recurved, pale orange outwardly and shiny orange-white inwardly, with dark brown scales apically; third segment (Figure 19) in male, slender, curved into S-shape, longer than second segment, shiny orange-white dorsally, brownish ventrally. Tegula dark brown. Thorax dark brown. Hind tibia with pale orange scales dorsally. Forewing ground color orange-white, with a row of setae along inner margin; subbasal fascia broad, merged with dark brown antemedian fascia, not reaching the costa, followed by an orange-white band; discal spot vertically elongated, connecting to postmedian fascia basally; postmedian fascia brownish, occupying broadly from 3/4 of costa to near tornus; costa gently arched beyond 3/4 length; apex produced, falcate beyond apex; termen oblique, slightly sinuate; fringe alternated with dark brown and orange-white scales; venation similar to that of the preceding species, *A. vinnula* sp. nov. Hindwing with dark brown subbasal fascia, divided with an oblique band in upper middle, occupying 1/3 of wing; a well-developed, large C-shaped marking medially and a smaller ovate one below it; postmedian dark brown fascia well-developed; apex sharply produced; termen sinuate; fringe concolorous. Hind tibia with dark brown rough scales dorsally. The female is unknown.

*Male genitalia* (Figures 115, 115a). The male genitalia are quite different from those of *A. vinnula* sp. nov. Uncus slender, bar-shaped, as long as tegumen, sclerotized, with acute apex. Tegumen narrow, short. Valva broad basally, elongated, with slender, strongly curved basal process at the base of the costa, with dense hairs on dorsolateral surface; costa slightly concave; ventral margin emarginated near basal 1/3 length, then gently arched; cucullus narrower towards apex, with strong bristle-like setae densely along ventral margin; apex acute, with short, strong spine. Juxta relatively small, with digitate caudal processes, about 2/3 length of

juxta. Aedeagus stout, width as broad as base of valva, with conic apical process; cornutus as in Figure 115A.

*Distribution.* Papua New Guinea (Morobe).

*Etymology.* The species name is derived from the Latin, *strombus* (spiral), referring to the S-shaped third segment of the labial palpus.

#### 9. *Aprosoesta heliograpt* (Meyrick, 1929)

(Figures 15, 20, 116, 116A)

*Crocant* *heliograpt* Meyrick, 1929: 520. TL: Dampier Island, Papua [BMNH].

*Diagnosis.* Male (Figure 15). Wingspan, 17 mm. This species can be easily distinguished from others of the group, by having a deep reddish orange ground color in both wings with a blackish zigzagged subterminal line and blackish terminal fascia. The third segment of the labial palpus (Figure 20) is similar to that of *A. strombiana* sp. nov., but it is more broadly flattened.

*Male genitalia* (Figures 116, 116A). See Clarke (1965, Pl. 10, Figures 3 and 3b).

*Material examined.* 1♂ (holotype), Papua, Kastar, Dampier Island, Feb. 1914 (Meek), in the BMNH; 1♀, Papua N. Guinea- Col. Becker PNG 1340, Morobe. Bulolo Gorge- 800 m, 21 IX 1992, Col. V. O. Becker, gen. slide no. CIS-5631/Park.

*Distribution.* Indonesia (Papua), Papua New Guinea.

*Remarks.* The species was described, based on a single male, collected from Dampier Island in the east end of West Papua.

#### 10. *Aprosoesta cordispina* Park, sp. nov.

(Figures 16, 117, 117A, 117B)

*Type.* Holotype: ♂, Papua New Guinea, Madang, Brahman Mission 200 m, 11–15 x 1992, V. O. Becker Col; Col. Becker, PNG 2975, gen slide no. CIS-6115/Park [USNM].

*Diagnosis.* The new species is superficially similar to the preceding new species, *A. strombiana* sp. nov., in the wing maculation, but it can be differentiated by the orange-white head and thorax dorsally, the shiny silvery-white collar, and more simple maculation in the forewing. The labial palpus was missed and could not be compared.

*Description.* Male (Figure 16). Wingspan, 13.5 mm. Head shiny, orange-white dorsally; face silvery white; collar with shiny, silvery-white scales. Antenna about 1.3 times longer than forewing length; basal segment slender, dark brown dorsally, orange-white laterally; flagellum clothed with brownish scales in basal few segments, then orange-white throughout. Labial palpus missing. Tegula and thorax orange-white. Hind tibia orange-white, with rough grayish orange scales near base, middle and apex. Forewing maculation similar to that of *A. strombiana* sp. nov., with brownish antemedian and postmedian fascia, but much paler, not clear to be diagnosed; costa strongly arched beyond 3/4 length; apex produced, falcate beyond apex; termen oblique, slightly sinuate; fringe alternated with dark brown and orange-white scales; venation similar to that of the preceding species, *A. vinnula* sp. nov., but  $M_1$  curved toward base of  $R_2$ . Hindwing with similar basal fascia, but the median dark brown markings are divided into two parts, whereas it is C-shaped in *A. strombiana*; postmedian dark brown fascia distinct, followed by broad brownish band and orange-white apical zone; apex more sharply produced than the preceding species; termen oblique; fringe alternated with orange-white and brownish scales along termen, dark brown sacs along inner margin. The female is unknown.

*Male genitalia* (Figures 117, 117A, 117B). Uncus sclerotized, trilobed medially, with median process longer, about three times longer than the triangular lateral ones. Gnathos absent. Valva broad at base, about three times wider than the cucullus, with long dense hairs on the dorsolateral surface; cucullus asymmetrical: left costa slightly expanded preapically, but nearly straight in the right one;

ventral margin emarginated before middle, nearly straight in left, but arched in right one; strong bristle-like setae densely clothed along ventral margin; apex acute, with strong spine. Juxta long; caudal margin nearly straight medially, and with small digitate caudal processes. Aedeagus broad at basal 2/5 length, then nearly circled, heavily sclerotized, with narrowly spatulate apex; cornutus consisting of a long row of short bristles.

*Distribution.* Papua New Guinea (Madang).

*Etymology.* The species name is derived from the Latin, *cord* (heart) and *spin* (spine), referring to the spine at the apex of valva in the male genitalia.

#### 11. *Aprosetia eremitatos* Park, sp. nov.

(Figures 17, 20-1, 118, 118A)

*Type.* Holotype: ♂, Indonesia, Papua, Kekamatan Nissan, Wal-mak, 1710 m, 4° 07' S, 138° 38' E, 31 i 09, 2005, at light; Disturbed montane forest, UNCEN-ZAM Expedition, Papua Indonesia 2005, gen. slide no. CIS-5971/Park [RMNH].

*Diagnosis.* This new species is differentiated from others of the preceding species-groups by having less maculated wings, a somewhat different male genital character, and a labial palpus with a short, strongly spiraled third segment (Figure 20-1), the male genitalia characterized by a strong spine on the ventral margin of the valva.

*Description.* Male (Figure 17). Wingspan, 14 mm. Head yellowish white, shiny dorsally; face yellowish white. Antenna with basal segment slender, pale yellow all around; flagellum pale orange throughout. Second segment of labial palpus thickened, very long, about three times the diameter of a compound eye, gently recurved, shiny pale yellow outwardly; third segment (Figure 20-1) strongly curved, slightly flattened in male. Tegula and thorax yellowish white. Hind tibia yellowish white, with rough scales dorsally and ventrally; tarsus yellowish white with a broad blackish band each. Forewing ground color creamy white, with broad subbasal, antemedian and terminal yellowish fascia; antemedian fascia nearly parallel sided; terminal fascia convex outward, followed by whitish subterminal line; costa slightly arched with short hairs anteriorly; apex acute; termen very oblique, concave medially; fringe grayish; venation similar to that *C. vinnula* sp. nov., with  $R_1$  arising from before middle of cell;  $R_2$  and  $R_{3+4}$  stalked for basal 1/3;  $R_3$  and  $R_4$  stalked near 2/3;  $R_5$  absent;  $M_1$  remote at base;  $M_2$  absent;  $M_3$  nearly straight;  $CuA_1$  and  $CuA_2$  short-stalked. Hindwing ground color and markings as same as forewing, but antemedian fascia broadest; apex very acute. The female is unknown.

*Male genitalia* (Figures 118, 118A). Uncus slender, slightly convex on lateral margin before middle, as long as tegumen. Vava broad basally, narrowed beyond 3/4 forming a neck, with strong spine on ventral margin beyond 4/5 and densely setose in the distal part; apex rounded. Juxta deeply concave in U-shaped on caudal margin. Aedeagus, stout, as wide as basal part of valva, narrowed from beyond 2/3, with sclerotized, spoon-shaped plate apically; cornuti consisting of several long spines and a bar with spicules internally.

*Distribution.* Indonesia, Papua.

*Etymology.* The species name is derived from the Greek, *erem* (a lonely place) with a Greek suffix “odes”, denoting resemblance.

#### *Crocant* *Meyrick, 1886*

*Crocant* *Meyrick, 1886*: 277; *Meyrick, 1925*: 231; Gaede, 1937: 509. TS: *C. prasinopis* *Meyrick, 1886*.

Since the genus *Crocant* was described, based on *A. prasinopis* *Meyrick*, most of the previously known species with an absent or remarkably reduced gnathos in the male genitalia were placed together in the genus *Crocant* *Meyrick*. However, many of them have some reliable morphological characters from the genus,



including a uniquely specialized labial palpus and different wing pattern with various colorful markings or different venations of both wings. They were separated from *Crocantnes* and described as a new genera (Park and Lee 2013a, 2013b, 2013c).

The genus is redefined with the following morphological characters: labial palpus with dimorphism, male with second segment long, thickened with rough scales, and third segment absent, aborted, or shortened, but female with normally slender third segment. Forewing normally elongate, with usually well-developed postmedian fascia; costa gently curved beyond 2/3; apex acute or normally produced; termen usually concave medially or slightly convex; venation (Figure 40) with  $R_2$  usually free or sometimes short-stalked with  $R_{3+4}$ ;  $R_3$  and  $R_4$  stalked;  $R_5$  absent;  $M_2$  absent;  $CuA_1$  and  $CuA_2$  short-stalked; cell opened. Hindwing usually unicolorous, as wide as forewing; apex acute; termen slightly concave or strongly oblique; venation with  $M_2$  absent;  $M_3$  and  $CuA_1$  stalked basally;  $CuA_2$  arising from the 1/2 length of the wing.

The genus is divided into four species-groups: the *prasinopsis* species-group with 16 known species, the *characotis* species-group with four known species, the *anacostola* species-group with two known species, and the *leucodonta* species-group with six known species. Eleven species are not arranged in these species-groups and are listed in "Group not assigned".

#### Key to species-groups of the genus *Crocantnes* Meyrick

1. Forewing with  $R_2$  free (except *C. gracilosa* sp. nov.); third segment of labial palpus shortened or atrophied  
-----The *prasinopsis* species-group  
Forewing with  $R_2$  stalked with  $R_{3+4}$ ; third segment of labial palpus variously shaped----- 2
2. Forewing ground color pale yellow to orange with a pair of transverse fascia or irregular complicated fascia----- 3  
Forewing uniform colored with purplish or mustard brown, often with orange-white narrow fascia (except *C. hagenensis* sp. nov.)-----The *leucodonta* species-group
3. Forewing with well-developed antemedian and postmedian transverse fascia -----The *characotis* species-group  
Forewing with irregular complicated transverse fascia -----  
-----The *anacostola* species-group

#### The *prasinopsis* species-group

The *prasinopsis* species-group of the genus *Crocantnes* is distinguished from the other species-group by the following combination of characters: (1) labial palpus of the male with second segment extremely long, slender, thickened, or flattened, and the third segment very short or atrophied; (2) forewing ground color light orange to reddish orange, with dark brown antemedian and postmedian fascia or dark brown throughout in distal part beyond postmedian fascia; (3) forewing venation with  $R_2$  usually free or sometimes stalked with  $R_{3+4}$ .

##### 1. *Crocantnes prasinopsis* Meyrick, 1886f

(Figures 22, 35, 40, 119, 119A)

*Crocantnes prasinopsis* Meyrick, 1886. Pro. Linn. Soc. N.S.W. 1886: 277; Meyrick, 1925: 231, Pl. 5, Figures 119a and 119b; Common, 1996: 116. TL: Port Moresby, Papua New Guinea, and E Australia [ANIC, BMNH (syntype)].

**Diagnosis.** Male (Figure 22). Wingspan, 12–15 mm. This species is externally very similar to the Australian species, *C. glycina* Meyrick described from Tasmania, Australia, and *C. zonodesma* Lower described from Queensland in wing pattern. It can be distinguished from *C. glycina* by the smaller size, the forewing with a broader postmedian fascia and nearly straight anterior margin (see details in the diagnosis of *C. glycina*), and from *C. zonodesma* by the light yellow forewing ground color and the paler hindwing

ground color. The second segment of the labial palpus is thickened, recurved beyond middle; third segment short, with white scale tuft apically (Figure 35), but normally slender in the female; venation (Figure 40) as described in the generic diagnosis; hindwing grayish orange, more grayish posteriorly.

**Male genitalia** (Figures 119, 119A). Differs from *C. glycina* by the valva with a shorter and broader cucullus, more deeply emarginated at 1/3 of ventral margin, the juxta with well-developed latero-caudal processes and more slender aedeagus.

**Material examined.** 1♂, Australia, 11°09'S, 132°09'E, Black Point, Cobourg pen. NT, 30 i 1977, E.D. Edwards coll. in ANIC, gen. slide no. CIS-5938/Park. A male syntype in BM, labeled as "Sydney, N. S. Wales, 4 i (19)38; *Crocantnes prasinopsis* Meyr., E. Meyrick det., Meyrick coll., Meyrick coll. BM1938-290".

**Distribution.** E. Australia (Tasmania), Papua New Guinea, Indonesia (Papua).

**Remarks.** This species is a common species in Australia, and it was described, based on specimens from eastern Australia and from Port Moresby, Papua New Guinea. A syntype is deposited in the BMNH.

##### 2. *Crocantnes glycina* Meyrick, 1906

(Figures 23, 23A, 36, 120, 120A)

*Crocantnes glycina* Meyrick, 1906: 400; Meyrick, 1925: 231;

Common, 1996: 116. TL: Tasmania, Australia [BMNH, syntype].

**Diagnosis.** Male (Figures 23, 23A). Wingspan, 15–17 mm. The species is superficially similar to *C. prasinopsis* Meyrick and *C. zonodesma* Lower, especially in the forewing color pattern and markings. It can be distinguished from *C. prasinopsis* by the larger size, the forewing with narrower, more oblique postmedian fascia, more serrated on the inner margin, and can be differentiated from *C. zonodesma* by the absence of brownish transverse streaks in the basal 1/2 of the forewing, the narrower postmedian fascia, serrated along the inner margin, and the paler hindwing. It is characterized by the labial palpus (Figure 36): third segment of the labial palpus strongly bent, less than 1/4 length of second segment, but normal in the female. Forewing ground color orange-white to light yellow; postmedian fascia yellowish brown, with purplish reflections, fine irregular blackish marks on inner margin, followed by a large ovate orange-white patch medially; costa with a distinct brownish yellow streak along the margin from base to 1/2 length. Hindwing grayish. Abdomen dark brown dorsally beyond third segment.

**Male genitalia** (Figures 120, 120A). Similar to those of the preceding species, but can be distinguished from the latter by the more elongate cucullus and the stouter aedeagus.

**Material examined.** 1♂, Australia, Black Mt., ACT. Light trap, 12 iii 1965, I.B.F. Common, in Aust. Nat. Ins. Coll., gen. slide no. CIS-5945/Park, in the ANIC.

**Distribution.** Papua New Guinea, E. Australia (Tasmania).

##### 3. *Crocantnes zonodesma* Lower, 1900

(Figures 24, 37, 121, 121A)

*Crocantnes zonodesma* Lower, 1900: 50; Meyrick, 1925: 231;

Common, 1966: 116. TL: Queensland [SAMA].

**Diagnosis.** Male (Figure 24). Wingspan, 16 mm. This species is externally similar to the preceding two species, but can be easily distinguished by having a broader costal brownish streak from base to middle and 2–3 linear, transverse, brownish streaks presented in the basal area, followed by a yellowish orange cross band; the postmedian fascia is broader, trapezoidal, less oblique; the hindwing is grayish brown uniformly; the labial palpus (Figure 37) with second segment thickened, is gently arched, and the third segment is very short.

**Male genitalia** (Figures 121, 121a). Differ from those of the preceding species by the uncus triangularly dilated at apex; the

tegumen with more distinctly developed triangular processes distally; the juxta long, as long as tegumen; and aedeagus larger.

**Material examined.** 1♂, Australia, 15°02'S, 126°40'E, Mogan Falls, W.A., 16–17, viii 1975, I.B.F. Common, gen. slide no. CIS-5937/Park, in the ANIC; one specimen labeled as “Duarina; 2940; *C. zonodesma* Low, Type; Specimen photog for Checklist Aust. Lep. Film 195126; SAMA Database No. 31-000687; Above Column Wx. Lower Coll.”. in the SAMA.

**Distribution.** Australia (Queensland).

**Remarks.** The species was described, based on two males.

#### 4. *Crocantthes thermobapta* Lower, 1920

(Figure 25)

*Crocantthes thermobapta* Lower, 1920: 65; Meyrick, 1925: 231; Common, 1996: 116. TL: Queensland [SAMA].

**Diagnosis.** Male (Figure 25). Wingspan, 12–14 mm. This species is superficially similar to *C. prasinopsis* Meyrick, but can be distinguished from the latter by the postmedian fascia convex on the inner margin. Lower (1920) noted that this species is very close to *C. zonodesma* Lower.

**Material examined.** One specimen, labeled as “Mackay; *Crocantthes thermobapta* Low. Type 4548; Specimen photog for Checklist Aust. Lep. Film 195124; SAMA Database No. 31-000684; Above Column Wx. Lower Coll.

**Distribution.** Australia (Queensland).

#### 5. *Crocantthes halurga* Meyrick, 1904

(Figures 26, 122, 122a)

*Crocantthes halurga* Meyrick, 1904: 399. TL: Queensland [BMNH, syntype].

**Diagnosis.** Male (Figure 26). Wingspan, 11 mm. The wing pattern is similar to that of *C. zonodesma*, but it is much smaller, deeper colored in the forewing with a more oblique termen, and the hindwing with a less sharply produced apex than that of *C. zonodesma*.

**Male genitalia** (Figures 122, 122A). Can be distinguished from those of *C. prasinopsis* and *C. glycina* by the shape of the valva and the expanded apex of the uncus, and from *C. zonodesma* by the elongate valva with dense stronger setae along the ventral and outer margins, and shorter juxta with stout caudal processes.

**Material examined.** 1♂, 15 miles S Millmerran, Queensland, 10 iv 1957, I.F.B. Common, gen. slide no. KTP-5/Park, in the ANIC. A syntype labeled as Duaringa, Queensland, December, in the BMNH.

**Distribution.** Australia (Queensland).

**Remarks.** The species was described, based on nine specimens (males and females).

#### 6. *Crocantthes perigrapta* Meyrick, 1904

(Figures 27, 123, 123A)

*Crocantthes perigrapta* Meyrick, 1904: 402; Meyrick, 1925: 231; Common, 1996: 116. TL: Queensland [BMNH, syntype].

**Diagnosis.** Male (Figure 27). Wingspan, 12–14 mm. This species is externally similar to *C. acroxantha* Lower, but can be distinguished by the forewing with a more yellowish ground color with narrower postmedian fascia concave outwardly, and the hindwing grayish light orange, whereas, in *C. acroxantha*, the forewing is finely irrorated with dark brown scales throughout on the ground, and the hindwing is more grayish brown. Morphological characters are diagnosed as follows: head, antenna, and thorax orange-white; forewing with narrow postmedian fascia, purplish brown, convex outwardly; costa with dark brown streak from base to middle; termen oblique, suffused with dark brown scales; fringe brownish, with yellowish basal line; hindwing ground color grayish light orange, with grayish shade before 2/3 length.

**Male genitalia** (Figures 123, 123a). Distinguished from the above preceding species by having strong process on costa of the valva medially, the clavate uncus, and the long juxta slightly bifurcate at apex, longer than tegumen.

**Material examined.** 1♂, Bresbone, Queensland, 16 ix 79. *Crocantthes perigrapta* Meyr. E. Meyrick det., Meyrick Coll. Meyrick Coll., BM 1938-290 (syntype), in the BMNH; 1♂, Toowoomba, Queensland, 16 iii 1950, IBF Common, Aust. Nat. Ins. Coll.; 1♂, Upper Allyn R., NSW 1500 ft, 11 xi 1960, I.F.B. Common & M.S. Upton, gen. slide no. KTP-3, in the ANIC.

**Distribution.** Australia (Duarina, Brisbane, Queensland, Glen Innes, Newcastle, Sydney, New South Wales).

#### 7. *Crocantthes acroxantha* Lower, 1896

(Figures 28, 124, 124A)

*Crocantthes acroxantha* Lower, 1896: 170; Meyrick, 1925: 231; Common, 1996: 116. TL: Duaringa, Queensland [BMNH].

**Diagnosis.** Male (Figure 28). Wingspan, 12 mm. This species is externally similar to *C. perigrapta* Meyrick, and *C. epitherma* Lower, but can be distinguished from them by the grayish brown hindwing. Morphological characters are diagnosed as follows: head, antenna, and labial palpus pale orange. Thorax pale orange dorsally. Forewing ground color pale orange, finely irrorated with blackish scales throughout; costa strongly arched beyond 3/4, with purplish brown streak along margin from base to middle and another shorter one beyond the postmedian fascia; postmedian fascia purplish brown, arising from 3/4 on costa and reaching 2/3 on inner margin; purplish brown marginal line well developed along termen, not reaching extremity; apex more or less acute; fringe dark brown with narrow, orange-white basal line. Hindwing brownish; fringe concolorous, paler than that of forewing. Abdomen yellowish dorsally.

**Male genitalia** (Figures 124, 124a). Similar to those of *C. perigrapta* Meyrick, but differentiated by the uncus dilated laterally at 2/3 length, the valva more elongate with shorter process on the costa of valva, the juxta shorter, broadened distally, with emargination medially.

**Material examined.** 1♂, Australia, 15 km S of Millmerran, Queensland, 10 iv 1957, I.B.F. Common, gen. slide no. CIS-6057/Park, in the ANIC; 1 specimen labeled as “25. 12. 86; *C. acroxantha* Low, Type; specimen photog for Checklist Aust. Lep. Film 23813; SAMA Database No. 31-000679; Above Column Ex. Lower Coll., in the SAMA. A type specimen from Duaringa, Queensland is in the BMNH.

**Distribution.** Australia (Queensland).

**Remarks.** Lower (1896) described two species of the genus *Crocantthes* from Australia and later (1897) described a third species *microdelpha* Lower belonging to *Gelechia*, based on seven species, collected in Mackay and Rockhampton, Queensland.

#### 8. *Crocantthes epitherma* Lower, 1896

(Figure 29)

*Crocantthes epitherma* Lower, 1896: 170; Meyrick, 1925: 231; Common, 1996: 116. TL: Queensland [SAMA].

**Diagnosis.** Male (Figure 29). Wingspan, 10–12 mm. This species is externally similar to *C. perigrapta* Meyrick, but can be distinguished by the reddish orange forewing ground color and orange-white hindwing; postmedian fascia fine brownish, arising from 3/4 of costa approaching 3/4 of inner margin. Morphological characters are diagnosed as follows: head, and antenna pale orange; labial palpus pale orange, third segment fuscous in apical 1/2 on inner surface; forewing ground color reddish orange, costa with dark brown streak along basal 1/2, postmedian line from beyond 2/3 length of costa to 3/5 of inner margin, dark brown marginal line well developed along termen, hardly reaching the inner margin; apex acute; hindwing white, with a fine blackish postmedian line

from 3/4 of costa approaching 3/4 of the inner margin, but not reaching. Abdomen yellowish dorsally.

**Male genitalia.** The type in the SAMA, missing abdomen. A specimen in the BMNH has not been dissected.

**Material examined.** A specimen labeled as “Mackay, Queensland”, in the BMNH; one specimen labeled as “Mackay; *C. epitherma* Low; specimen photog for Checklist Aust. Lep. Film 195121; SAMA Database No. 31-000682; Above Column Ex. Lower Coll., in the SAMA.

**Distribution.** Australia (Queensland).

**Remarks.** Types originally consist of 11 specimens, with four in the SAMA.

### 9. *Crocantbes thiomorpha* Turner, 1933

(Figures 30, 125, 125A)

*Crocantbes thiomorpha* Turner, 1933: 179; Meyrick, 1925: 231;

Common, 1996: 116. TL: Eungella, N. Queensland [ANIC].

**Diagnosis.** Male (Figure 30). Wingspan, 15–17 mm. This species is distinguished from all the preceding species by the forewing color pattern with a yellowish brown zone occupying the distal 1/2 of wing. It is superficially similar to *C. doliopa* Meyrick, but can be distinguished by the larger size, with the yellowish brown fascia occupying more than 1/2 of the wing and a narrow pale orange streak along the costa beyond 1/2. The abdomen is light orange dorsally.

**Male genitalia** (Figures 125, 125A). Uncus slender, nearly parallel sides, with dilated apex. Tegumen long, narrow, weakly sclerotized. Valva elongate, with costal process before apex, with strong, long setae along the margin; costa concave before the process; ventral margin emarginated medially. Juxta long, jar-shaped, dilated medially and narrowed distally, bifurcate apically. Aedeagus short, about 1/2 length of aedeagus, narrowed apically.

**Material examined.** 1♂, Eungella, N. Queensland, 12 x (19)28. *C. thiomorpha* Turner (syntype); two additional specimens with same data as the type in the ANIC.

**Distribution.** Australia (N. Queensland).

**Remarks.** The species was described on the basis of three specimens deposited in ANIC.

### 10. *Crocantbes doliopa* Meyrick, 1921

(Figures 31, 147)

*Crocantbes doliopa* Meyrick, 1921: 434. TL: Cairns, Queensland [SAMA].

**Diagnosis.** Female (Figure 31). Wingspan, 13 mm. This species is similar to *C. thiomorpha* Lower, but can be distinguished by the smaller size; the head purplish dark brown; the forewing with more distinct brownish basal fascia; the purplish brown terminal zone in distal part shorter, without the orange-white costal streak; and the hindwing grayish.

**Female genitalia** (Figure 147). Apophyses anteriores long, about 2/3 length of apophyses posteriors. Lamella postvaginalis elongated, with caudal margin emarginated medially; lamella antevaginalis broad, as wide as abdominal segment, crescent, with round anterior margin. Ductus bursae narrow, shorter than 1/2 length of corpus bursae. Corpus bursae elongate, large; signum transversally elongate, finely dentate on upper margin and larger dentitions on lower margin.

**Material examined.** 1♀, Australia, Mission Beach, Queensland, 380 m, 17°54'S, 146°06'E, 28 Aug. 1977, I.F.B. Common, gen. slide no. KTP-2, in the ANIC; 1 specimen labeled as “Kuranda 20 ? 07 F.P. Dodo; *Crocantbes doliopa* Type 4654 Meyr.; 1 specimen photog for Checklist Aust. Lep. Film 195122; SAMA Database No. 31-015512; Above Column Ex. Lower Coll., in the SAMA.

**Distribution.** Australia.

**Remarks.** The species was described, based on a female.

### 11. *Crocantbes microdelpha* (Lower, 1897)

(Figures 32, 126, 126A)

*Gelechia microdelpha* Lower, 1897: 56. TL: Broken Hill., N.S.W., Queensland [SAMA].

*Crocantbes microdelpha*; Meyrick, 1925: 231.

**Diagnosis.** Male (Figure 32). Wingspan, 10 mm. The forewing is light yellow in basal 3/5, with a small blackish spot at basal 1/3 on costa; distal zone beyond postmedian fascia purplish fuscous, occupying 1/3 of the wing, with a yellowish short streak along the costa medially; hindwing grayish brown. The wing venation is well in accordance with that of *C. prasinopsis* Meyrick, with  $R_2$  free, but the third segment of the labial palpus in the male is normally slender, differing from congeners.

**Male genitalia** (Figures 126, 126A). Uncus relatively short, narrowed toward apex; apex rounded. Valva nearly parallel sided; dorsal margin angled near basal 1/4, then concave; ventral margin emarginated at basal 1/3, with long setae along margin; apex rounded. Vinculum narrowly developed. Aedeagus slender, shorter than aedeagus, bent beyond 2/3; cornutus with short row of spicules.

**Material examined.** 1♂, Australia- 27° 33' S, 151° 59' E, Prince Henry Heights, 620 m, Toowoomba, Queensland, 8 v 1983, I.F.B. Common, gen. slide no. CIS-6005/Park; 1 specimen labeled as “8. 11. 96, Broken Hill; 3386; *C. microdelpha* Low, Type; specimen photog for Checklist Aust. Lep. Film 195123; SAMA Database No. 31-000683; Above Column Ex. Lower Coll., in the SAMA.

**Distribution.** Australia (Queensland).

**Remarks.** This species was originally described in the genus *Gelechia*, based on a female. Lower (1897) referred that this species is the nearest to *porphyrloma* Lower, but the name “*porphyrloma*” has not appeared previously or been published. The male labial palpus differs from other congeners in having a more or less slender third segment, but the venation is well in accordance with that of the type species, with  $R_2$  free in the forewing.

### 12. *Crocantbes gracilosa* Park, sp. nov.

(Figures 33, 38, 127, 127A)

**Type.** Holotype: ♂, Papua New Guinea, Madang, Brahman Mission, 200 m, 11-15 x 1992, V.O. Becker; Col. Becker, PNG 2996, gen. slide no. CIS-5943/Park. Paratypes: 3♂, same data as the holotype [USNM].

**Diagnosis.** This new species is distinguished from congeners by the extremely smaller size, the narrowed forewing with colored, labial palpus with thickened second segment and lacking a third segment.

**Description.** Male (Figure 33). Wingspan, 7.5–8.0 mm. Head purplish dark fuscous, with orange-white scales posteriorly. Basal segment of antenna dark fuscous dorsally, orange-white ventrally; flagellum dark brown in basal 3/5, then orange-white. Labial palpus with dimorphism: male with second segment thickened, flattened, with rough scales ventrally, slightly recurved, dark brown laterally, orange-white in base and beyond middle; third segment very short, without scale tuft apically (Figure 38); female with normally slender third segment. Tegula and thorax deep orange. Forewing narrow, uniform deep orange, with dark fuscous shades beyond 2/5; costa nearly straight medially, then arched beyond 3/4; apex sharply produced; termen very oblique; fringe orange gray; venation with  $R_1$  arising from middle of cell; distance between  $R_1$  and  $R_2$  about twice length of  $R_2$  and  $R_{3+4}$ ;  $R_2$  short-stalked, less than 1/10 length of  $R_2$ ;  $R_3$  and  $R_4$  short-stalked, about 1/5 length of  $R_4$ ;  $R_4$  to

costa; R<sub>5</sub> absent; M<sub>1</sub> remote; M<sub>2</sub> absent; M<sub>3</sub> connate with CuA<sub>1+2</sub>; CuA<sub>1</sub> and CuA<sub>2</sub> stalked at basal 1/5 length of CuA<sub>1</sub>. Hindwing as wide as forewing; uniform brownish; apex sharply produced; termen very oblique; fringe concolorous with ground color of wing; venation similar to that of congeners. Hind tibia clothed with orange scales; tarsi dark fuscous in basal segment, then orange-white.

**Male genitalia** (Figures 127, 127A): Uncus damaged. Valva elongated, very long; dorsal margin deeply concave beyond middle, then strongly convex, densely setose in distal 1/3; apex rounded. Vinculum band-shaped, narrow, more or less truncate on anterior margin medially. Aedeagus slender, lanceolate apically, about 1/2 the length of genitalia.

**Distribution.** Papua New Guinea (Madang).

**Remarks.** The venation of the new species is well in accordance with the TS of the genus.

**Etymology.** The species name is derived from Latin, *gracil* (slender), referring to the narrow forewing.

### 13. *Crocantbes diula* Meyrick, 1929

(Figures 34, 39, 128, 128A)

*Crocantbes diula* Meyrick, 1904: 398. TL: Duaringa, Queensland [BMNH].

**Diagnosis.** Male (Figure 34). Wingspan, 11–13 mm. This species is uniquely characterized by the third segment of the labial palpus being very short, aborted in the male (Figure 39), while normal in the female. The forewing venation is similar to that of the TS, with R<sub>2</sub> free, R<sub>3</sub> very short and stalked with R<sub>4</sub> beyond 3/4, and M<sub>3</sub> remote to CuA<sub>1+2</sub>. The species is characterized by the forewing maculation with a small oblique yellowish white mark on the costa before the middle and a wedge-shaped, yellowish costal patch beyond 3/4 length of the costa, and the fringe is dark brown in the basal 1/2 and orange-white in the distal 1/2.

**Male genitalia** (Figures 128, 128A). The genital character is also somewhat different from that of congeners as shown in the figures.

**Material examined.** 1♂, Australia- Duaringa, Queensland, 28 April; *Crocantbes diula* Meyr.; E. Meyrick det.; Meyrick Coll.; Meyrick Coll. BM 1938-290, syntype, in the BMNH; 1♂, 17°22'S, 145°19'E, 8 km NW of Herbeton, Queensland, 27 vii 1977, I.F.B. Common & E.D. Edwards, gen. slide no. CIS-6000/Park, in the ANIC.

**Distribution.** Australia (Queensland).

**Remarks.** The species was described based on a male and a female. As a result of some differences in the forewing maculation and venation and the male genitalia, further study is needed on the generic status.

### The *characotis* species-group

The *characotis* species-group of the genus *Crocantbes* is distinguished from the *prasinopis* species-group based on the following combination of characters: (1) labial palpus of the male with second segment extremely long, slender or sometimes flattened; third segment very short or atrophied; (2) forewing ground color pale yellow to orange, with well-developed dark brown antemedian and postmedian narrow fascia; (3) forewing venation with R<sub>2</sub> usually stalked with R<sub>3+4</sub>.

### 14. *Crocantbes characotis* Meyrick, 1916

(Figures 41, 53, 129, 129A)

*Crocantbes characotis* Meyrick, 1916: 592. TL: Port Darwin, N. Australia [BMNH].

**Diagnosis.** Male (Figure 41). Wingspan, 11 mm. This species is similar to *C. chordotona* Meyrick, but can be distinguished by the smaller size, the orange forewing ground color, and because the antemedian fascia is deeply concave outward, whereas in the latter it is convex, and the hindwing is grayish brown. The head and thorax are light orange dorsally and the face is orange-white. The

second segment of the labial palpus is very long, more than three times the length of the first; the third segment is atrophied (Figure 53). The forewing is elongate, with the antemedian fascia dark brown at 1/3 length and the postmedian fascia at 2/3 length, strongly incurved; the costa is nearly straight before 3/4, with a short dark brown streak basally; termen is oblique, with a dark fuscous terminal line; fringe is grayish brown. The hind wing is grayish brown. The abdomen is dark brown dorsally. The male genitalia show remarkable differences from those of the latter.

**Male genitalia** (Figures 129, 129A): Uncus broadened apically. Valva broad in basal 1/2 and elongate-quadrate beyond with truncate caudal margin, densely setose in distal 1/2; dorsal margin concave beyond middle; ventral margin slightly concave near 2/5 on ventral margin. Juxta with median narrow process caudally. Vinculum narrow, band-shaped. Aedeagus stout, about 2/3 length of valva; cornuti consisting of two series of spines.

**Material examined.** 1♀, Port Darwin, N. Australia, in the BMNH; 1♂, 15°02'S, 126°55'E, Drysdale River, W. A., 3-8 viii 1975, I. B. F. Common and M. S. Upton, gen. slide no. CIS-6003/Park (holotype, abdomen missing), in the ANIC; 1♂, Marieeba, Queensland, Australia, 27 vii 1992 (DH Habeck) in McGuire Center.

**Distribution.** Australia (N. Queensland).

**Remarks.** The species was described, based on a female.

### 15. *Crocantbes chordotona* Meyrick, 1916

(Figures 42, 54, 130, 130A)

*Crocantbes chordotona* Meyrick, 1916: 592. TL: Townsville, Queensland, Australia [BMNH].

**Diagnosis.** Male and female (Figure 42). Wingspan, 13–14 mm. This species is similar to *C. characotis* Meyrick, but can be distinguished by the larger size; the second segment of labial palpus (Figure 54) is long, dilated beyond the middle, more than six times the length of the first; the third segment is short, nearly infuscated toward the apex, about 1/10 the length of the second segment; the forewing ground color is pale-yellowish orange, with well-developed subbasal fascia; antemedian and postmedian fascia are convex, and the hindwing is orange white. The abdomen is pale orange.

**Male genitalia** (Figures 130, 130A): Uncus bifurcated, deeply concave on the caudal margin, V-shaped. Valva broad at base, narrowed at basal 2/5; dorsal margin concave medially, then broadly expanded; caudal margin gently arched; ventral margin emarginated near basal 2/5, with long setae along margin beyond 2/5. Vinculum narrow, band-shaped. Aedeagus stout, about 4/5 length of valva; cornuti consisting of a row of spines apically.

**Material examined.** 1♀, Townsville, Queensland, (holotype, abdomen missing), in the BMNH; 1♂, 4 miles W Paluma, 3000 ft, 13 iv 1969, I. B. F. Common & M. S. Upton, gen. slide no. CIS-6001/Park, in the ANIC.

**Distribution.** Australia (N. Queensland).

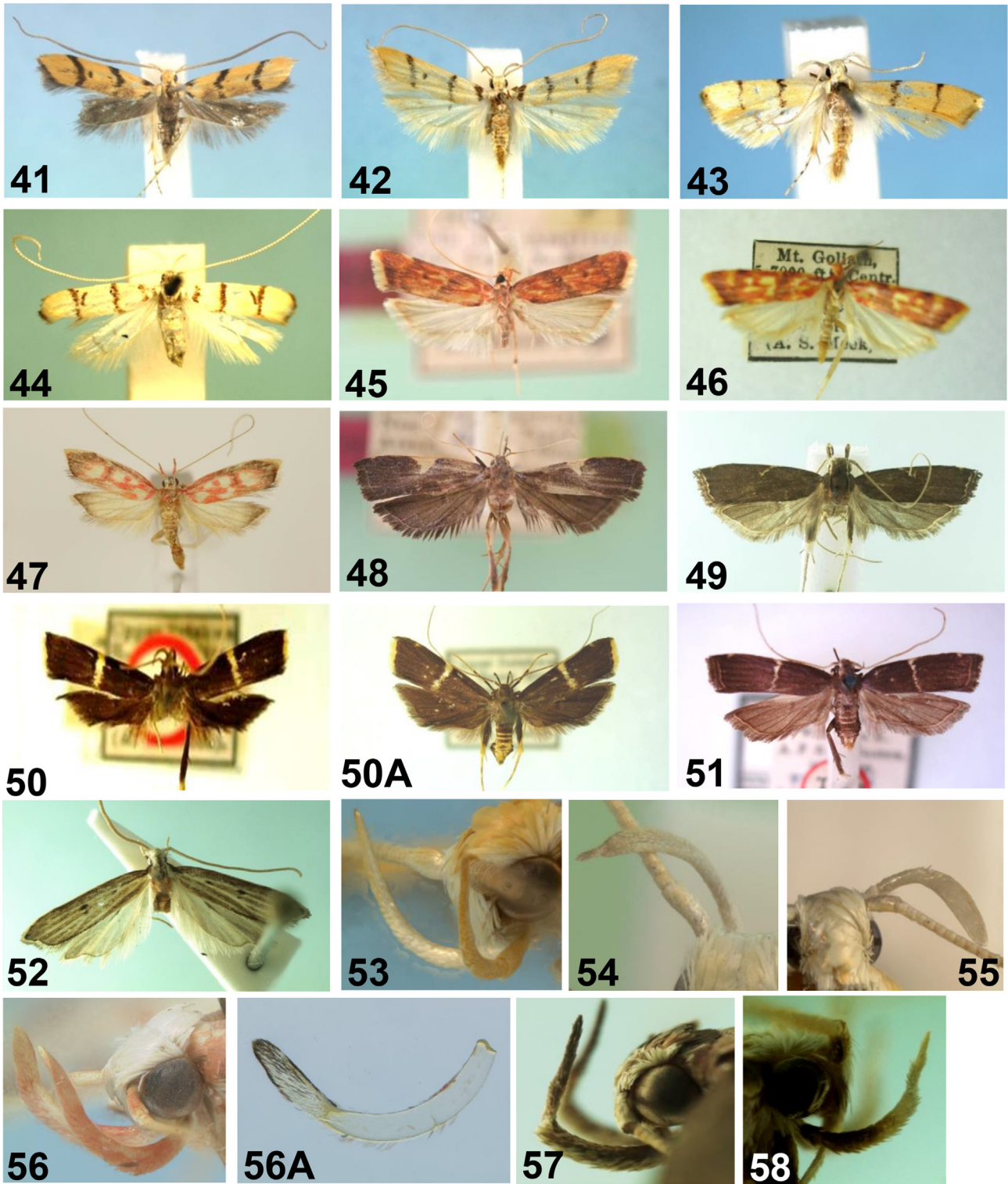
**Remarks.** The species was described based on a female.

### 16. *Crocantbes venustula* Turner, 1933

(Figures 43, 55)

*Crocantbes venustula* Turner, 1933: 179; Meyrick, 1925: 231; Common, 1996: 116. TL: Cape York, N. Queensland [ANIC].

**Diagnosis.** Male (Figure 43). Wingspan, 10 mm. This species is externally similar to *C. trizona* Lower and *C. characotis* Meyrick, but can be distinguished from them by the zigzagged antemedian fascia on the forewing, and the unique character of the labial palpus, with the second segment long, flattened, strongly recurved; third atrophied (Figure 55). The head and labial palpus are pale orange, the antenna is orange-white throughout to the apex. The forewing ground color is pale orange; antemedian fascia dark brown, zigzagged medially; postmedian fascia angled at the middle, arising



**Figures 41–58.** Adult and labial palpus of *Crocanthes* species: 41, *C. charcotis* Meyrick, ANIC; 42, *C. chordotona* Meyrick, ANIC; 43, *C. venustula* Turner, holotype, ANIC; 44, *C. trizona* Lower, ANIC; 45, *C. anacostola* Diakonoff, holotype, RMNH; 46, *C. temeraria* Meyrick, BMNH; 47, *C. sidonia* Meyrick, USNM; 48, *C. leucodonta* Diakonoff, holotype, RMNH; 49, *C. susuensis* Park, USNM; 50, *C. monodesma* Meyrick, holotype, BMNH; 50A, *C. fallax* Durrant, BMNH; 51, *C. crypsicola* Durrant, BMNH; 52, *C. hagenensis* Park, USNM; 53, male labial palpus of *C. charcotis* Meyrick; 54, ditto, *C. chordotona* Meyrick; 55, ditto, *C. venustula* Turner; 56, ditto, *C. sidonia* Meyrick; 56A, ditto, scales removed; 57, ditto, *C. leucodonta* Diakonoff; 58, ditto, *C. susuensis* Park sp. nov. ANIC = Australian National Collection of Insects; BMNH = British Natural History Museum; RMNH = Rijksmuseum van Natuurlijke Historie; USNM = National Museum of Natural History.

from 2/3 of the costa, reaching 2/3 on the inner margin. The hindwing is orange-white, with a faint transverse line from the tornus. This species can also be differentiated from *C. chordotona* by the absence of the subbasal fascia on the forewing.

**Male genitalia.** The genitalia of the holotype has not been dissected and illustrated.

**Material examined.** 1♂, Cape York, N. Queensland, 2 vi (19)38??, (holotype), in the ANIC.

**Distribution.** Australia (N. Queensland).

**Remarks.** The species was described on the basis of a single male, not dissected. No further specimen has been known.

#### 17. *Crocantnes trizona* (Lower, 1916)

(Figures 44, 148)

*Crocantnes trizona* Lower, 1916: 543; Meyrick, 1925: 231; Common, 1996: 116.

*Crocantnes trizona* Turner, 1919: 152. [BMNH, ANIC].

**Diagnosis.** Male (Figure 44). Wingspan, 10 mm. This species is externally similar to *C. chordotona* Meyrick and *C. venustula* Turner, but can be distinguished from *C. chordotona* by the rounded apex of the forewing and the well-developed crescent streak beyond discal cell; and from *venustula* Turner by having a subbasal fascia. The head, labial palpus, and thorax are orange-white. The forewing is elongate, rather narrow; ground color is orange-white; costa nearly straight and gently arched beyond 3/4; three narrow, brownish vertical fascia well-developed; subbasal fascia from the basal 1/6 length of costa; antemedian fascia from 2/5, nearly straight; and postmedian fascia from 3/4 of costa, slightly curved inwards; a crescent streak well-developed beyond the discal cell; apex rounded; termen more or less round; fringe brownish. The hindwing is whitish, with a faint transverse fuscous line beyond 2/3 length.

**Female genitalia** (Figure 148). Papilla anales small. Abdominal sternite VIII broadly concave on caudal margin medially. Ostium developed in funnel-shaped. Antrum short. Ductus bursae very broad, covering with weakly sclerotized plate, margined with few denticles; several longitudinal creases developed distally. Corpus bursae large, ovate, with a half-ring before conjunction.

**Material examined.** A specimen (syntype, abdomen missing), Kuranda, near Cairns, N. Queensland, in the BMNH; 1♀, Kuranda, 1900 xi, syntype, gen. slide no. KTP-1/Park in the ANIC; other four syntypes are also in the ANIC: 1♂, Kuranda, xii (19)04, F.P. Dodd; 1♂, Kuranda, xii (19)05, F.P. Dodd; 1♀, Kuranda, xii (19)05, F.P. Dodd; 1♀, Kuranda, xii (19)06, F.P. Dodd; 1♂, Kuranda, x 1900, *Crocantnes trizona* Turner, 1919).

**Distribution.** Australia (Queensland).

**Remarks.** This species was redescribed by Turner (1919), probably based on the same specimens. According to the original descriptions, Lower (1916) described this species based on four specimens, and then later Turner (1919) described it based on seven specimens. Five syntypes by Turner (1919) are deposited in ANIC.

#### The *anacostola* species-group

The *anacostola* species-group of the genus *Crocantnes* is distinguished from the *prasinopsis* species-group by the forewing ground color which is pale yellow to orange with more complicated, irregular crimson markings.

#### 18. *Crocantnes anacostola* Diakonoff, 1954

(Figures 45, 131, 131A)

*Crocantnes anacostola* Diakonoff, 1954: 37. TL: Mist Camp, Papua [RMNH].

**Diagnosis.** Male (Figure 45). Wingspan, 20 mm. The species is externally close to the following species, *temeraria* Meyrick, but can be distinguished by the markings of the forewing: several irregular

yellowish white markings ill-defined, discal spot blackish, distinct, a yellowish brown oblique, nearly straight fascia well-developed from 1/3 of costa to beyond middle of inner margin, and a subterminal fascia well presented, strongly convex outwardly.

**Male genitalia** (Figures 131, 131A). See also Diakonoff (1954; Figures 570 and 571), gen slide no. 955D.

**Material examined.** 1♂, Mist Camp, 1800 m, Jan. 8, 1939 (holotype), in the RMNH.

**Distribution.** Indonesia (Papua).

#### 19. *Crocantnes temeraria* Meyrick, 1910

(Figure 46)

*Crocantnes temeraria* Meyrick, 1910: 443; Meyrick, 1925: 231. TL: Aroa R., near Port Moresby, Papua New Guinea. [Type unknown].

**Diagnosis.** Male (Figure 46). Wingspan, 18 mm. This species is characterized by the crimson markings on the forewing.

**Material examined.** The holotype (female) has not been found. An additional male specimen (Mt. Goliath, Ca. S. Meek) is in the BMNH.

**Distribution.** Papua New Guinea (Port Moresby).

#### 20. *Crocantnes sidonia* Meyrick, 1910

(Figures 47, 56, 56A, 132, 132A)

*Crocantnes sidonia* Meyrick, 1910: 442; Meyrick, 1925: 231. TL:

Staignan Island, Sudest Island, Sariba Island (Meek), Papua New Guinea; Cairns (Dodd), Queensland [BMNH].

**Diagnosis.** Male (Figure 47). Wingspan, 13–14 mm. The species is characterized by the forewing color pattern with four irregular reddish transverse fascia, and uniquely characterized labial palpus: second segment thick, flattened laterally, long; third segment atrophied (Figures 56, 56A).

**Male genitalia** (Figures 132, 132A). Uncus small, slender, nearly straight, with round apex. Valva broad basally, with strong spine on dorsal margin preapically; dorsal margin deeply concave beyond middle; ventral margin slightly emarginated before middle, densely setose along margin beyond. Aedeagus stout, about 2/3 length of valva, with three heavily sclerotized short plates apically.

**Female genitalia.** The genitalia of the type have not been dissected.

**Material examined.** 1♀, Cairns, Queensland; *Crocantnes sidonia* Meyr.; E. Meyrick det.; Meyrick Coll.; Meyrick Co., BM-1938-290 (syntype), in the BMNH; 1♂, Papua N. Guinea- Morobe Prov., Wau, Wau Ecol. Inst., 10 VIII 1983, S. E. Sp. M. Miller, 1200m, UV light, Mountane For., gen. slide no. CIS-5621/Park; 1♂, same locality, 25–31 VII 1983, S. E. Sp. M. Miller, 1200m; 2♂, Col. Becker PNG 866, Morobe District, Wau 1200 m, 8–14 XII 1976, Mercury vapor light, C. F. Hevel & Re. E. Dietz IV. Ypes, in the USNM.

**Distribution.** Papua New Guinea (Staignan Island, Sudest Island, Sariba Island, Misima Island, Morobe), Australia.

**Remarks.** The species was described based on seven specimens collected from Papua New Guinea and Queensland, Australia. Two syntypes in the BMNH with labeled “*C. sidonia* Meyrick” look superficially different. A molecular study is needed in the future.

#### The *leucodonta* species-group

The *leucodonta* species-group of the genus *Crocantnes* is well defined by a combination of the following morphological characters: (1) forewing ground color uniform purplish or mustard brown, often with a narrow orange-white median fascia or triangular orange-white costal patch; venation with R<sub>2</sub> stalked with R<sub>3+4</sub>; (2) labial palpus with a sexual dimorphism, uniquely modified: male with second segment normally thickened or more or less slender; third segment in the male highly modified,

but normally slender in the female. The hindwing is unicolorous.

#### Key to the species of the *leucodonta* species-group

1. Forewing uniform purplish or mustard brown, with triangular or short, narrow orange-white costal patch medially or with narrow, orange-white median band ————*P. leucodonta* (Diakonoff)  
Forewing without costal patch or median band, and with transverse streaks along veins —————*C. hagenensis* sp. nov.
2. Forewing with triangular orange-white costal patch or short, narrow streak medially on costa ————— 3  
Forewing with narrow, orange-white median band ————— 4
3. Forewing with triangular orange-white costal patch —————*C. leucodonta* Diakonoff (close to *C. aulodocha* Meyrick)  
Forewing with short, narrow streak medially on costa —————*C. susuensis* sp. nov.
4. Forewing with broader yellowish white band; fringe yellowish; hindwing with uniform purplish brown ground color —————*C. fallax* Durrant  
Forewing with narrow yellowish white median band; fringe concolorous; hindwing grayish —————*C. crypsicola* Durrant

#### 21. *Crocantbes leucodonta* Diakonoff, 1954

(Figures 48, 149, 149A)

*Crocantbes leucodonta* Diakonoff, 1954: 35. TL: Araucaria Rattan Camp, New Guinea [RMNH].

**Diagnosis.** Male (Figure 48). Wingspan, 20–24 mm. This species is easily distinguished from its relatives by the uniform purplish brown ground color of the forewing with the orange-white triangular costal patch, which is very similar to that of *Thubana* species. The third segment of the labial palpus is modified, dividing into two parts with a thicker basal third and a slender apical two-thirds. According to Meyrick (1918), it is superficially similar to *C. aulodocha* Meyrick which was described from Snow Mountains, Papua.

**Male genitalia.** See Diakonoff (1954; Figure 583, gen slide no. 955D). The genital slide mounted by Diakonoff is in very poor condition, and a photograph cannot be taken properly. The male genitalia are similar to those of the following new species, *C. susuensis* sp. nov., but can be distinguished by the slender uncus.

**Female genitalia** (Figures 149, 149A): See also Diakonoff (1954; Figure 569, gen slide no. 955D).

**Material examined.** 1♂, Araucaria Camp, 800 m, March 29, 1929 (holotype); 1♀, March 7, 1939, in the RMNH.

**Distribution.** Indonesia (Papua).

**Remarks.** The species was described based on a male and a female. Both of them are in the RMNH. There is a possibility that this species could be conspecific to *aulodocha* Meyrick.

#### 22. *Crocantbes aulodocha* Meyrick, 1918

*Crocantbes aulodocha* Meyrick, 1918: 98. TL: Upper Setekwa R., Snow Mountains, Papua. [Type unknown].

**Diagnosis.** Female. Wingspan, 21 mm. This species is very similar to *C. leucodonta* Diakonoff, with a triangular whitish costal patch, according to the original description of the species. Meyrick (1918) described for the forewing character as “the forewing purplish fuscous, with a triangular whitish spot on middle of costa, whence a whitish line interrupted in middle runs to near dorsum beyond middle”. The type specimen has not been found.

**Material examined.** No specimen available.

**Distribution.** Indonesia (Papua).

**Remarks.** The species was described from Snow Mountains, 2–3,000 ft, Papua, based on a female. The type of this species is not

known, probably lost (Clarke 1965: 60), and no opportunity is available for comparison with *C. leucodonta*.

#### 23. *Crocantbes susuensis* Park, sp. nov.

(Figures 49, 57, 133, 133A, 133B)

**Type.** Holotype: ♂, Papua New Guinea; Col Becker PNG 3214, Madang, 150 m, 15 x 1992, V. O. Becker Col., gen. slide no. CIS-5778/Park. Paratypes: 1♂, Morobe, nr Buolo, Mt. Susu Nat. Res. 975 m, 27–28 Aug. 1983, S. Miller, UV light, Araucaria For., gen. slide no. CIS-5769/Park; 1♂, Indonesia, Papua, Jayapura, Besum (nr Genyem), 2° 46' S, 140° 12' E, Second lowland forest, abandoned cocoa plantation, 5–7 ii 2009, A. J. de Boer, M. Schouten & R. Mambrasar, gen. slide no. CIS-5966/Park [USNM].

**Diagnosis.** This new species is distinguished from *C. leucodonta* by the absence of the yellowish white costal patch, third segment of the labial palpus slightly shorter than the second segment, without a longitudinal furrow along its inner side (Figure 57), and by the absence of the whitish median transverse band extended to the inner margin in *C. fallax* and *C. crypsicola*.

**Description.** Male (Figure 49). Wingspan, 17–19 mm. Head yellowish brown dorsally, with whitish erect scales laterally. Basal segment of antenna brownish dorsally, with orange-white apex, orange-white ventrally; first segment of flagellum brownish, orange-white to pale orange beyond all around. Second segment of labial palpus remarkably thickened with rough scales ventrally, gently recurved, orange-white ventrally, clothed with brownish scales dorsally; third segment more or less stout, modified, cylindrical, as long as third segment, representing two parts: basal 2/5 length thick, with more roughish scales, brownish with orange-white scales dorsally; and distal 3/5 more or less slender, brownish all around; apex less acute (Figure 57). Tegula and thorax yellowish orange dorsally. Forewing elongate, broader distally narrowed, densely clothed with yellowish brown scales throughout, with a small, triangular orange-white costal patch at the middle which connected to an oblique white line almost reaching the middle of the discal cell; the other small yellowish costal patch just before the apex; apex obtuse; termen strongly sinuate; fringe with whitish narrow basal line followed by a yellowish brown band, then a narrow paler line medially; venation with  $R_1$  arising beyond the middle;  $R_2$  stalked with  $R_{3+4}$  at basal 1/3 length;  $R_3$  and  $R_4$  stalked at 2/3;  $R_4$  reaching prior to apex;  $R_5$  absent;  $M_1$  remote to  $R_{2+3}$ ;  $M_2$  absent;  $M_3$  approximate to  $Cu_{1+2}$  at base;  $Cu_{A1}$  and  $Cu_{A2}$  stalked at basal 1/3. Hindwing gray; apex more or less acute; termen oblique; fringe with similar color pattern with that of forewing; venation with  $R_s$  and  $M_1$  stalked at basal 1/4 length from upper angle of cell;  $M_3$  and  $Cu_{A1}$  connate. Hind tibia dark fuscous rough scales dorsally, apical 1/4 white.

**Male genitalia** (Figures 133, 133A, 133B): Uncus long, as long as tegumen, bifurcated apically. Valva elongate, densely setose along ventral margin and in apical area; dorsal margin expanded in basal 2/5, then slightly concave; ventral margin slightly convex beyond middle; apex more or less acute. Juxta (Figure 135B) with slender, laterocaudal asymmetrical processes; left one long, about twice that of the right one; anterior margin produced apically. Aedeagus (Figure 135A) shorter than the valva, with an acute apex; cornuti consisting of two to three series of spicules.

**Distribution.** Papua New Guinea (Madang).

**Etymology.** The species name is derived from the locality name of a paratype.

#### 24. *Crocantbes fallax* (Durrant, 1915)

(Figures 50, 50A)

*Crocantbes fallax* Durrant, 1915: 164; Meyrick, 1925: 231.TL: Papua [BMNH].

*Crocantnes monodesma* Meyrick, 1931: 73. TL: Upper Setekwa R., Snow Mountains, Papua., syn. nov. [BMNH].

**Diagnosis.** Male (Figures 50, 50A). Wingspan, 19 mm. This species is superficially similar to the following species, *C. crypsicola* Durrant, but can be distinguished by the forewing with a broader whitish median fascia and yellowish fringe, and the darker hindwing. The head is orange-white and the thorax is dark purplish brown. The forewing ground color is dark purplish brown, with a straight narrow yellowish white fascia medially; the fringe is dark purplish brown in the basal 1/3 and pale-yellowish orange outwardly. The hindwing is dark purplish brown. The hind tibia is dark purplish brown, with yellowish scales at apex. The female is unknown.

**Male genitalia.** See Clarke (1965, Pl. 10, Figures 2–2b), based on *monodesma* Meyrick).

**Material examined.** 1♂ (holotype of *monodesma* Meyrick), Upper Setekwa R., Snow Mountains, 2500 ft, Dutch New Guinea, July, 1910 (A.S. Meek). A female syntype of *fallax* Durrant is also in the BMNH.

**Distribution.** Indonesia (Papua).

**Remarks.** The genitalia of the syntype of *C. fallax* has not been examined, but it is considered that *C. monodesma* Meyrick (Figure 50) is conspecific with *fallax* Durrant (Figure 51) due to shared morphological characters. The wing pattern and markings are the same and the TL for both species is the same, which is the Snow Mountains, 2500 ft in the central part of New Guinea, Papua, Indonesia.

#### 25. *Crocantnes crypsicola* (Durrant, 1915) (Figure 51)

*Crocantnes crypsicola* Durrant, 1915. Microl. Coll. Brit. Orn. Union & Woll. Exp. Snow Mountains Vol. 2: 165; Meyrick, 1925: 231. TL: Papua [BMNH].

**Diagnosis.** Female (Figure 51). Wingspan, 20 mm. The species is superficially similar to *C. fallax* Durrant, but can be distinguished by the narrower, zigzagged, whitish median transverse fascia on the forewing; fringes not pale yellow; and the hindwing paler with less produced apex.

**Material examined.** 1♀, Wataikwa River, Aug. 1910 (type), in the BMNH. The genitalia of the holotype has not been dissected.

**Distribution.** Indonesia (Papua).

**Remarks.** In the original description, the type was erroneously designated as a male, but it is female.

#### 26. *Crocantnes hagenensis* Park, sp. nov. (Figures 52, 58, 134, 134A)

**Type.** Holotype: ♂, PNG, Madang, Brahman Mission 200 m, 11-15 x 1992, V. O. Becker col., Col. Becker, PNG 2996, gen. slide no. CIS-5794/Park. Paratype: 1♂, Mt. Hagen. Kuk Agr. Res. Stn., 1,600 m, UV light, 19-20 viii 1600 m, UV light 19-20 viii, 1983, Scott E and Pamela Miller.

**Diagnosis.** The new species is distinguished from the all of the above species based on the forewing with white transverse bands between the veins from base to termen, and the third segment of the labial palpus which is shorter than the second segment.

**Description.** Male (Figure 52). Wingspan, 12 mm. Head silvery white dorsally, with a longitudinal brownish line centrally extended from the posterior part of the dorsum to the middle of the thorax. Basal segment of antenna is silvery white all round; flagellum is pale grayish orange throughout. Second segment of the labial palpus is thickened, strongly arched, brownish in basal 2/3, silvery white in apical 1/3 on the outer surface, silvery white on the inner surface; third segment is about 1/3 length of second, somewhat thickened with rough scales in the basal 1/2, then slender (Figure 58). Forewing is elongate; ground color brownish orange; two whitish bands arising from base, running to the termen between veins, dividing into five branches beyond cell; costa and

ventral margin; a pair of elongate stigmata at the middle and end of cell; costa with narrow whitish lines along margin and with short blackish streaks beyond 3/5 length; ventral margin also with narrow whitish lines; apex obtuse; termen concave medially, with blackish line along margin; fringe orange-white in basal 1/3, then brownish beyond; venation with  $R_1$  arising beyond middle;  $R_2$  stalked with  $R_{3+4}$  before basal 1/4 length;  $R_3$  and  $R_4$  stalked near 2/3;  $R_4$  reaching prior to apex;  $R_5$  absent;  $M_1$  remote to  $R_{2+3}$ ;  $M_2$  absent;  $M_3$  run straight from lower margin of cell;  $CuA_1$  and  $CuA_2$  stalked near 1/3 length. Hindwing silvery white; apex obtuse; termen oblique; fine grayish scales scattered; fringe silvery white; venation similar to that of the TS.

**Male genitalia** (Figure 134, 134A). Uncus slender, sclerotized, with acute apex. Tegumen short. Valva elongate, with long cucullus; costa angled near base, nearly parallel to ventral margin; ventral margin emarginated at basal 1/4. Juxta long, quadrate, as long as tegumen, slightly concave medially. Vinculum narrow, band-like. Aedeagus (Figure 136A) stout, shorter than valva; cornuti consisting of two series of brush-like scales.

**Distribution.** Papua New Guinea (Madang).

**Etymology.** The species name is derived from the TL.

#### Group not assigned

Some uncertainties exist regarding placement of the following 11 species in a certain species-group due to lack of morphological information available, including the male genitalia. These uncertainties will possibly be resolved with the help of molecular studies when additional specimens become available to examine.

#### 27. *Crocantnes celema* Durrant, 1915 (Figure 59)

*Crocantnes celema* Durrant, 1915: 152; Meyrick, 1925: 231. TL: Utakwa River, Papua [BMNH].

**Diagnosis.** Female (Figure 59). Wingspan, 14 mm. The forewing ground color is deep reddish brown, with a triangular, large, pale reddish orange costal patch medially, similar to the colored patch before the apex. The shape of the fascia on the forewing is similar to those of *C. xanthistia* Meyrick, but more reddish, and the hindwing is shining orange-white, while dark grayish in *C. xanthistia*.

**Material examined.** 1♀, Utakwa River, 3000 ft, Jan. 1913 (holotype), in the BMNH (the genitalia have not been examined).

**Distribution.** Indonesia (Papua).

#### 28. *Crocantnes xanthistia* Meyrick, 1931 (Figure 60)

*Crocantnes xanthistia* Meyrick, 1931: 73; Clarke, 1965: 24. TL: Upper Setekwa, Dutch New Guinea [BMNH].

**Diagnosis.** Female (Figure 60). Wingspan, 16 mm. The forewing pattern is similar to *C. celema* Meyrick, but the costal patches in the middle and posterior parts are deep yellowish; the posterior one is broadly occupied, expanding to the tornus, and the hindwing is dark fuscous. This species is hardly distinguishable from the following new species based on the external characteristics, but can be differentiated by the female genitalia.

**Female genitalia.** See Clarke (1965, Pl. 12, Figures 2–2c).

**Material examined.** 1♀, Upper Setekwa R., Snow Mountains, 2–3000 ft, Dutch New Guinea (Coll. Paravicini) (holotype), in the BMNH.

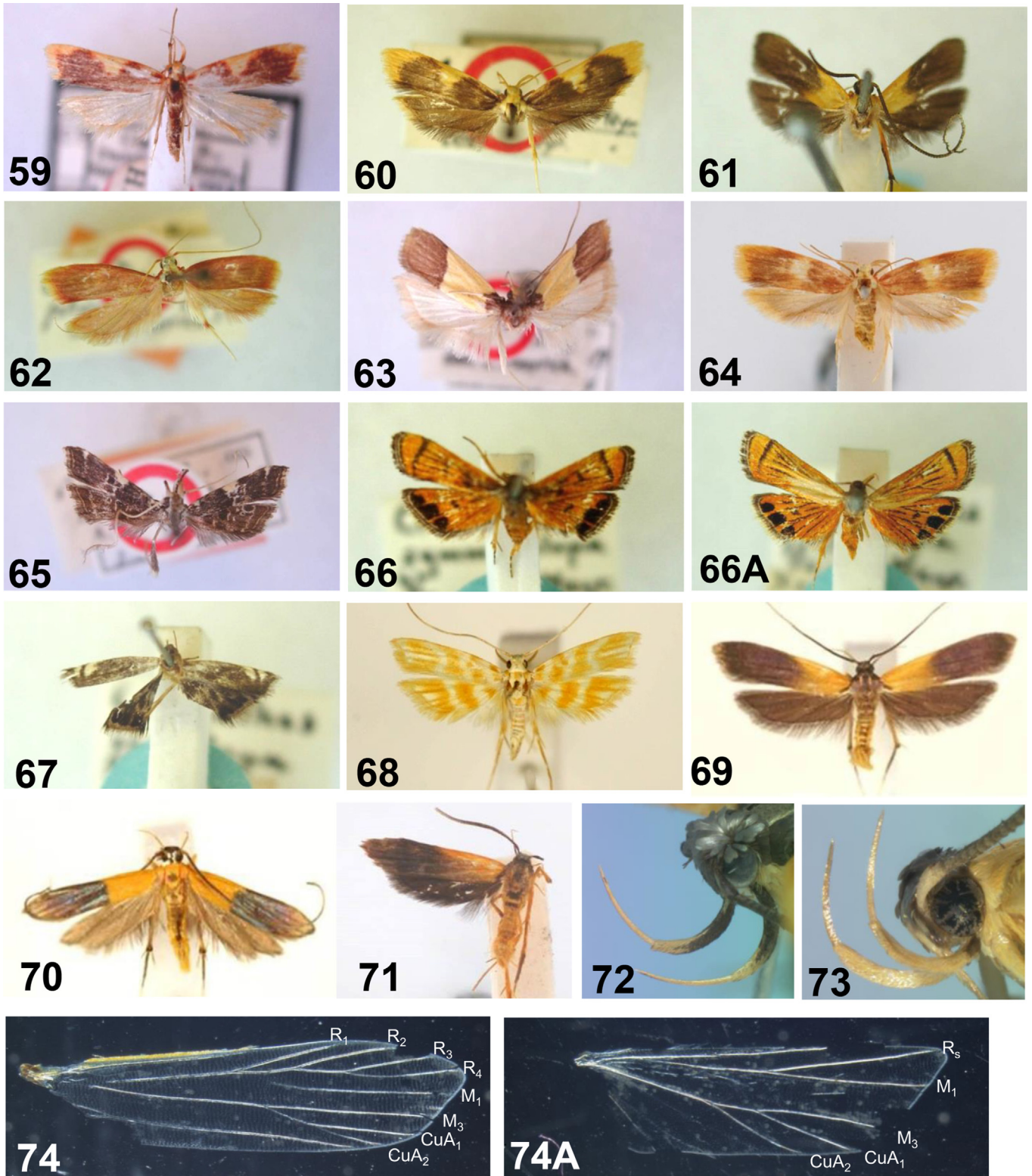
**Distribution.** Indonesia (Papua).

**Remarks.** The species was described on the basis of a single female.

#### 29. *Crocantnes hecuba* Meyrick, 1931 (Figure 61)

*Crocantnes hecuba* Meyrick, 1931: 74. TL: Hydrographer Mountains, Papua New Guinea [BMNH].





**Figures 59–74.** Adult and labial palpus of *Crocanthes* species and *Lamprista*: 59, *Crocanthes celema* Meyrick, BMNH; 60, *C. xanthistia* Meyrick, BMNH; 61, *C. hecuba* Meyrick, BMNH; 62, *C. phoenoteles* Meyrick, BMNH; 63, *C. platycitra* Meyrick, BMNH; 64, *C. rhodantha* Meyrick, BMNH; 65, *C. thalmamectis* Meyrick, holotype, BMNH; 66, *C. symmochlora* Meyrick; 66A, *C. triglenopa* Meyrick, paratype, BMNH; 67, *C. sceletopa* Meyrick, paratype, BMNH; 68, *C. scioxantha* Meyrick; 69, *Lamprista. emmeli* Park, USNM; 70, *L. ortholepida* Park, USNM; 71, *L. hemipyra* (Meyrick), BMNH; 72, labial palpus of *L. emmeli* Park; 73, ditto, *L. ortholepida* Park; 74, forewing venation of *L. emmeli* Park; 74A, ditto, hindwing. BMNH = British Natural History Museum; USNM = National Museum of Natural History.

**Diagnosis.** Male (Figure 61). Wingspan, 15 mm. The species is distinguished from its allies by the very thick, dark brown antennae throughout. The head is shiny dark brown, with an orange-white face. The forewing is elongated, slightly dilated distally, with an orange basal part before 1/2 length, then dark brown in the distal part. The hindwing ground color is grayish brown.

**Material examined.** A type specimen, British New Guinea, Hydrographer Mountains, 2500 ft (Coll. Paravicini), in the BMNH (abdomen of the type is missing).

**Distribution.** Papua New Guinea.

**Remarks.** This species was described based on two males. No additional specimen has been found since it was described.

**30. *Crocantbes phoenoteles* Meyrick, 1929**  
(Figure 62)

*Crocantbes phoenoteles* Meyrick, 1929: 519; Clarke, 1965: 23. TL: Kunmisi R., New Guinea [BMNH].

**Diagnosis.** Female (Figure 62). Wingspan, 16 mm. This species is characterized by the forewing which is reddish orange throughout, with a pale yellow fringe. The head and thorax are silvery white. The hindwing ground color is light orange. It is superficially very close to *C. rhodantha* Meyrick, but it has a large, median yellowish white spot on the forewing and a crimson apex of the hindtibia, while in the latter, the hindtibia is yellowish white throughout.

**Female genitalia** (Figure 40): See Clarke (1965, Pl. 11, Figures 2–2c).

**Material examined.** 1♀, Kumusi River, Coll. Paravicini (holotype), in the BMNH.

**Distribution.** Papua New Guinea.

**Remarks.** The species was described on the basis of a single female and no additional specimen has been found.

**31. *Crocantbes rhodantha* Meyrick, 1918**  
(Figure 63)

*Crocantbes rhodantha* Meyrick, 1918: 97; Meyrick, 1925: 231. TL: Upper Setekwa R., Snow Mountains, Papua [BMNH].

**Diagnosis.** Male (Figure 64). Wingspan, 17 mm. This species is superficially similar to *C. phoenoteles* Meyrick, as noted in the preceding species. The forewing ground color is deep orange, with a large, ovate pale orange patch medially, and a series of indistinct yellow markings along the apical part of the costa and termen.

**Material examined.** 1♀, Upper Setekwa R., Snow Mountains, 2–3000 ft, Dutch New Guinea (holotype), in the BMNH (the genitalia of the type have not been examined), photographed by K. Tuck.

**Distribution.** Indonesia (Papua).

**Remarks.** The species was described on the basis of a female. No additional specimen has been found.

**32. *Crocantbes platycitra* Meyrick, 1931**  
(Figure 64)

*Crocantbes platycitra* Meyrick, 1931: 73; Clarke, 1964: 23. TL: Biagi, Mambra R., New Guinea [BMNH].

**Diagnosis.** Female (Figure 63). Wingspan, 209 mm. This species is superficially similar to *C. doliopa* Meyrick, which was described from Queensland, but it is distinguished by the less elongate forewing and the whitish hindwing ground color.

**Female genitalia.** See Clarke (1964, Pl. 11, Figures 4–4c).

**Material examined.** 1♀, Biagi, Mambra R., 5000 ft, Papua New Guinea (Coll. Paravicini) (holotype), in the BMNH.

**Distribution.** Papua New Guinea.

**Remarks.** The species was described on the basis of a female, and no additional specimen has been reported.

**33. *Crocantbes thalamectis* Meyrick, 1929**  
(Figure 65)

*Crocantbes thalamectis* Meyrick, 1929: 521; Clarke, 1964: 24. TL: Kumusi R., Bakunbari, N. coast, Papua New Guinea [BMNH].

**Diagnosis.** Male (Figure 65). Wingspan, 15–17 mm. The species is characterized by the forewing ground color which is dark fuscous with a semiovate orange-white spot on the costa medially and a smaller wedge-shaped spot preapically; the third segment of the labial palpus is thickened with long appressed hairs extending to the apex.

**Male genitalia.** See Clarke (1964, Pl. 12, Figures 1–1b).

**Material examined.** 1♂, Kumusi River, (A. S. Meek), gen. slide no. BMNH-9137 (holotype), in the BMNH.

**Distribution.** Papua New Guinea.

**Remarks.** The species was described on the basis of a single male, and Meyrick (1931) reported an additional male from the TL.

**34. *Crocantbes symmochlopa* Meyrick, 1929**  
(Figures 66, 66A)

*Crocantbes symmochlopa* Meyrick, 1929: 519. TL: New Ireland, Papua New Guinea.

*Crocantbes triglenopa* Meyrick, 1929: 520, syn. nov. TL: New Hanover.

**Diagnosis.** Female (Figure 66). Wingspan, 12–13 mm. The species is characterized by having three large black spots along the termen on the hindwing. Meyrick (1929) described *C. triglenopa* Meyrick, differentiating it from *C. symmochlopa* Meyrick by the forewing markings and the more oblique upper part of the termen of the hindwing. It is assumed that these differences are related to individual variation and therefore *triglenopa* Meyrick was synonymized with *symmochlopa* Meyrick.

**Material examined.** 1♀ (paratype of *symmochlopa* Meyrick), New Ireland, Dec.; 1♀ (paratype of *triglenopa* Meyrick), New Hanovers, March. Their genitalia have not been dissected.

**Distribution.** Papua New Guinea (New Hanover).

**35. *Crocantbes sceletopa* Meyrick, 1910**  
(Figure 67)

*Crocantbes sceletopa* Meyrick, 1910: 445. TL: Moluccas, Amboina [BMNH, paratype].

**Diagnosis.** Male (Figure 67). Wingspan, 9–10 mm. This species is characterized by having two wedge-shaped, orange-white spots on the costa preapically, reaching halfway across the wing, and the blackish fuscous hindwing. According to the description by Meyrick (1910), it is characterized by: the orange-white head; the orange-white antenna, twice as long as the forewing; the orange-white labial palpus, laterally compressed, the third segment thickened with slightly rough scales anteriorly, pointed; the dark fuscous thorax and abdomen; the elongate forewing, dark fuscous, with two oblique, wedge-shaped orange-white spots from the costa posteriorly, reaching halfway across the wing; the hindwing blackish, with cloudy light fuscous suffused transverse streaks before and beyond the middle; a sharply defined submetallic fuscous streak from 4/5 of the costa to below the apex and continued along the termen to the middle.

**Material examined.** One specimen (syntype, abdomen missing), Moluccas, Amboina, Feb., in the BMNH.

**Distribution.** Indonesia (Moluccas).

**Remarks.** The species was described based on three male specimens, but no information is available for the types. A syntype is in the BMNH.

**36. *Crocantbes scioxantha* Meyrick, 1910, comb. nov.**  
(Figures 68, 135, 135a, 135b)

*Crocantbes scioxantha* Meyrick, 1910: 443; Meyrick, 1925: 231. TL: Fat Fak, Papua. [BMNH, abdomen missing].

**Diagnosis.** Male (Figure 68). Wingspan, 17 mm. The forewing ground color is yellowish white, with irregular light yellow fascia. The hindwing has similar markings as those of the forewing.

**Male genitalia** (Figures 135, 135A, 135B). Uncus narrow, slender. Valva with a strong spine on the dorsal margin medially. Aedeagus rather small, shorter than 1/2 of the valva, with a short, bar-shaped cornutus.

**Material examined.** 1♂, Papua N. Guinea, Madang, Brahman Mission- 200m, 11-15 X 1992, V. O Becker Col; Col. Becker PNG 2971, gen. slide no. CIS-5630/Park.

**Distribution.** Indonesia (Papua), Papua New Guinea.

### 37. *Crocantbes sphecotypa* Meyrick, 1933

*Crocantbes sphecotypa* Meyrick, 1933: 1. TL: Celebes, Indonesia.

**Diagnosis.** Wingspan, 15 mm. The species was described, based on a single female specimen.

**Material examined.** No specimen is available.

**Distribution.** Indonesia, Celebes

### *Lamprista* Park, 2013

TS: *Lamprista emmeli* Park, 2013.

*Lamprista* Park is similar to *Crocantbes* Meyrick, but it differs from the latter by having the following characters: (1) forewing narrowly elongate, with ground color differing between the anterior part and the posterior part, and with R2 stalked; (2) hindwing usually dark in color, with yellowish brown; (3) labial palpus with no sexual dimorphism; second segment long, strongly recurved, and third segment normally slender, nearly as long as the second; (4) the male genitalia with the uncus bifurcated apically and cucullus asymmetrical. It is also differentiated from *Pacificulla* Park which has similar maculations on both wings, the sexually dimorphic labial palpus, and the male genitalia with elongate, nearly parallel-sided valva. Three species have been known in Papua New Guinea.

#### 1. *Lamprista emmeli* Park, 2013

(Figures 69, 72, 74, 74A)

*Lamprista emmeli* Park and Lee, 2013: 595. TL: Madang, Papua New Guinea [USNM].

**Diagnosis.** Male (Figure 69). Wingspan, 16–17 mm. The species is similar to *L. hemipyra* (Meyrick) in the wing shape and pattern, but differs by having the cucullus of valva elongate with rounded apex, and the costa of the valva with a long, strong spine medially. The venations of both wings are illustrated in Figure 74 (forewing) and Figure 74A (hindwing).

**Male genitalia.** See Park and Lee (2013, Figures 6 and 6a).

**Female genitalia.** See Park and Lee (2013, Figures 8 and 8a).

**Material examined.** 4♂, 1♀, Papua N. Guinea, Madang, Brahman Mission-200 m, Col. Becker PNG 2969, 11-15 X 1992, V. O Becker Col., gen. slide no. 5614/Park (♂), 5633/Park (♀).

**Distribution.** Papua New Guinea (Madang).

#### 2. *Lamprista ortholepida* Park, 2013

(Figures 70, 73)

*Lamprista ortholepida* Park and Lee, 2013: 5975. TL: Madang, Papua New Guinea [USNM].

**Diagnosis.** Male (Figure 70). Wingspan, 15–17 mm. This new species shares a similar wing pattern with *L. hemipyra* and *L. emmeli*, but it differs from them by having the shiny metallic dark blue area beyond 1/2-length of the forewing. The labial palpus is illustrated in Figure 73.

**Male genitalia.** See Park and Lee (2013, Figures 7 and 7a).

**Female genitalia.** See Park and Lee (2013, Figures 9 and 9a).

**Material examined.** 5♂, 1♀, Col. Becker PNG 2971, Papua N. Guinea, Madang, Brahman Mission 200m, 11-15 X 1992, V. O Becker Col., gen. slide no. CIS-5615/Park (holotype).

**Distribution.** Papua New Guinea (Madang).

#### 3. *Lamprista hemipyra* (Meyrick, 1938)

(Figure 71)

*Crocantbes hemipyra* Meyrick, 1938: 513; Park and Lee, 2013: 598.

TL: Kokoda, Papua New Guinea [BMNH].

**Diagnosis.** Male (Figure 71). Wingspan, 17 mm. This species is superficially similar to *L. emmeli* and *L. ortholepida*, but it differs from them by having different characters of the male genitalia. It is characterized by the metallic brown head; the dark gray antenna becoming whitish towards the middle; the labial palpus slender, brownish, but dark fuscous in the basal part of second segment; thorax brownish. Forewing narrow, deep orange in the basal part, suffused yellowish brown to dark brown in the distal part; apex produced, more or less obtuse; termen oblique; venation with R<sub>2</sub> free, R<sub>3</sub> and R<sub>4</sub> stalked. Hindwing dark brown. Hind tibia orange, more or less suffused with dark gray. Abdomen orange with brownish scales dorsally. Female unknown.

**Male genitalia.** Male genitalia have not been dissected.

**Material examined.** 1♂, Papua New Guinea, Kokoda, 1200 ft, vi-vii 1933, L. E. Cheesman, BM slide no. 9141, in the BMNH, photographed by K. Tuck.

**Distribution.** Papua New Guinea (Kokoda).

**Remarks.** The species was described based on a single male collected in Kokoda. Additional specimens have been found.

### *Pacificulla* Park, 2013

TS: *Pacificulla flaviagera* Park, 2013.

*Pacificulla* Park is related to *Crocantbes* Meyrick, sharing the apomorphic characters of long antennae and the absence of the gnathos in the male genitalia. The genus is defined by a combination of the following morphological characters: (1) both wings with a similar pattern of color and markings, having a large orange or dark orange patch in the middle of the wings; venation with R<sub>2</sub> and R<sub>3+4</sub> stalked or sometimes approximated; R<sub>5</sub> and M<sub>2</sub> absent; (2) labial palpi sexually dimorphic: male usually with the second segment normally thickened, long, with acute apex, and the third segment absent or reduced; third segment unmodified in the female; and (3) male genitalia with elongate valva bearing a dense patch of strong bristles on the cucullus and the aedeagus with a row or sheaf of needle-like cornuti. Twenty-four species have been known in Papua New Guinea and Papua of Indonesia.

#### 1. *Pacificulla flaviagera* Park, 2013

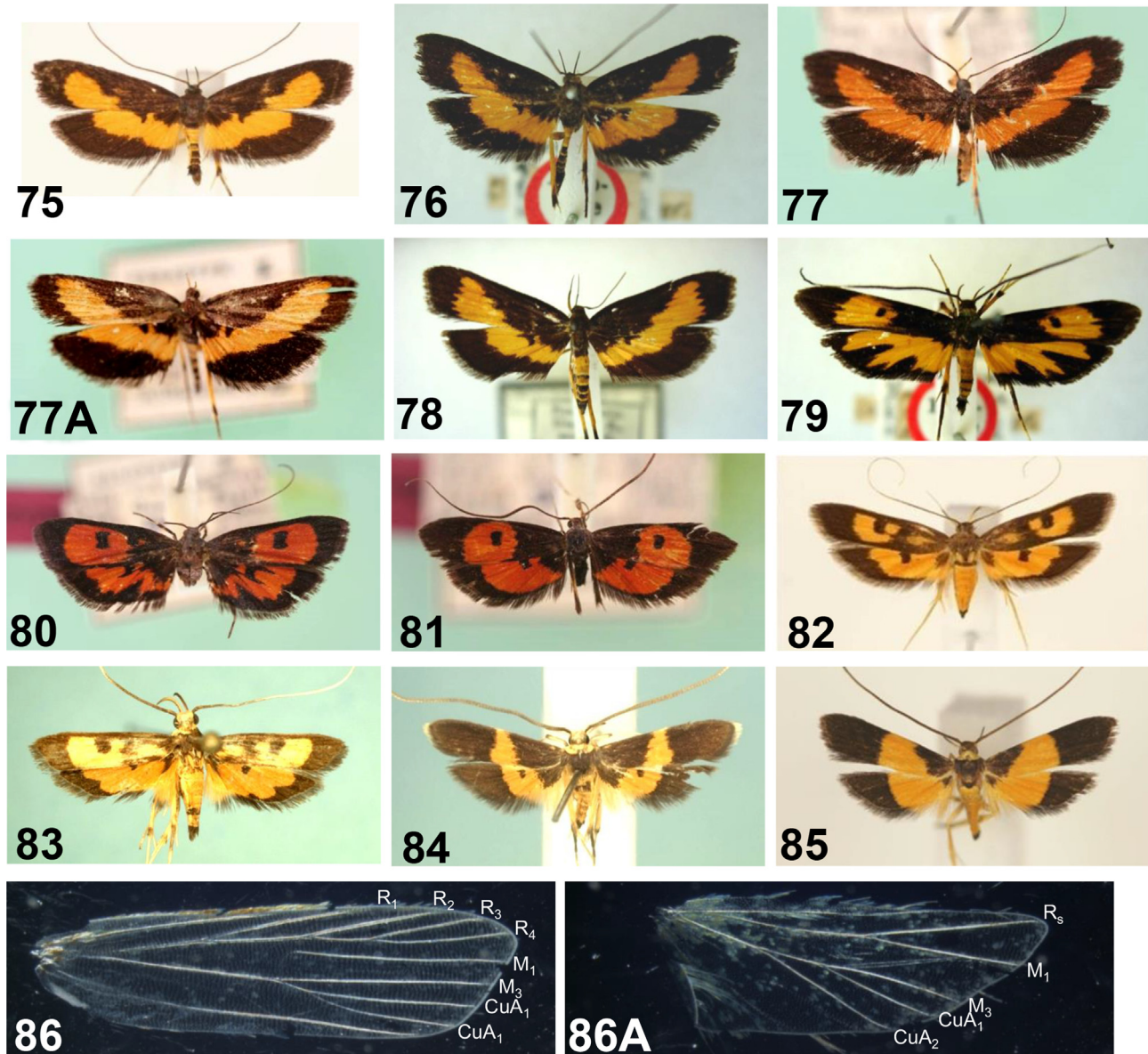
(Figure 75, 98, 99)

*Pacificulla flaviagera* Park and Lee, 2013: 68. TL: Madang, Papua New Guinea [USNM].

**Diagnosis.** Male (Figure 75). Wingspan, 22 mm. This species is superficially similar to *P. thrsyadora* (Meyrick) and *P. philotima* (Diakonoff), but can be distinguished from the latter by the median orange patch of the forewing, the inner margin distinctly angulate at the middle, the outer margin rounded, convex, and the hindwing bearing a median orange patch, with the outer margin more sharply angled on vein M<sub>1</sub> and distinctly angulate on CuA<sub>2</sub>. Labial palpus and antenna are illustrated in Figures 98, 99.

**Male genitalia.** See Park and Lee (2013, Figures 31 and 31a–c).

**Material examined.** 1♂, Papua New Guinea, Madang, Brahman Mission-200 m, 11-15 X 1992, Col. Becker PNG 2995, V. O Becker Col., gen. slide no. CIS-5629/Park (holotype).



**Figures 75–86.** Adult and venation of *Pacificulla* species: 75, *Pacificulla flavigera* Park, USNM; 76, *P. thrasydora* Meyrick, holotype, BMNH; 77, *P. philotima* (Diakonoff), paratype, RMNH; 77A, *P. xanthorrhoeae* Diakonoff, paratype, RMNH (syn. of *philotima* Diak.); 78, *P. miltina* (Durrant), BMNH; 79, *P. carcharias* (Meyrick), holotype, BMNH; 80, *P. megalophthalma* (Diakonoff), holotype, RMNH; 81, *P. pyrostola* (Diakonoff), holotype, RMNH; 82, *P. esdiparki* Park, holotype, USNM; 83, *P. callisomata* Park, holotype, USNM; 84, *P. cervicalia* Park, holotype, USNM; 85, *P. geniola* (Meyrick); 86, forewing venation of *P. esdiparki* Park; 86A, ditto, hindwing. BMNH = British Natural History Museum; RMNH = Rijksmuseum van Natuurlijke Historie; USNM = National Museum of Natural History.

*Distribution.* Papua New Guinea (Madang).

**2. *Pacificulla thrasydora* (Meyrick, 1910), comb. nov.**  
(Figure 76)

*Crocantnes thrasydora* Meyrick, 1910: 444; Meyrick, 1925: 231;  
Park and Lee, 2013: 66. TL: Kapaur, Kat Fak, Papua [BMNH].

*Diagnosis.* Male (Figure 76). Wingspan, 23 mm. This species is externally similar to *P. flavigera*, but can be distinguished by the median orange patch with more rounded outer margin. It is also similar to *P. philotima* (Diakonoff), but can be differentiated by the yellowish patch on the hindwing with strongly angled on vein  $M_1$  and slightly concave medially on the outer margin. The antenna is ciliated with short hair-like cilia and the second segment of labial palpus is horn-shaped, thickened, evenly scaled with an acute apex, and the third segment is absent.

*Material examined.* 1♂, New Guinea, Kapaur, in January, in the BMNH (holotype, abdomen missing).

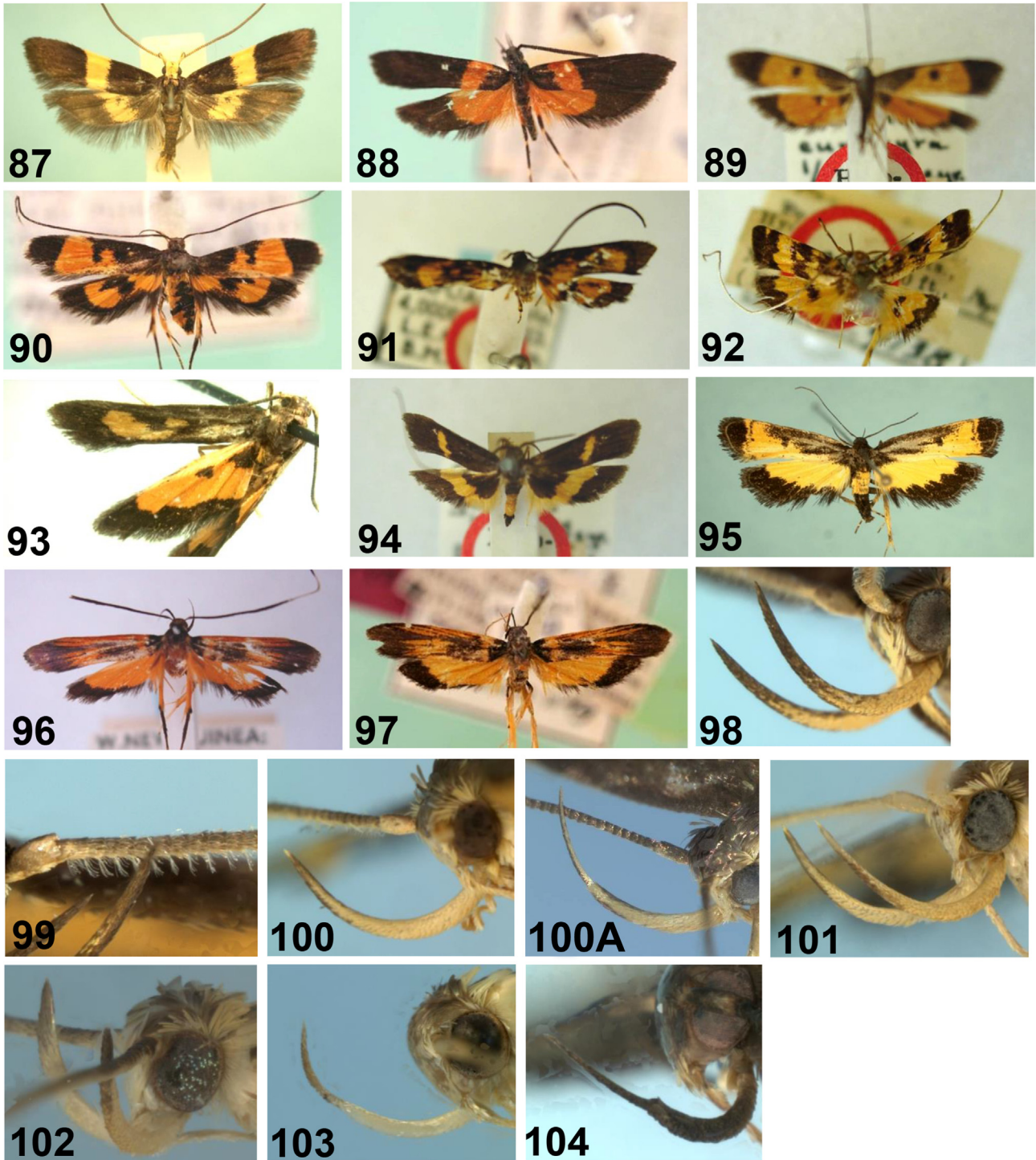
*Distribution.* Indonesia (Papua).

**3. *Pacificulla philotima* (Diakonoff, 1954)**  
(Figures 77, 77A, 150, 150A)

*Crocantnes philotima* Diakonoff, 1954: 33; Park and Lee, 2013: 66.  
TL: Hollandia, Bernhard Camp, Papua. [RMNH, gen slide no. 957D].

*Crocantnes xanthorrhoea* Diakonoff, 1954: 34. TL: Bernhard Camp, Papua. [RMNH, gen slide no. 958D].

*Diagnosis.* Female (Figure 77). Wingspan, 25–26 mm. This species is externally similar to *P. thrasydora* (Meyrick), but can be distinguished as noted in the preceding species. The head is metallic purplish black, the antenna is black, and the labial palpus is



**Figures 87–104.** Adult, labial palpus, and antenna of *Pacificulla* species: 87, *P. zonia* (Meyrick), holotype, BMNH; 88, *P. protoma* (Diakonoff), holotype, RMNH; 89, *P. eurypyra* Meyrick, holotype, BMNH; 90, *P. heliocharis* (Diakonoff), holotype, RMNH; 91, *P. ignigera* Meyrick, holotype, BMNH; 92, *P. cleomorpha* (Meyrick), holotype, BMNH; 93, *P. searsi* Park, holotype, USNM; 94, *P. gelastis* (Meyrick), holotype, BMNH; 95, *P. kekamatana* Park, holotype, USNM; 96, *P. ignea* (Meyrick), holotype, BMNH; 97, *P. sceptrophora* (Diakonoff), holotype, RMNH; 98, labial palpus of *P. flaviagera* Park; 99, antenna of *P. flaviagera* Park; 100, labial palpus of *P. esdiparki* Park (male); 100A, labial palpus of *P. esdiparki* Park (female); 101, ditto, *P. callisomata* Park (male); 102, ditto, *P. cervicalia* Park (male); 103, ditto, *P. geniola* (Meyrick) (male); 104, ditto, *P. kekamatana* Park (male). BMNH = British Natural History Museum; RMNH = Rijksmuseum van Natuurlijke Historie; USNM = National Museum of Natural History.

light orange. The wing maculation of both wings is similar to that of the preceding species.

**Female genitalia** (Figure 150, 150A). See also Diakonoff (1954; Figure 579). Ostium with its anterior edge truncate, with short lateral lobes. Ductus bursae narrow. Figure 150A is that of *C. xanthorrhoea* (holotype).

**Material examined.** 1♀ of *C. philotima*, Hollandia, sea-level, July, 1938, July 2–19<sup>th</sup>, 1938 (holotype); 1♀ of *C. xanthorrhoea*, Bernhard Camp, 50 m, April 13, 1930 (holotype).

**Distribution.** Indonesia (Papua).

**Remarks.** Diakonoff (1954) described the two species, *C. philotima* Diakonoff and *C. xanthorrhoea* Diakonoff, based on

females, in the same paper, differentiating them by the abdominal sternite VII as shown in Figures 150, 150A. However, these differences are not remarkable to separate them from each other, and *P. xanthorrhoea* was previously synonymized with *philotima* by Park (2013).

#### 4. *Pacificulla miltina* (Durrant, 1915)

(Figures 78, 136)

*Crocantbes miltina* Durrant, 1915: 151; Park and Lee, 2013: 66. TL: Papua [BMNH].

**Diagnosis.** Male (Figure 78). Wingspan, 24–26 mm. This species is a sibling species of *C. thrasydora* Meyrick, but can be distinguished by the strongly serrated outer margin of the light orange median patch on the forewing, and the patch on the hindwing is narrower than those of the preceding species, and narrower towards the hind margin.

**Male genitalia** (Figure 136). Uncus slender, with acute apex, as long as tegument. Valva slender, as long as total length of aedeagus; dorsal margin concave before middle, then convex beyond. Aedeagus stout, short.

**Material examined.** 1♂, Base Camp, Nov. 1912, 350366 (holotype).

**Distribution.** Indonesia (Papua).

**Remarks.** It might need to be reidentified as to whether this is conspecific with *C. thrasydora*. Additional specimens are needed to confirm it.

#### 5. *Pacificulla carcharias* (Meyrick, 1910), comb. nov.

(Figure 79)

*Crocantbes carcharias* Meyrick, 1910: 444; Meyrick, 1925: 231, pl. 4, Fig 99. TL: Fergusson Island, Papua [BMNH].

**Diagnosis.** Male (Figure 79). Wingspan, 25 mm. This is distinguished from all the preceding species of the genus by the narrower forewing, the large trapezoidal orange median patch with a large blackish spot at the middle of the cell, and the orange median patch of the hindwing with an irregularly zigzagged posterior margin. The head and thorax are blackish, and the antenna is moderately ciliated, purple-blackish with a broad white band beyond the middle. The labial palpus is yellowish; the third segment suffused with blackish scales, acute apically. The abdomen is orange dorsally, blackish along the lateral sides in the last four segments, with a blackish anal tuft.

**Material examined.** The holotype, New Guinea, Fergusson Island (Meek), in the BMNH (the genitalia of the holotype have not been dissected).

**Distribution.** Indonesia (Papua).

#### 6. *Pacificulla megalophthalma* (Diakonoff, 1954), comb. nov.

(Figures 80, 137, 151, 151A)

*Crocantbes megalophthalma* Diakonoff, 1954: 30. TL: Rattan Camp, Papua. [RMNH].

**Diagnosis.** Male and female (Figure 80). Wingspan, 22–25 mm. This species is externally similar to the following species, *C. pyrostola* Meyrick, but can be distinguished by the median reddish orange patch on the forewing more elongated, occupying more than the median third of the wing and reaching 1/3 to 4/5 of the hind margin; the hindwing with C-shaped, purplish black projection before the middle of the cell and strongly zigzagged outer margin with large, triangular projection on hind margin medially.

**Male genitalia** (Figure 139). See also the illustration by Diakonoff (1954; Figure 567), based on the gen slide no. 942 D. Similar to those of *P. esdiparki* Park, but can be distinguished by the straight uncus, with acute apex; less elongate valva; aedeagus stouter and shorter than that of *P. esdiparki*.

**Female genitalia** (Figures 151, 151A). See also Diakonoff (1954; Figure 580), based on the gen slide no. 943D (holotype).

**Material examined.** 1♂, Rattan Camp, 1200 m, 15 ii 1939 (holotype); 1♂, Araucaria Camp, 800 m, 9 iii 1935 (allotype).

**Distribution.** Indonesia (Papua).

#### 7. *Pacificulla pyrostola* (Diakonoff, 1954), comb. nov.

(Figures 81, 138)

*Crocantbes pyrostola* Diakonoff, 1954: 31. TL: Araucaria Camp, Papua [RMNH].

**Diagnosis.** Male (Figure 81). Wingspan, 19 mm. This species is externally similar to *C. megalophthalma* Diakonoff, but can be distinguished by the smaller size, the ovate median reddish orange patch in the forewing shorter, with nearly round anterior and posterior margins, and also the similar patch in the hindwing with gently rounded posterior and lower margins. The male genitalia are differentiated from those of the latter by the shorter uncus, the more elongate valva, with nearly parallel sided.

**Male genitalia** (Figure 138). See also the illustration by Diakonoff (1954; Figure 573, based on gen. slide no. 941 D) (holotype).

**Material examined.** 1♂, Araucaria Camp, 800 m, 25 iii 1939, gen slide no. 942 D (holotype).

**Distribution.** Indonesia (Papua).

#### 8. *Pacificulla esdiparki* Park, 2013

(Figures 82, 86, 86A, 100, 100A)

*Pacificulla esdiparki* Park and Lee, 2013. Zootaxa: 69. TL: Madang, Papua New Guinea.

**Diagnosis.** Male (Figure 82). Wingspan, 18–20 mm. The color and pattern of the wings are similar to those of *P. ignigera* (Meyrick) (Figure 91), which was described from Papua, Indonesia, but it can be distinguished by the following characters: the antenna dark brown in the basal 2/5, then shiny, orange-white, whereas blackish throughout in *P. ignigera*; the costal dark brown streak beyond median fascia narrower, nearly straight; the outer margin of the orange median zone on the forewing slightly angled at the middle, whereas strongly angled between M<sub>1</sub> and M<sub>2</sub> in *P. ignigera* Meyrick; the hindleg is almost entirely pale yellow, whereas that of *P. ignigera* has distinct black markings. The venations of both wings (Figures 86, 86A), and the labial palpus of the male (Figure 100) and female (100a) are illustrated.

**Male genitalia.** See Park (2013, Figures 32 and 32a–c).

**Female genitalia.** See Park (2013, Figures 32 and 32a–c).

**Material examined.** 10♂, 2♀, Papua New Guinea, Madang, Brahman Mission 200m, 16 X 1992, Col. Becker PNG 2968, V. O Becker Col., gen. prep. no. CIS-5637 (holotype).

**Distribution.** Papua New Guinea.

#### 9. *Pacificulla callisomata* Park, 2013

(Figures 83, 101)

*Pacificulla callisomata* Park and Lee, 2013: 69. TL: Depapre, Papua, Indonesia,

**Diagnosis.** Male (Figure 83). Wingspan, 18 mm. The species is superficially similar to *P. esdiparki* and *P. searsi*, but it can be distinguished by the shiny orange-white head and tegula, the forewing with the median patch more yellowish and rounded outer margin, and the hindwing with a more distinct, triangular projection medially in the outer margin of the orange median patch. The male labial palpus is shown in Figure 101. The male genitalia of *P. callisomata* can be distinguished from those of *P. esdiparki* and *P. searsi* by: the shorter uncus, truncated apically; the nearly parallel-sided cucullus; larger juxta, with small, ovate lobes at the latero-distal corners and similar ones at the latero-anterior corners; and the longer series of cornuti. Female unknown.

**Male genitalia.** See Park (2013, Figures 34 and 34a–c).

*Material examined.* 1♂, Papua, Indonesia- Depapre, Cyclops Mountains, 2°29'S, 140° 7'E, 21 i 1966, at light, Indonesia Papua ZMA-exp. 1966, gen. slide no. CIS-6040/Park (holotype).

*Distribution.* Indonesia (Papua).

#### 10. *Pacificulla cervicalis* Park, 2013

(Figures 84, 102)

*Pacificulla cervicalis* Park and Lee, 2013: 74. TL: Jembatan Dua, Papua, Indonesia.

*Diagnosis.* Male (Figure 84). Wingspan, 10–11 mm. This new species is superficially similar to *P. geniola* (Meyrick, 1931), in size and wing pattern, but it can be distinguished by the following: the forewing with more broadly occupied brownish basal fascia, the narrower median orange patch, the whitish fringe around the apex; the hindwing with the small distinct dark brown spot in median orange fascia. It is also superficially similar to *P. zonias* (Meyrick 1904), comb. nov., which has the median orange patch on the forewing nearly parallel sided. The male labial palpus is shown in Figure 102. The abdomen of *P. cervicalis* is differentiated from that of *P. zonias* by the reddish orange color dorsally, except the first and last segments, whereas it is dark fuscous throughout in the latter. The male genitalia of the new species are very similar to those of *P. geniola*, but can be distinguished by the more slender uncus and the more apically narrowed cucullus. Female unknown.

*Male genitalia.* See Park (2013, Figures 35 and 35a–c).

*Material examined.* 2♂, Indonesia, Papua- Jembatan Dua, Cyclops Mountains, nr Waena, 2° 35'S- 140° 36' E 23 I 1996, At light; Indonesia, Papua, ZMA-exp. 1996, gen. slide no. CIS-6043/Park (holotype).

*Distribution.* Indonesia (Papua).

#### 11. *Pacificulla geniola* (Meyrick, 1931)

(Figures 85, 103, 139, 152)

*Crocantbes geniola* Meyrick, 1931: 74; Park and Lee, 2013: 66. TL: Hydrographer Mountains, Papua [BMNH].

*Diagnosis.* Male and female (Figure 85). Wingspan, 10–11 mm. This species is externally similar to *C. protoma* Diakonoff, but can be readily distinguished by having a larger, trapezoidal, orange, median patch on the forewing, and blackish basal fascia in the hindwing. This species is characterized by the wing color pattern: the head and thorax are dark fuscous, and the face is pale yellow; the forewing has triangular subbasal fascia; orange median patch occupying with the upper margin on the costa about 1/2 length of that on the inner margin; the hindwing has blackish basal fascia and dark brown terminal fascia occupying about 1/3 length of the wing. On my request to the BNMH for a comparison with the type specimen, it appears that the edge of the basal fascia on the forewing is somewhat variable: that of the type is a little more irregularly shaped, but the other specimens have a slightly concave edge. These differences are not significant, with due consideration of the limitations in the quality of the image of the type, and it is considered that they do represent the same species. The genitalia of the types have not been dissected and examined.

*Male genitalia* (Figure 139). Uncus relatively broad, about 1/2 the length of the tegumen. Valva densely setose along ventral margin. Juxta with slender caudal processes laterally.

*Female genitalia* (Figure 152). Abdominal sternite VIII concave on caudal margin. Antrum long, about 1/3 length of ductus bursae, weakly sclerotized. Corpus bursae semiovalate.

*Material examined.* Two syntypes are in the BMNH; a syntype labeled as "Hydrographer Mountains, Papua New Guinea"; 1♂, 1♀, Papua New Guinea, Morobe, Wau, 1000 m, 17–30 IX 1992, V. O. Becker; Col. Becker, PNG 863, gen. slide no. CIS-5623/Park(?), CIS-5635(♂); 1♀, Papua N. Guinea, Morobe Prov., Wau, Wau Ecol. Inst., 12-24 VII 1983, S. E. Sp. M. Miller, 1200m, UV light, Mountane For.

*Distribution.* Papua New Guinea.

*Remarks.* The genitalia of the holotype have not been dissected, but there is no doubt that the above specimens are conspecific to this species.

#### 12. *Pacificulla zonias* (Meyrick, 1904)

(Figures 87, 140, 140A)

*Crocantbes zonias* Meyrick, 1904: 403; Park and Lee, 2013: 66. TL: Duaringa, Queensland, Australia [ANIC].

*Diagnosis.* Male (Figure 87). Wingspan, 14 mm. The species is characterized as follows: Head yellowish orange dorsally; basal segment of antenna yellowish orange; flagellum with brownish annulations; thorax purple brown, speckled with yellowish orange scales dorsally; forewing ground color dark fuscous, with yellowish orange fascia medially, slightly narrowed downwards, but sometimes variable; hindwing deep yellowish brown, also with broad irregular yellowish orange transverse fascia before the middle, enclosing a dark brown discal stigma; abdomen deep yellowish brown dorsally, anal tufts yellowish orange.

*Male genitalia* (Figures 140, 140A). Uncus short, less than 1/3 length of tegumen. Valva with short spine at apex; dorsal margin concave. Aedeagus (Figure 140A) with rows of spinous chains.

*Material examined.* 1♀, Duaringa, Queensland, September (Barnard), holotype, in the BMNH; 1♂, 25°04'S, 148°15'E, Oasis Lodge, Carnarvon Nat. Park, Queensland 380 m, 21 xi 1989, I.F.B. Common, gen. slide no. KTP-4, in the ANIC.

*Distribution.* Australia (Queensland).

#### 13. *Pacificulla protoma* (Diakonoff, 1954), comb. nov.

(Figures 88, 141, 153, 153A)

*Crocantbes protoma* Diakonoff, 1954: 27. TL: Bernhard Camp B, Papua.

*Diagnosis.* Male (Figure 88). Wingspan, 17–19 mm. This species has similar wing markings to *C. geniola* Meyrick, which were described from Papua New Guinea, but can be distinguished by the reddish orange median patch on the forewing narrow, with nearly parallel sides, and the dark fuscous area beyond the median patch longer, occupying more than 1/2 the length of the wing; and the hindwing has no dark fuscous basal fascia.

*Male genitalia* (Figure 141). See also Diakonoff (1954; Figure 566), RMNH gen slide no. 950D.

*Female genitalia* (Figures 153, 153A). See also Diakonoff (1954; Figure 568).

*Material examined.* 1♂, 1♀, Rattan Camp, 1200 m, 27 ii 1939 (holotype, ♂), in the RMNH.

*Distribution.* Indonesia (Papua).

#### 14. *Pacificulla eurypyra* (Meyrick, 1918), comb. nov.

(Figure 89)

*Crocantbes eurypyra* Meyrick, 1918: 231.

TL: Upper Setekwa R., Snow Mountains, Papua. [BMNH, genitalia not dissected].

*Diagnosis.* Male (Figure 89). Wingspan, 16 mm. The pattern of both wings is similar to *heliogaris* Diakonoff, but it is distinguished by the triangular blackish subbasal fascia with very oblique, straight outer margin, the round discal stigma which is not connected to costal patch on the forewing, and the hindwing without median blackish fascia. According to the original description: head, thorax, and abdomen dark violet-fuscous, face white; labial palpus white, third segment dark fuscous; forewing ground color light orange, subbasal fascia occupying from 1/3 on costa to before 1/4 on inner margin, with very oblique outer margin, a large blackish discal spot beyond middle of cell, terminal fascia running from 3/4 on costa to just before tornus, concave on inner margin; hindwing light orange; basal fascia small, dark fuscous, terminal fascia broad on costa, gradually attenuated to beyond middle of termen.

*Material examined.* 1♂, Papua, Upper Setekawa R., Snow Mountains, 2–3000 ft, without collecting date (holotype), in the BMNH (The genitalia has not been dissected).

*Distribution.* Indonesia (Papua).

*Remarks.* The species was described on the basis of a single male collected in the central mountains of New Guinea (Papua of Indonesia), and no further specimen has been found.

15. ***Pacificulla heliocharis* (Diakonoff, 1954), comb. nov.**

(Figures 90, 142, 154).

*Crocantbes heliocharis* Diakonoff, 1954: 32. TL: Araucaria Rattan Camp, Papua.

*Diagnosis.* Male (Figure 90). Wingspan, 17 mm. The wing pattern of this species is similar to *P. eurypyra* (Meyrick), but the discal spot is extended to the costa, and the hindwing has a blackish median fascia and the terminal blackish fascia extended to the inner margin. Diakonoff (1954) referred that this species is close to *P. thermocharis* (Meyrick), but it is smaller. The male genitalia are differentiated from those of congeners by the uncus triangularly taeniated toward the apex.

*Male genitalia* (Figure 142). See also Diakonoff (1954; Figure 576), RMNH gen slide no. 939D.

*Female genitalia* (Figure 154). See also Diakonoff (1954; Figure 582), RMNH gen slide no. 940D.

*Material examined.* 1♂, Araucaria Camp, 800 m, 12 iii 1935 (holotype); 3♀, same collecting data, 17 iii 1939, 7–29 iii 1939, Rattan Camp, 1200 m, 14 iii 1939.

*Distribution.* Indonesia (Papua).

*Remarks.* The species was described based on a male (holotype) and six females. The holotype and four females are in the RMNH.

16. ***Pacificulla ignigera* (Meyrick, 1938)**

(Figure 91)

*Crocantbes ignigera* Meyrick, 1938: 513; Park and Lee, 2013: 66. TL: Mafulu, Papua New Guinea.

*Diagnosis.* Male (Figure 91). Wingspan, 17 mm. This species is externally similar to *C. searsi* Park, but can be distinguished by the forewing with costa oblique beyond 3/4, a poorly developed blackish fascia beyond the middle of the cell and smaller yellowish spot in the cell; the hindwing with elongate blackish streak above the cell medially.

*Material examined.* ♂, Papua N Guinea, Mafulu, 4000 ft, December, L.E. Cheesman, without left hindwing and abdomen (holotype), in the BMNH.

*Distribution.* Papua New Guinea.

17. ***Pacificulla cleomorpha* (Meyrick, 1931), comb. nov.**

(Figure 92)

*Crocantbes cleomorpha* Meyrick, 1931: 74; Clarke, 1965: 20, pl. 10, Figure 1–1c. TL: Hydrographer Mountains, Papua [BMNH].

*Diagnosis.* Female (Figure 92). Wingspan, 16 mm. This species is allied to the preceding species, but can be distinguished by the forewing being somewhat dilated posteriorly, with an obtuse apex, and with the irregular antemedian fascia, enclosing a small triangular orange discal stigma.

*Female genitalia:* See Clarke (1964, Pl. 10, Figure 1–1c).

*Material examined.* 1♀, Hydrographer Mountains, Papua New Guinea, 2500 ft, iii 1918 (holotype), in the BMNH.

*Distribution.* Papua New Guinea.

18. ***Pacificulla searsi* Park, 2013**

(Figure 93)

*Pacificulla searsi* Park and Lee, 2013: 71. TL: Gulf Prov., Papua New Guinea.

*Diagnosis.* Male (Figure 93). Wingspan, 18 mm. The species is externally similar to *P. ignigera* (Meyrick) in the wing pattern of the both wings, but can be distinguished by the nearly straight costa and broader blackish fascia, followed by the yellowish elliptical spot in cell of the forewing, and triangular blackish marking below the costa medially. Female is unknown.

*Male genitalia.* See Park (2013, Figures 35 and 35a–c).

*Material examined.* 1♂, Papua New Guinea, Gulf Prov., Ivimka Res. Stn., Lakekamu Basin, 7°44'S, 140°30'E, 2 IV 2000, leg. T. Sears, gen. slide no. CIS-6201/Park (holotype), in the USNM.

*Distribution.* Papua New Guinea.

19. ***Pacificulla gelastis* (Meyrick, 1918), comb. nov.**

(Figure 94)

*Crocantbes gelastis* Meyrick, 1918: 97; Meyrick, 1925: 231. TL: Upper Setekwa R., Snow Mountains, 2–3000 ft, Papua [BMNH] (the genitalia are not dissected).

*Diagnosis.* Male (Figure 94). Wingspan, 17 mm. This species has a similar color pattern of wings to *P. zonias* (Meyrick), but can be distinguished by the forewing with elliptically elongated yellowish orange postmedian fascia, not reaching the costa and dorsum, and the hindwing without stigma on the yellowish median fascia. The head and thorax are dark purplish brown, and the face is shining orange-white. The hindwing ground color is the same as that of the forewing, with a broad yellowish median band. No female is known.

*Material examined.* 1♂, New Guinea, Upper Setekwa R., Snow Mountains, 2–3000 ft (holotype), in the BMNH (the genitalia of the holotype have not been dissected).

*Distribution.* Indonesia (Papua).

20. ***Pacificulla kekamatana* Park, 2013**

(Figures 95, 104)

*Pacificulla kekamatana* Park, 2013: 76. TL: Indonesia, Papua, Kekamatan.

*Diagnosis.* Female (Figure 95). Wingspan, 19–20 mm. The species is distinguished from its allies by the wing color pattern: basal dark fuscous fascia running narrowly towards the costa, extended to 3/4 length of costa, and with a dark fuscous subterminal line arising from beyond 3/4 of the costa and terminated before the tornus. The labial palpus is illustrated in Figure 104.

*Female genitalia.* See Park (2013, Figures 38 and 38a).

*Material examined.* 2♀, Papua, Indonesia- Kekamatan Oksibill, Mabilabol 1340m, 4° 54'S, 140°37'E, 21–25 ii 2005, Montane Forest, UNCEN-ZMA Expedition, Papua Indonesia 2005, gen. slide no. CIS-6039/Park (holotype).

*Distribution.* Indonesia (Papua).

21. ***Pacificulla ignea* (Meyrick, 1925), comb. nov.**

(Figures 96, 154)

*Crocantbes ignea* Meyrick, 1925. Treubia. 6: 429. TL: Mafulu, Papua [BMNH].

*Diagnosis.* Female (96). Wingspan, 20 mm. The species is characterized by the following characters in the original description: "Head and thorax metallic-dark gray; antenna dark purplish brown, apical 1/2 creamy white; labial palpus with second segment white on lower edge; third segment about 1/2 of second segment in male, longer than second in female. Forewing ground color light orange, with purplish black subbasal fascia; a large purplish black blotch before middle, occupying from inner margin to upper edge of cell; several long, blackish longitudinal streaks well-developed, reaching posterior purplish black patch occupying posterior fourth of wing; costa nearly straight, then arched beyond 2/3." The forewing venation is somewhat different from that of congeners with the R<sub>2</sub> free.



**Female genitalia** (Figure 154). Eight abdominal sternite with weakly sclerotized, broad plate along posterior margin. Ostium bursae slightly emarginated medially. Ductus bursae narrow, broadened prior to corpus bursae, with spiraled slender cestum anteriorly. Corpus bursae as long as ductus bursae; signum transverse elongate, narrow plate, slightly serrated.

**Material examined.** 1♀, Dutch New Guinea, without detail locality, 1933 (holotype, abdomen missing), in the BMNH; 1♀, labeled as “New Guinea-Expedition, 1903, 8-10, written with some unrecognizable characters”, gen. slide no. CIS-6104/Park.

**Distribution.** Indonesia (Papua).

**22. *Pacificulla sceptrophora* (Diakonoff, 1954), comb. nov.**  
(Figures 97, 143, 155)

*Crocantbes sceptrophora* Diakonoff, 1954: 28. TL: Rattan Camp, Papua.

**Diagnosis.** Male (Figure 97). Wingspan, 18–21 mm. This species is superficially very similar to *P. ignea*, but can be distinguished by the apical dark purplish brown fascia with nearly straight inner margin, whereas this is more or less angled on vein  $M_3$  in *P. ignea*. The female genitalia can be differentiated as shown in Figure 157.

**Male genitalia** (Figure 143): See also Diakonoff (1954; Figure 572), based on slide no. 948D. Uncus slender. Costal bar connecting tegumen and valva small, angled medially. Valva slender, nearly parallel sides, not dilated, with dense bristles on surface, especially along margin; apex more or less truncate. Aedeagus rather stout; cornutus with a curved series of small teeth.

**Female genitalia** (Figure 155). See also Diakonoff (1954; Figure 572), based on slide no. 948. Differ from those of *P. ignea* by

the ostium bursae deeply emarginated in V-shape medially, longer cestum, and broad, band-like signum. =

**Material examined.** 1♂, labeled as “Bernhard Camp B, 100 m, April 9, 1938 (holotype); 1♀, April 11, 1938 (J. Olthoe)”, in the RMNH.

**Distribution.** Indonesia (Papua).

**23. *Pacificulla thermocharis* (Meyrick, 1931), comb. nov.**

*Crocantbes thermocharis* Meyrick, 1931: 75; Meyrick, 1925: 231. TL: Kumusi R. Papua New Guinea.

**Diagnosis.** Wingspan, 15 mm. It is noted that this species is closed to *C. cleomorpha* Meyrick. The species was described based on a single male, but the type has not been found and is probably lost.

**Material examined.** No specimen is available.

**Distribution.** Papua New Guinea.

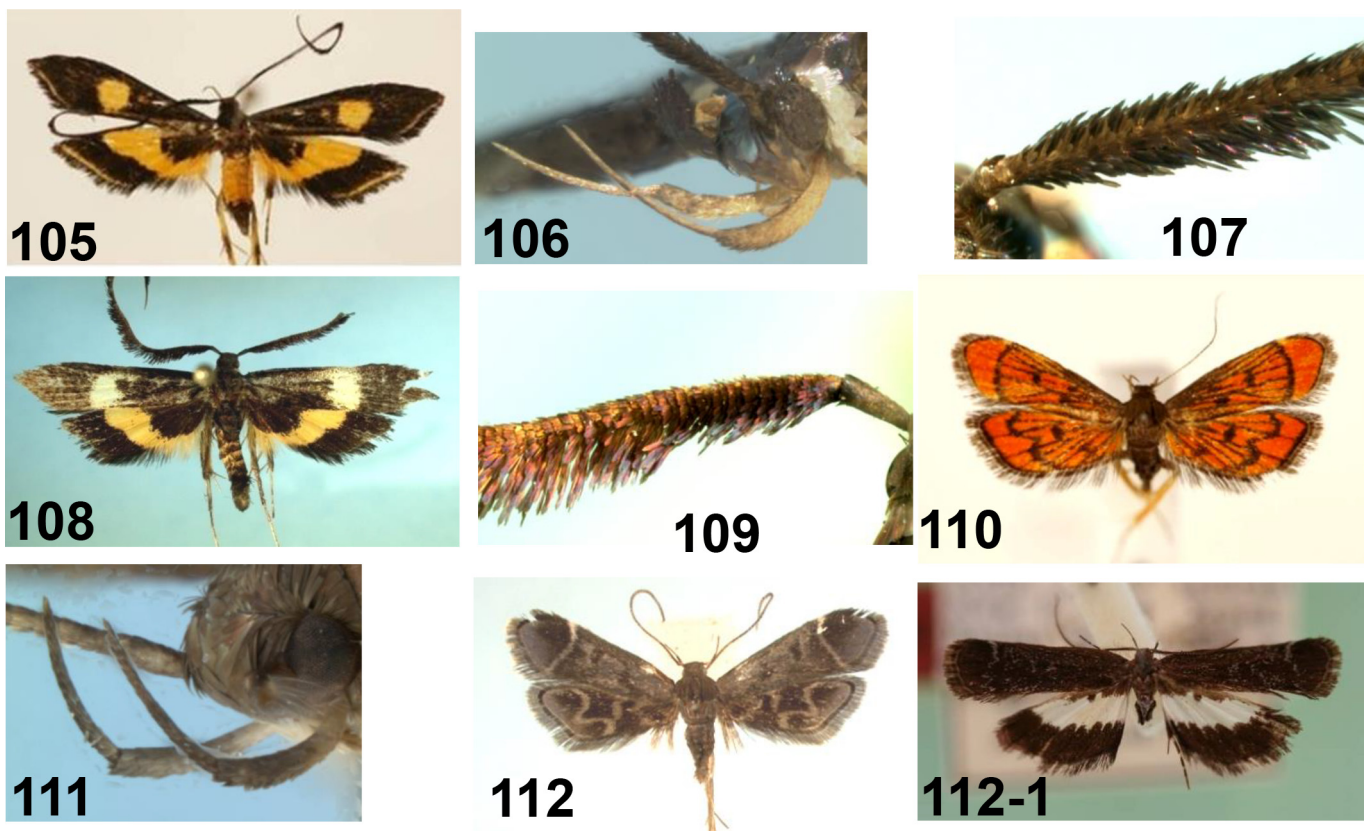
**Hannara Park, 2013**

TS: *Hannara buloloensis* Park, 2013.

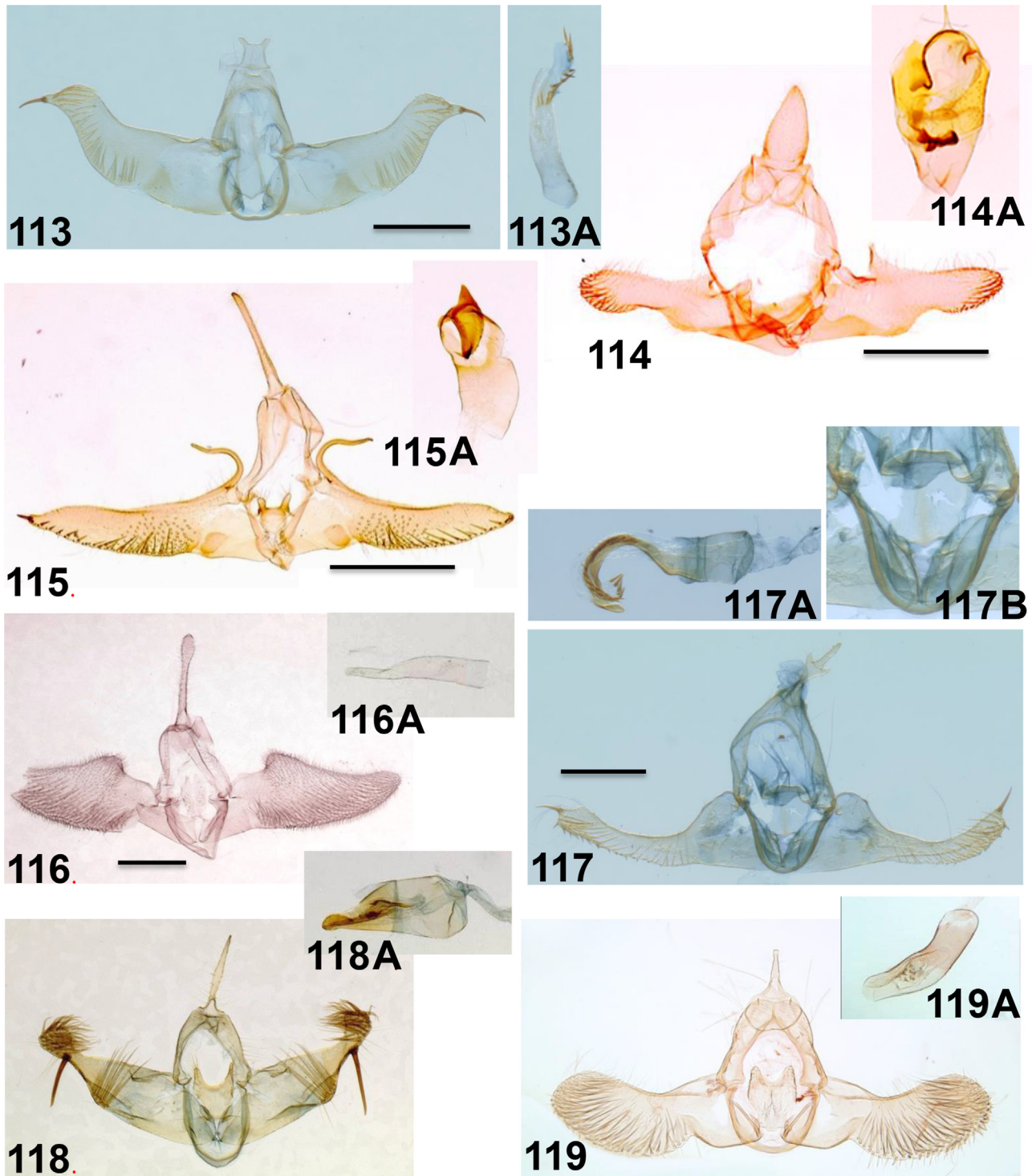
*Hannara* Park is defined by the following morphological characters: (1) both wings brightly colored with similar maculation, especially with a large deep orange patch medially; (2) forewing with  $R_2$  connate or short-stalked with  $R_{3+4}$ ; (3) flagellum of the antenna uniquely specialized with long scales along the posterior margin, except in the apical part, sometimes appressed or short rough scales on the anterior margin; (4) labial palpus with third segment very slender, longer than second segment; and (5) male genitalia with variable shaped valva and elongated juxta. Two species have been known in Papua New Guinea.

**1. *Hannara buloloensis* Park, 2013**

(Figures 105, 106, 107)



**Figures 105–112.** Adults and labial palpi of *Hannara* Park and *Gonaepa* Walker: 105, *Hannara buloloensis* Park, USNM; 106, ditto, labial palpus; 107, ditto, antenna; 108, *H. genesis* Park, holotype, USNM; 109, ditto, antenna; 110, *Gonaepa pyrochorda* Meyrick; 111, labial palpus of *G. pyrochorda* Meyrick; 112, *G. phaeograpta* Meyrick; 112-1, *G. dysthyma* Diakonoff. USNM = National Museum of Natural History.



**Figures 113–119.** Male genitalia of *Aprosoesta* and *Crocanthes* species: 113, *Aprosoesta subpancala* Park, sp. nov.; 113A, ditto, aedeagus; 114, *A. vinnula* Park, sp. nov.; 114A, ditto, aedeagus; 115, *A. strombiana* Park, sp. nov.; 115A, ditto, aedeagus; 116, *A. heliograptia* Meyrick; 116A, ditto, aedeagus; 117, *A. cordispina* Park, sp. nov.; 117A, ditto, aedeagus; 117B, ditto, close-up juxta; 118, *A. eremitos* Park, sp. nov.; 118A, ditto, aedeagus; 119, *Crocanthes prasinopsis* Meyrick; 119A, ditto, aedeagus. <scale bar: 0.5 mm>

*Hammara buloloensis* Park and Lee, 2013: 220.

**Diagnosis.** Male (Figure 105). Wingspan, 20–21 mm. This and the following species have similar wing maculation and uniquely specialized flagellum with long scales, but this species can be distinguished from *H. genesis* Park by the forewing with a rounded median patch and a light orange terminal line along the termen in both wings. The male genitalia are easily distinguished from each

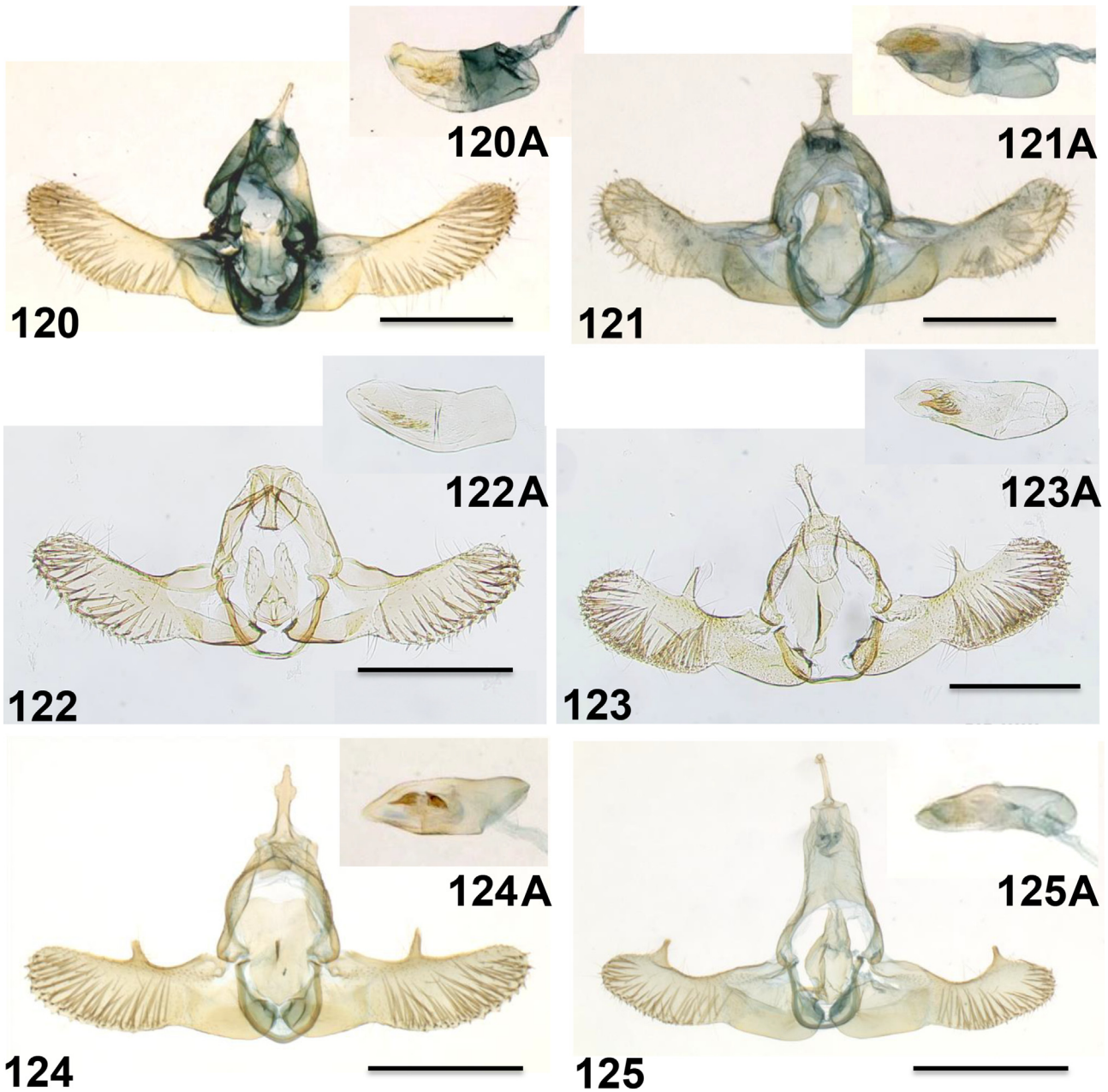
other by the shape of valva. The labial palpus and the antenna are illustrated in Figures 106, 107.

**Male genitalia.** See Park (2013, Figures 3 and 3a–c).

**Female genitalia.** See Park (2013, Figures 5, 5a, and 5b).

**Material examined:** 1♂, 1♀, Papua N. Guinea, nr Bulolo, Mt. Susu Nat. Res., 975m, 11–15 VIII 1983, S. Miller; UV light, Araucaria For., gen. slide no. CIS-5634/Park (holotype).

**Distribution.** Papua New Guinea.



**Figures 120–125.** Male genitalia of *Crocanthes* species: 120, *Crocanthes glycina* Meyrick; 120A, ditto, aedeagus; 121, *C. zonodesma* Lower; 121A, ditto, aedeagus; 122, *C. halurga* Meyrick; 122A, ditto, aedeagus; 123, *C. perigrapta* Meyrick; 123A, ditto, aedeagus; 124, *C. acroxantha* Lower; 124A, ditto, aedeagus; 125, *C. thiomorpha* Turner; 125A, ditto, aedeagus. <scale bar: 0.5 mm>

## 2. *Hannara genesis* Park, 2013

(Figures 108, 109)

*Hannara genesis* Park and Lee, 2013: 223.

**Diagnosis.** Male and female (Figure 108). Wingspan, 23–24 mm. This new species has similar wing pattern and maculation with that of *C. buoloensis*, but it can be easily distinguished by the larger median patch connected to inner margin,  $R_2$  shortly stalked with  $R_{3+4}$ , the absence of the orange lines along the termen in both wings, and the basal fascia extended to the inner margin. The male genitalia are easily distinguished from each other, especially by the shape of valva with trapezoidal protrusion before the middle of thecosta, then slightly concave; cucullus with rounded outer margin, bearing dense bristles in posterior part and the shape of juxta. The antenna is illustrated in Figure 109.

**Male genitalia.** See Park (2013, Figures 4 and 4a–c).

**Female genitalia.** See Park (2013, Figures 6, 6a, and 6b).

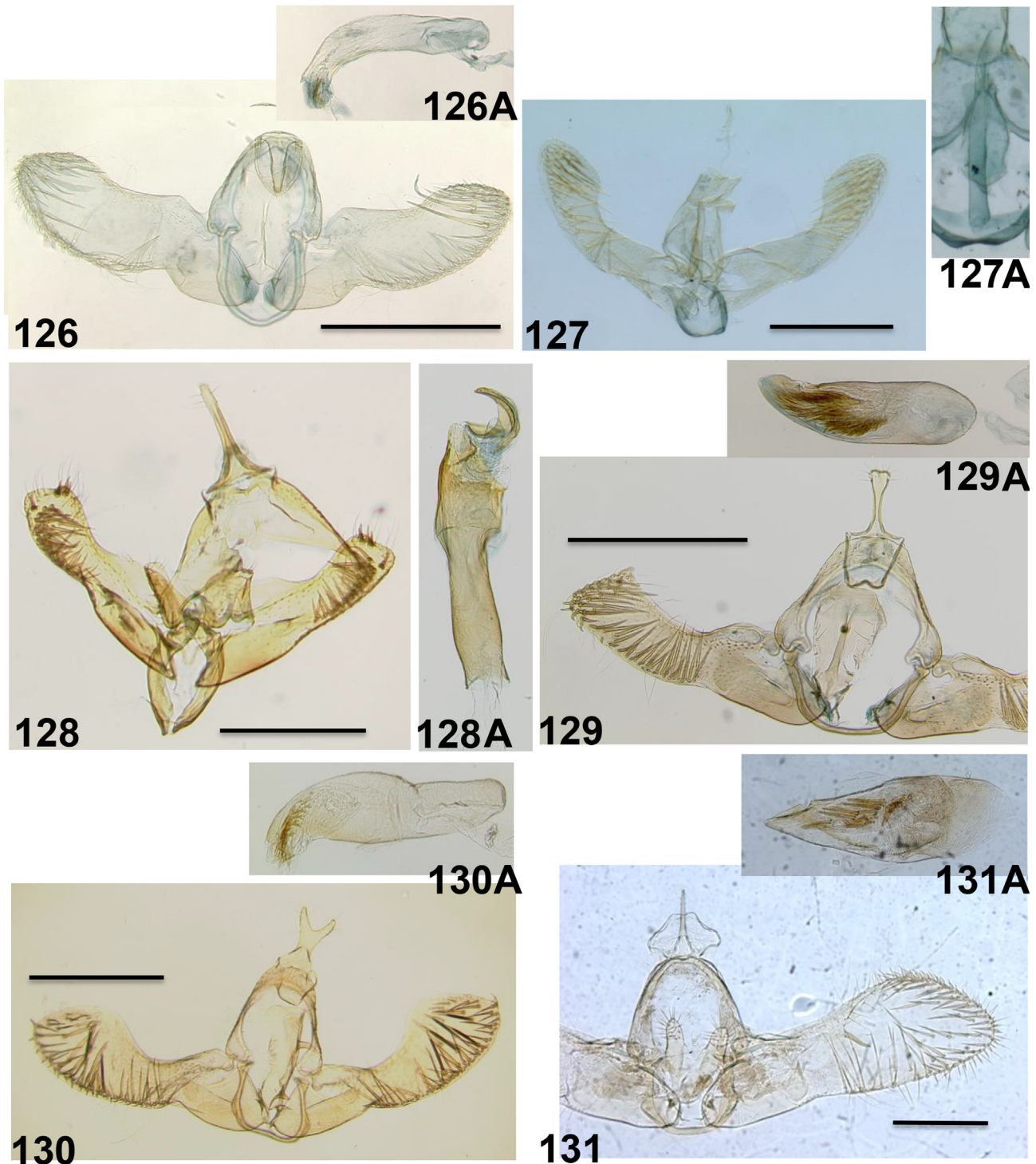
**Material examined.** 1♂, 1♀, Central New Guinea, Lorentz, 1909–10, Alkmaar, x1. (19)09, gen. slide no. CIS-6041/Park (holotype).

**Distribution.** Papua (Indonesia).

## *Goneapa* Walker, 1866

TS: *G. josianella* Walker, 1866: 1840.

*Goneapa* Walker was established based on *G. josianella* Walker, but the type specimen has not been found. Walker (1866) did not provide details on the character of the antenna, but described it as “slender, setose, bristles long, slender”. Meyrick (1925) gave a more detailed diagnosis as “antenna nearly as same as the forewing length; in male, strongly ciliated,

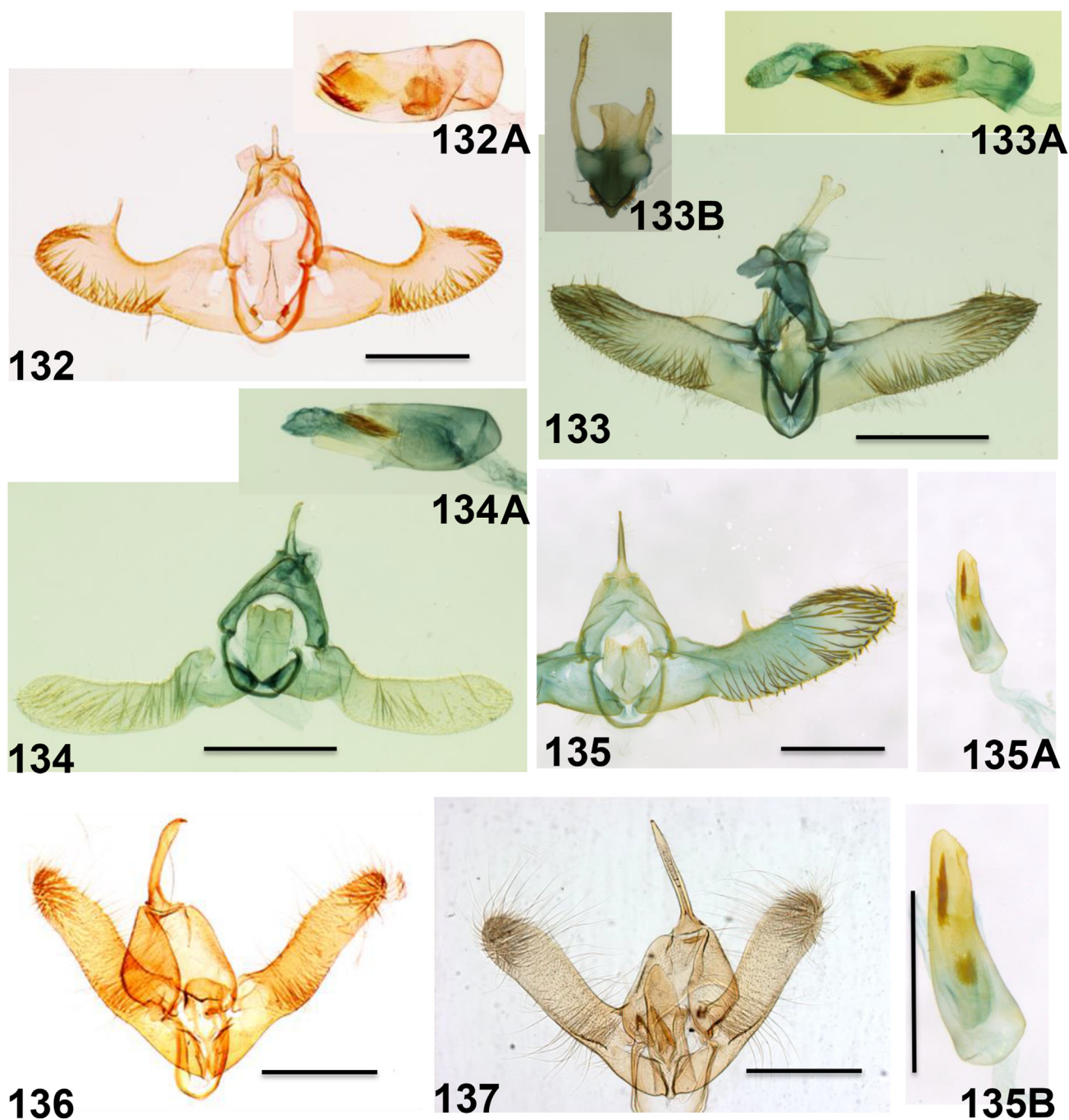


**Figures 126–131.** Male genitalia of *Crocanthes* species: 126, *Crocanthes microdelpha* Lower; 126A, ditto, aedeagus; 127, *C. gracilosa* Park; 127A, ditto, aedeagus; 128, *C. diula* Meyrick; 128A, ditto, aedeagus; 129, *C. characotis* Meyrick; 129A, ditto, aedeagus; 130, *C. chordotona* Meyrick; 130A, ditto, aedeagus; 131, *C. anacostola* Diakonoff; 131A, ditto, aedeagus. <scale bar: 0.5 mm>

basal joint elongate, without pectin". The labial palpus is very long, recurved, about thrice longer than the width of the head; third segment slender, as long as second, acute. According to Meyrick (1925), the forewing venation has  $CuA_1$  absent,  $CuA_2$  and  $M_3$  stalked,  $R_3$  and  $R_4$  out of  $R_5$ ,  $R_5$  to the costa, and the hindwing with  $M_3$  absent,  $CuA_1$  and  $M_2$  connate or stalked. The genital character of the genus is also unknown, but only those of

*G. dysthyma* Diakonoff were illustrated by Diakonoff (1954). The main character of the species is the gnathos with blunt and porrect process.

Thus, all species that have colorful wings, antennae with long ciliation and not longer than forewing, and male genitalia with the blunt and porrect gnathos, are tentatively placed in this genus, separating from *Crocanthes*. The following four species are known.



**Figures 132–137.** Male genitalia of *Crocanthes* and *Pacificulla* species: 132, *Crocanthes sidonia* Meyrick; 132A, ditto, aedeagus; 133, *C. susuensis* Park; 133A, ditto, aedeagus; 134, *C. hagenensis* Park; 133B, close-up juxta; 134A, ditto, aedeagus; 135, *C. scioxantha* Meyrick; 135A, ditto, aedeagus; 135B, close-up aedeagus; 136, *Pacificulla miltina* (Durrant); 137, *P. megalophthalma* (Diakonoff). <scale bar: 0.5 mm>

*Goneapa actinis* Walsingham, 1915, was described from New Guinea, but it could not be confirmed here, due to a lack of available information apart from its original description.

#### 1. *Goneapa pyrochorda* Meyrick, 1910

(Figures 110, 111, 144, 144A, 156, 156A)

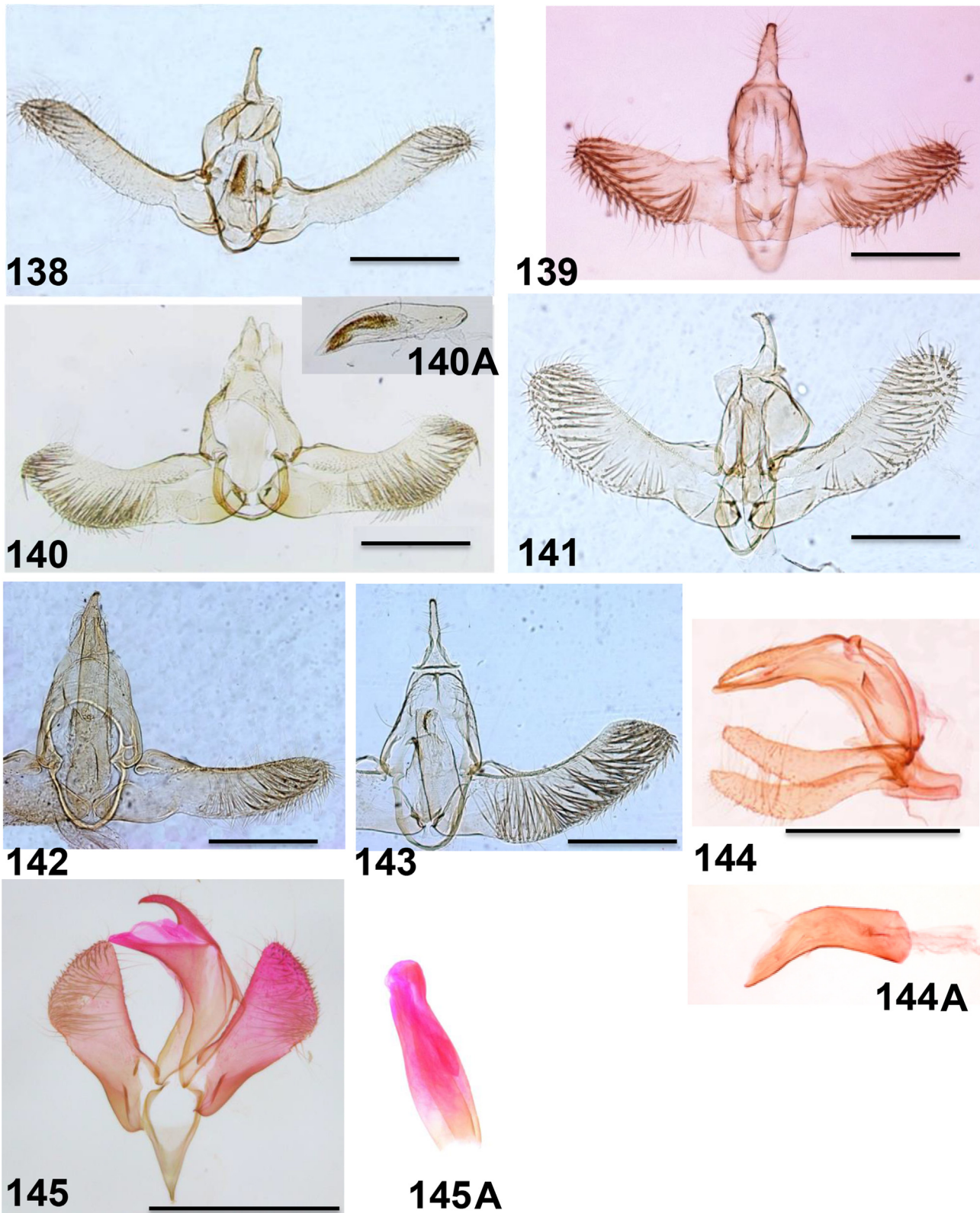
*Goneapa pyrochorda* Meyrick, 1910: 442. TL: St. Aignan Island, Sudest Island, Trobriand Island, Kei Island, Papua New Guinea [BMNH].

*Crocanthes pyrochorda*; Meyrick, 1925: 231. Pl. 4, Figure 84.

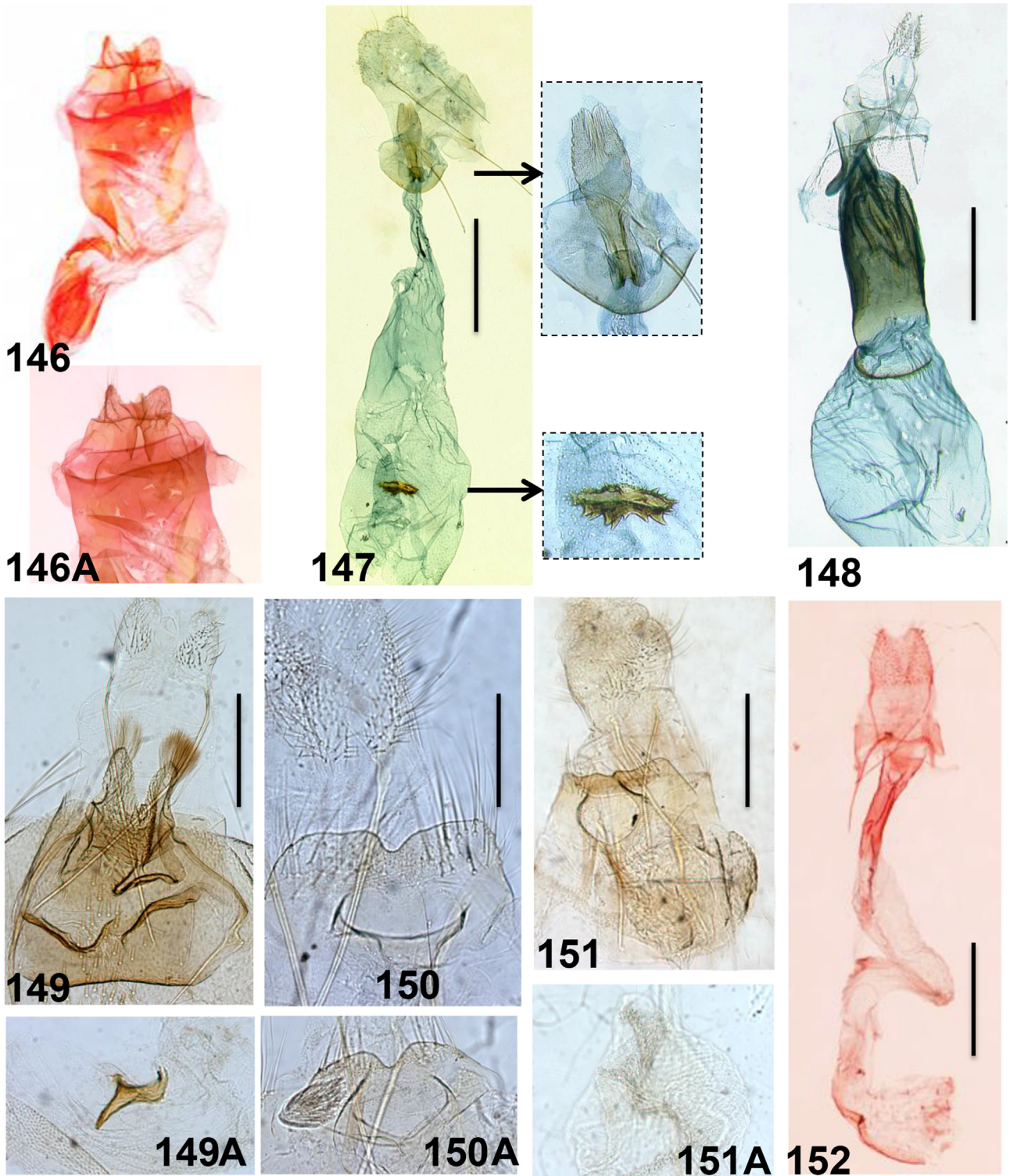
**Diagnosis.** Male and female (Figure 112). Wingspan, 12–14 mm. The species was originally placed in the genus *Goneapa*, but it was

placed in *Crocanthes* by Meyrick (1925). The species is characterized by the reddish orange ground color of both wings with costal and outer margin and all veins marked with black lines, with well-developed blackish curved transverse lines, and fringes dark gray with whitish tips on the both wings. Forewing venation with  $R_5$  absent.

**Male genitalia** (Figures 144, 144A). Uncus stout, acute apically. Basal part of gnathos as long as uncus, lacking median process. Tegumen with a small, short, quadrate process on lateral sides. Valva slender, bent medially; apex rounded. Aedeagus short, bent medially, without cornutus.



**Figures 138–145.** Male genitalia of *Pacificculla* and *Gonaepa* species: 138, *P. pyrostola* (Diakonoff); 139, *P. geniola* (Meyrick); 140, *P. zonias* (Meyrick), 140A, ditto, aedeagus; 141, *P. protoma* (Diakonoff); 142, *P. heliocharis* (Diakonoff); 143, *P. sceptrophora* (Diakonoff); 144, *Gonaepa pyrochorda* Meyrick, 144A, ditto, aedeagus; 145, *G. phaeograptia* (Meyrick); 145A, ditto, aedeagus. <scale bar: 0.5 mm>



**Figures 146–152.** Female genitalia: 146, *Aprosoesta vinnula* Park, sp. nov.; 146A, ditto, close-up ostium-ductus bursae; 147, *Crocanthes doliopa* Meyrick, with close-up Ostium part and signum in the insets depicted; 148, *C. trizona* Lower; 149, *C. leucodonta* Diakonoff; 149A, ditto, close-up signum; 150, *Pacificulla philotima* (Diakonoff); 150A, *P. xanthorrhoea* Diakonoff (syn. of *P. philotima*); 151, *P. megalophthalma* (Diakonoff); 151A, ditto, corpus bursae; 152, *P. geniola* (Meyrick). <scale bar: 0.5 mm>

**Female genitalia (Figures 156, 156A).**

**Material examined.** 6♂, Papua N. Guinea, Morobe, Wau, 1000m, 17–30 IX 1992, Col. V. O Becker, PNG 872; 2♂, 1♀, Madang, Brahman Mission- 200m, 11-15 X 1992, V. O Becker Col; Col. Becker, PNG 2997, gen. slide no. CIS-5621/Park(♀), -5639/Park (♂).

**Distribution.** Papua New Guinea (St. Aignan Island, Sudest Island, Trobriand Island, Kei Island).

**2. *Goneapa heliarcha* (Meyrick, 1886)**

*Crocanthes heliarcha* Meyrick, 1886: 278. TL: Port Moresby, Papua New Guinea.

*Gonaepa heliarcha*; Durrant, 1915: 150; Meyrick, 1925: 232; Diakonoff, 1954: 38.

**Diagnosis.** Wingspan, 13 mm. The species was described in the genus *Crocantthes*, and it was transferred to *Goneapa* by Durrant (1915).

**Material examined.** The TS has not been found.

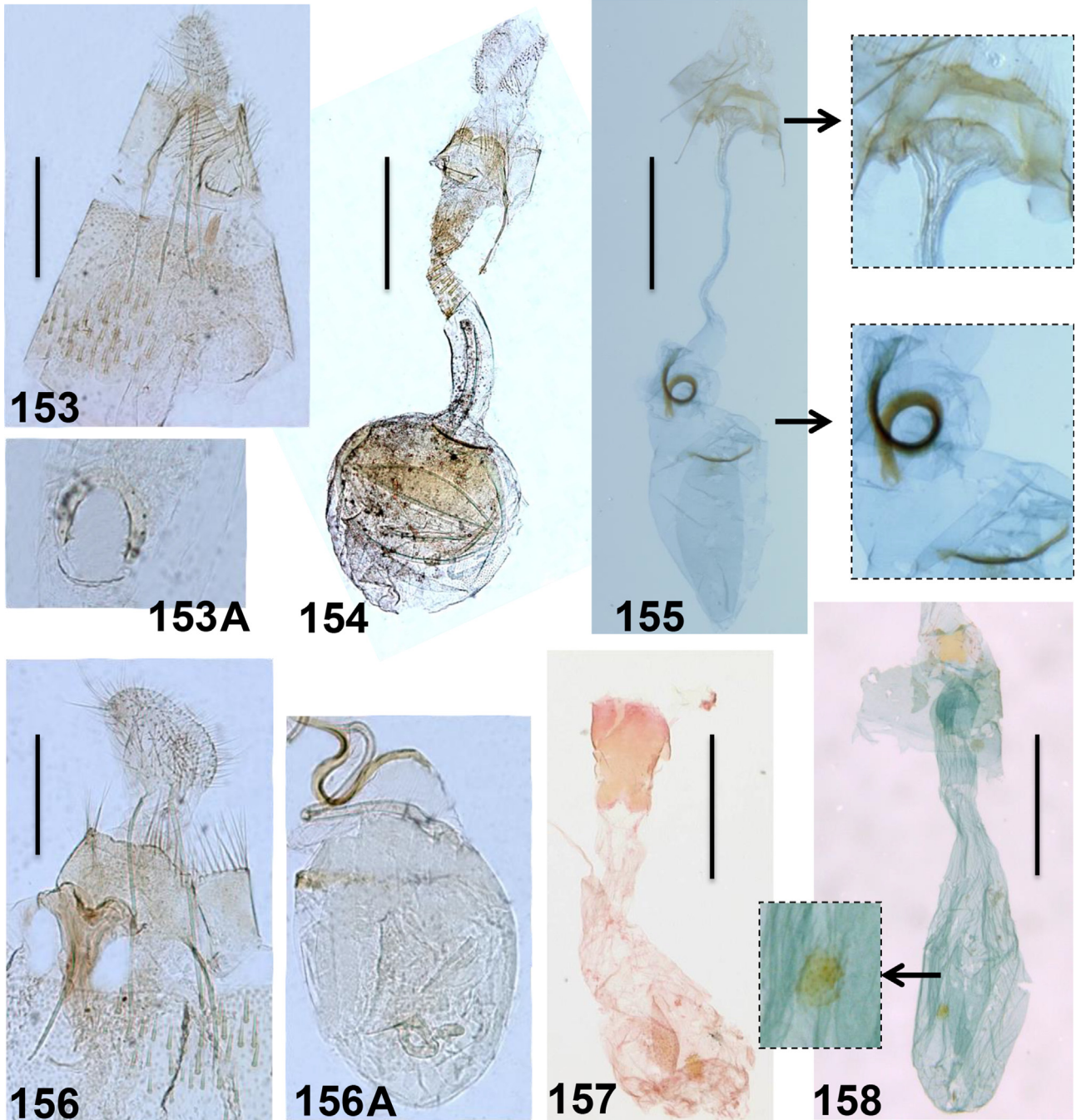
**Distribution.** Papua New Guinea (Port Moresby).

3. *Gonaepa phaeograptta* (Meyrick, 1931), **comb. nov.** (Figures 112, 145, 145A)

*Crocantthes phaeograptta* Meyrick, 1931: 75. TL: Kumushi R., Papua New Guinea [BMNH].

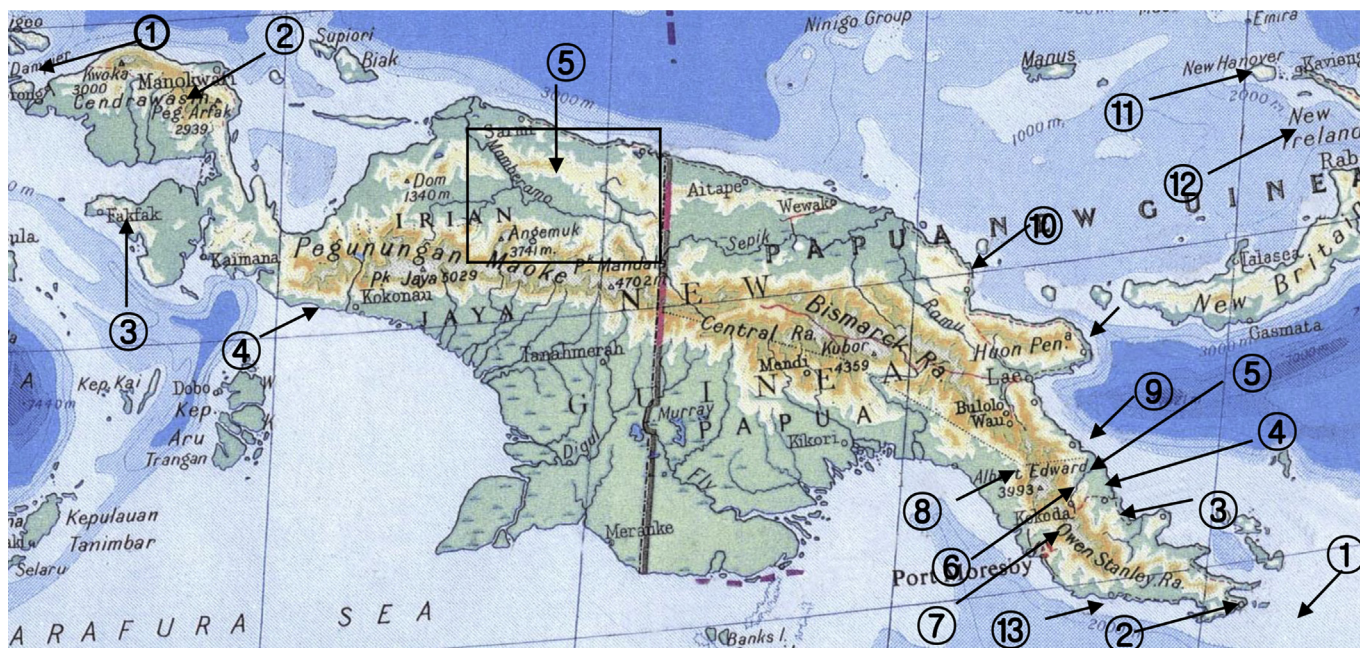
**Diagnosis.** Male (Figure 114). Wingspan, 12 mm. The species is characterized by the dark fuscous head and thorax; forewing ground color dark fuscous, with a well-developed whitish postmedian line, concave outward medially and a blackish, elongated transverse discal stigma at the end of the cell; hindwing ground color as the forewing, with W-shaped whitish postmedian line.

**Male genitalia** (Figures 145, 145A). Uncus curved downward, acute apically. Basal part of gnathos as long as uncus, lacking median process. Valva foot-shaped, broadened distally, concave on dorsal margin medially, distal margin convex, densely setose in distal part. Saccus sharply produced, acute anteriorly. Aedeagus stout, as long as valva, slightly narrowed at basal 1/4, without cornutus.



**Figures 153–158.** Female genitalia: 153, *P. protoma* (Diakonoff); 153A, ditto, signum; 154, *P. heliarchis* (Diakonoff); 155, *P. ignea* Meyrick with close-up ostium and signum; 156, *P. sceptrifera* (Diakonoff); 156A, ditto, corpus bursae; 157, *Gonaepa pyrrochorda* Meyrick; 158, *G. phaeograptta* (Meyrick) with close-up signum in inset depicted. <scale bar: 0.5 mm>





**Figure 159.** Map for the type localities of the previously known species: Papua (Indonesia) - ① Is. Dampier; ② Bird'shead Peninsula; ③ Kapaur, Fat Fak; ④ Mimika; ⑤ Area of the 3rd Archbold Expedition; Papua New Guinea - ⑥ St. Aignan; ⑦ Is. Sariba; ⑧ Kumusi River; ⑨ Hydrographer Mts; ⑩ Mafula; ⑪ Biagi; ⑫ Mambra River; ⑬ Aroa River; ⑭ Morobe; ⑮ Madang; ⑯ New Hanover; ⑰ New Ireland; ⑱ Port Moresby.

*Female genitalia.* (Figure 158). See Clarke (1964, Pl.11, Figures 2 and 2c; gen. slide no. BMNH-9139).

*Material examined.* 1♀ (type), Kumusi R., N. E. British New Guinea v-ix 1907, BM slide no. 9139; 4♂, Papua New Guinea, Madang, Brahman Mission, 200 m, 11-15 x 1992, V. O. Becker Col.; Col. Becker PNG 2999, gen. slide No. CIS-5944/Park, -6497/Park (♂). 6498(♀).

*Distribution.* Papua New Guinea (Madang).

*Remarks.* The type was erroneously recorded as a male, but it is a female. The male genitalia are known for the first time since it was described.

#### 4. *Goneapa dysthyma* Diakonoff, 1954 (Figure 112-1)

*Goneapa dysthyma* Diakonoff, 1954: 38. TL: Rattan Camp, Papua, Indonesia [RMNH].

*Diagnosis.* Wingspan, 19–20 mm. The species is easily recognized by the forewing with a white transverse, sordid, subterminal line arising from 4/5 of the costa, and the hindwing with a very wide whitish band medially.

*Male genitalia.* See Diakonoff (1954; Figure 577). Characterized by having a spike-like apical process at the end of valva, and very large aedeagus with a series of 14 spines.

*Female genitalia.* See Diakonoff (1954; Figure 577).

*Material examined.* 1♂, Rattan Camp, 1150-1200 m, Feb. 4, 1939 (holotype), in the RMNH.

*Distribution.* Indonesia (Papua).

#### 5. *Goneapa actins* Walsingham, 1915

*Goneapa actins* Walsingham, 1915: 149; Meyrick, 1925: 232.

*Diagnosis.* Wingspan, 12–14 mm. The morphological character is defined as follows in the original description: antenna biciliate; rather less than the length of the forewing; pale orange-yellow, shaded with black above, cilia smoky. Palpi slender, smooth recurved with scales; hindtibia somewhat roughly scaled, hairy above, the basal joint of the hind tarsi also roughly clothed above.

*Material examined.* The holotype has not been known and no further specimen is available.

*Distribution.* Indonesia (Papua, Snow Mountains).

*Remarks.* Durrant (1915) cited this species as *Goneapa actins*, sp. n. and noted that it is described by L. Walsingham.

#### 6. *Goneapa josianella* Walker, 1866

*Goneapa josianella* Walker, 1866: 1840; Meyrick, 1925: 232.

*Diagnosis.* Wingspan, 10 mm. In original description, "Forewing with luteous stripe along the interior border widening from the base; a slightly undulating gilded luteous submarginal line; hindwing with a broad gilded luteous stripe, which is acutely dentate along its hind side and contains a cupreous dot".

*Material examined.* None available.

*Distribution.* New Guinea (no detail locality).

### A word catalogue of the subfamily Crocanthinae

#### *Aprosoesta* Turner, 1919

TS: *Aprosoesta pancala* Turner, 1919.

#### The *pancala* species-group

*cyclopsana* (Park, 2011: 784), **comb. nov.** Papua, Indonesia.

TL: Papua, Depapre. [RMNH].

Figure: Park (2013).

*gatoralis* (Park, 2011: 784), **comb. nov.** Papua, Indonesia.

TL: Papua, Birdshhead Peninsula. [RMNH].

Figure: Park (2013).

*pancala* Turner, 1919: 151. Australia.

TL: Australia, Queensland. [ANIC].

*poliozona* (Park, 2011: 782), **comb. nov.** Papua New Guinea.

TL: Papua New Guinea, Madang [USNM].

Figure: Park (2013).

*warmarensis* (Park, 2011: 784), **comb. nov.** Papua, Indonesia.

TL: Papua, Birdshhead Peninsula. [RMNH].

Figure: Park (2013).

- subpancala* Park, 2015, **sp. nov.** Papua New Guinea. TL: St. Aignan Island, Sudest Island, Sariba Island, Queensland. [USNM]. TL: Papua New Guinea, Madang. [BMNH, syntype].
- The *vinula* species-group**
- cordispina* Park, **sp. nov.** Papua New Guinea. TL: Papua New Guinea, Madang. [USNM].
- heliograpt* Meyrick, 1929: 520. Papua, Indonesia. TL: Papua, Dampier Island [BMNH]. Figure: Clarke (1965)
- strombiana* Park, **sp. nov.** Papua New Guinea. TL: Papua New Guinea, Morobe. [USNM].
- vinula* Park, **sp. nov.** Papua New Guinea. TL: Papua New Guinea, Madang. [USNM].
- eremitatos* Park, **sp. nov.** Papua, Indonesia. TL: Papua, Kekamatan. [RMNH].
- Crocant**es Meyrick, 1886  
TS: *Crocant*es prasinopis Meyrick, 1886.
- The prasinopis species-group**
- acroxantha* Lower, 1896: 170. Australia. TL: Queensland. [BMNH, SAMA].
- diula* Meyrick, 1904: 398. Australia. TL: Queensland. [BMNH, syntype].
- doliopa* Meyrick, 1921: 434. Australia. TL: Queensland. [SAMA].
- epitherma* Lower, 1896: 170. Australia. TL: Queensland. [SAMA]
- glycina* Meyrick, 1904: 400. Australia. TL: Viktoria, Tasmania. [BMNH].
- gracilosa* Park, 2015, **sp. nov.** Papua New Guinea. TL: Papua New Guinea, Madang [USNM].
- halurga* Meyrick, 1904: 399. Australia. TL: Queensland. [BMNH, paratype].
- micradelpha* (Lower, 1897: 56), Australia. TL: Queensland. [SAMA].
- perigrapta* Meyrick, 1904: 402, Australia. TL: Queensland. [BMNH, paratype].
- prasinopis* Meyrick, 1886: 277. Australia/Tasmania/  
Papua New Guinea. TL: E. Australia. [BMNH].
- thermobapta* Lower, 1920: 65. Australia. TL: Queensland. [SAMA].
- thiomorpha* Turner, 1933: 174. Australia. TL: Queensland. [ANIC].
- zonodesma* Lower, 1900: 50. Australia. TL: Queensland. [SAMA].
- The characotis species-group**
- characotis* Meyrick, 1916: 592. Australia. TL: N. Australia. [BMNH].
- chordotona* Meyrick, 1916: 592. Australia. TL: Queensland. [BMNH].
- trizona* Lower, 1916: 543. Australia. TL: Queensland. [ANIC, syntype].
- venustula* Turner, 1933: 179. Australia. TL: Queensland. [BMNH, syntype].
- The anacostola species-group**
- anacostola* Diakonoff, 1954: 27. Papua, Indonesia. TL: Mist Camp. [RMNH]. Figure: Diakonoff (1954).
- temeraria* Meyrick, 1910: 443. Papua New Guinea. TL: Aroa R., nr. Port Morseby, Papua New Guinea. [BMNH].
- sidonia* Meyrick, 1910: 442. Australia/Papua New Guinea.
- The leucodonta species-group**
- aulodocha* Meyrick, 1918: 98. Papua, Indonesia. TL: Upper Setekwa R., Snow Mountains [RMNH]
- leucodonta* Diakonoff, 1954: 27. Papua, Indonesia. TL: Araucaria Rattan Camp. [RMNH]. Figure: Diakonoff (1954)
- susuensis* Park, **sp. nov.** Papua New Guinea. TL: Papua New Guinea, Madang. [USNM].
- fallax* Durrant, 1915: 164. Papua, Indonesia. TL: Papua, Upper Setekwa R., Snow Mountains. [BMNH].
- monodesma* Meyrick, 1931: 73, syn. nov. Papua, Indonesia. TL: Papua, Upper Setekwa R., Snow Mountains. Figure: Clarke (1965).
- crypsichola* Durrant, 1915: 165. Papua, Indonesia. TL: =Papua. [BMNH].
- hagenensis* Park, **sp. nov.** Papua New Guinea. TL: Papua New Guinea, Madang [USNM].
- Group not assigned**
- celema* Durrant, 1915: 152. Papua, Indonesia. TL: Papua. [BMNH].
- celemorpha* Meyrick, 1931. Papua, Indonesia. TL: Papua
- hecuba* Meyrick, 1931: 74. Papua New Guinea. TL: Papua New Guinea. [BMNH, syntype].
- phoenoteles* Meyrick, 1929: 519. Papua New Guinea. TL: Kumusi R. [BMNH]. Figure: Clarke (1965)
- platycitra* Meyrick, 1931: 73. Papua New Guinea. TL: Biagi, Mambare R. [BMNH]. Figure: Clarke (1965)
- rhodantha* Meyrick, 1918: 97. Papua, Indonesia. TL: Papua. [BMNH].
- thalamectis* Meyrick, 1929: 521. Papua New Guinea. TL: Papua New Guinea, Kumusi R. [BMNH]. Figure: Clarke (1965)
- symmochlopa* Meyrick, 1929: 519. Papua New Guinea. TL: New Mecklenburg. [BMNH, syntype].
- triglenopa* Meyrick, 1929: 520, syn. nov. Papua, Indonesia. TL: New Hannover. [BMNH, syntype].
- sceletopa* Meyrick, 1910: 445. Molukken, Indonesia. TL: Ambonia, Molukken, Indonesia. [BMNH, syntype].
- sphecotypha* Meyrick, 1933: 1. Celebes, Indonesia. TL: Celebes. [Type (?)].
- xanthistia* Meyrick, 1931: 73. Papua, Indonesia. TL: Papua, Upper Setekwa R. [BMNH]. Figure: Clarke (1965).
- Lamprista** Park, 2013  
TS: *Lamprista emmeli* Park, 2013.
- emmeli* Park, 2013: 595. Papua New Guinea. TL: Papua New Guinea, Madang. [USNM]. Figure: Park and Lee (2013).
- hemipyra* Meyrick, 1938: 513. Papua New Guinea. TL: Kokoda. [BMNH]. Figure: Clarke (1965), Park and Lee (2013).
- ortholepida* Park, 2013: 597. Papua New Guinea. TL: Papua New Guinea, Madang. [USNM]. Figure: Park and Lee (2013).
- Pacificulla** Park, 2013  
TS: *Pacificulla flaviagera* Park and Lee, 2013

- callisomata* Park, 2013. Papua, Indonesia.  
TL: Papua, Depapre. [RMNH].  
Figure: Park and Lee (2013)
- carcharias* (Meyrick, 1910: 440), **comb. nov.** Papua, Indonesia.  
TL: Papua, Fergusson. [BMNH].
- cervicalis* Park, 2013: 74. Papua, Indonesia.  
TL: Papua, Jembatan Dua. [RMNH].  
Figure: Park and Lee (2013)
- cleomorpha* (Meyrick, 1931: 74), **comb. nov.** Papua New Guinea.  
TL: Papua New Guinea, Hydrographer Mountains [BMNH].  
Figure: Clarke (1965).
- esdiparki* Park, 2013: 69. Papua New Guinea.  
TL: Papua New Guinea. [USNM].  
Figure: Park and Lee (2013)
- euryppya* (Meyrick, 1918: 9), **comb. nov.** Papua, Indonesia.  
TL: Papua, Upper Setekwa R., Snow Mountains. [BMNH].
- flaviagera* Park, 2013: 68. Papua New Guinea.  
TL: Papua New Guinea, Madang. [USNM].  
Figure: Park and Lee (2013).
- gelastis* (Meyrick, 1918: 97), **comb. nov.** Papua, Indonesia.  
TL: Papua, Upper Setekwa R. [BMNH].
- geniola* (Meyrick, 1931: 74). Papua New Guinea.  
TL: Papua New Guinea. [BMNH].
- heliobaris* (Diakonoff, 1954: 32), **comb. nov.** Papua, Indonesia.  
TL: Papua, Araucaria Rattan Camp. [RMNH].  
Figure: Diakonoff (1954).
- igneus* (Meyrick, 1925: 429), **comb. nov.** Papua, Indonesia.  
TL: Papua. [BMNH].
- ignigera* Meyrick, 1938: 513. Papua New Guinea.  
TL: Papua New Guinea, Mafulu. [BMNH].  
Figure: Clarke (1965)
- kekamatana* Park, 2013: 76. Papua, Indonesia.  
TL: Papua, Kekamatan Oksibill. [RMNH].  
Figure: Park and Lee (2013).
- megalophthalma* (Diakonoff, 1954: 30), **comb. nov.** Papua, Indonesia.  
TL: Papua, Rattan Camp. [RMNH].  
Figure: Diakonoff (1954)
- miltina* (Durrant, 1915: 151). Papua, Indonesia.  
TL: Papua. [BMNH].
- philotima* (Diakonoff, 1954: 33). Papua, Indonesia.  
TL: Papua, Bernhard Camp. [RMNH].  
Figure: Diakonoff (1954).
- xanthorrhoea* Diakonoff, 1954: 27. Papua, Indonesia.  
TL: Bernhard Camp. [BMNH].
- protoma* (Diakonoff, 1954: 27), **comb. nov.** Papua, Indonesia.  
TL: Papua, Bernhard Camp. [RMNH].  
Figure: Diakonoff (1954).
- pyrostola* (Diakonoff, 1954: 31), **comb. nov.** Papua, Indonesia.  
TL: Papua, Araucaria Camp. [RMNH].  
Figure: Diakonoff (1954).
- sceptrophora* (Diakonoff, 1954: 28), **comb. nov.** Papua, Indonesia.  
TL: Papua, Rattan Camp. [RMNH].  
Figure: Diakonoff (1954).
- scioxantha* Meyrick, 1910: 443, **comb. nov.** Papua, Indonesia.  
TL: Papua, Fakfak. [BMNH].
- searis* Park, 2013: 71. Papua New Guinea.  
TL: Papua New Guinea, Gulf Prov., Ivimka Res. Stn. [USNM].  
Figure: Park and Lee (2013).
- thermocharis* (Meyrick, 1931: 75), **comb. nov.** Papua New Guinea.  
TL: Papua New Guinea, Kumusi River [?].
- thrasydora* (Meyrick, 1910: 444), **comb. nov.** Papua, Indonesia.  
TL: Papua, Kapaur. [BMNH].
- zonias* (Meyrick, 1904: 403). Australia.  
TL: Australia, Queensland. [BMNH].
- Hannara Park, 2013**  
TS: *Hannara buloloensis* Park, 2013  
*buloloensis* Park, 2013: 220. Papua New Guinea.  
TL: Papua New Guinea, Bulolo. [USNM].  
Figure: Park and Lee (2013).
- gentis* Park, 2013: 220. Papua New Guinea.  
TL: Papua, Lorentz. [RMNH].  
Figure: Park and Lee (2013)
- Gonaepa Walker, 1866**  
*actins* Walsingham, 1915. Papua, Indonesia.  
TL: Indonesia, Papua, Snow Mountains.
- dysthyma* Diakonoff, 1954 Papua, Indonesia.  
TL: Indonesia, Papua.
- josianella* Walker, 1866. New Guinea.  
TL: New Guinea [?].
- heliarcha* Meyrick, 1886: 278. Papua New Guinea.  
TL: Papua New Guinea, Port Moresby.
- pyrochorda* Meyrick, 1910: 442. Papua New Guinea.  
TL: New Guinea. [BMNH].
- phaeograptus* (Meyrick, 1931: 75), **comb. nov.** Papua  
New Guinea.  
TL: Papua New Guinea, Kumusi R.  
Figure: Clarke (1965).

[ ] indicate the type depositories.

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