Revised generic position of the *Palaeosia* and *Calamidia* related species in New Guinea (Erebidae, Arctiinae, Lithosiini)

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Abstract: The generic position of four species which were traditionally placed in either *Palaeosia* Hampson, 1900 or *Calamidia* Butler, 1877 is revised. It turned out that *Palaeosia* and *Calamidia* are endemic to Australia and that the species in New Guinea belong to three other genera of which two are new: *Oeonosia* Hampson, 1914, *Semicalamidia* **gen. nov.** and *Neosyntaxis* **gen. nov.**
Calamidia castanea Rothschild, 1912 **syn. nov.** is synonymized with *Ilema owgarra* Bethune-Baker, 1908, *Calamidia reticulata* Rothschild, 1912 **syn. nov.** is synonymized with *Palaeosia longistriga* Bethune-Baker, 1908, *Calamidia warringtonella goliathina* Rothschild, 1912 **syn. nov.** is synonymized with *Ilema warringtonella* Bethune-Baker, 1908 *s.str.* and two new species, *Oeonosia cruda* **spec. nov.** and *O. abenaho* **spec. nov.**, are described. *Striosia irrorata* (Rothschild, 1912) is compared with the treated species.

Rangkuman: Posisi generik empat spesies yang secara tradisional dimasukkan dalam atau *Palaeosia* Hampson, 1900 atau *Calamia* Butler, 1877 direvisi. Revisi ini menghasilkan bahwa *Palaeosia* dan *Calamidia* merupakan genus yang endemik di Australia dan bahwa spesies-spesies di New Guinea termasuk dalam tiga genus lain, termasuk dua genus yang baru: *Oeonosia* Hampson, 1914, *Semicalamidia* **gen. nov.** dan *Neosyntaxis* **gen. nov.** *Calamidia castanea* Rothschild, 1912 **syn. nov.** dinyatakan sinonim dengan *Ilema owgarra* Bethune-Baker, 1908, *Calamidia reticulata* Rothschild, 1912 **syn. nov.** dinyatakan sinonim dengan *Palaeosia longistriga* Bethune-Baker, 1908, *Calamidia warringtonella goliathina* Rothschild, 1912 **syn. nov.** dinyatakan sinonim dengan *Ilema warringtonella* Bethune-Baker, 1908 *s.str.* dan dua spesies baru,*Oeonosia cruda* **spec. nov.** dan *O. abenaho* **spec. nov.**, dipertelakan. *Striosia irrorata* (Rothschild, 1912) dibandingkan dengan spesies yang tersebut di atas.

Keywords: Lithosiina, Oeonosia, Semicalamidia, Neosyntaxis, Striosia, new species, New Guinea, Papua, Australia.

Introduction

Species of the subtribe Lithosiina (Erebidae, Arctiinae, Lithosiini) have a uniform appearance with narrow elongate forewings and male valves which have a similar construction in many species. This makes it sometimes difficult to recognize distinct species groups or genera. Holloway (2001) and Dubatolov & Zolotuhin (2011) show that many (often monotypic) genera hide between large lumbed traditional genera. Characters in the male and female genitalia show distinct distinguishing characters combined with some other external characters. Nevertheless it is not always easy to judge by the external characters alone if species belong to a certain group of species. It would be wise to have DNA analysis in the genera and species groups in the future to confirm their position. In general all Lithosiina have a broad and usually more or less membranous cucullus and a stronger sclerotized elongated saccular process which is usually distally curved with a sharp apex.
Confusion in nomenclature is rather common in the Lithosiina shown by species previously placed in *Ilema* Hampson, 1900, *Eilema* Hübner, [1819] and other related genera. A small group of species from New Guinea was placed in *Palaeosia* Hampson, 1900 and *Calamidia* Butler, 1877. Both genera have the type species endemic in Australia: *Palaeosia bicosta* (Walker, 1854) and *Calamidia hirta* (Walker, 1854).

Used abbreviations:

KSP - Koleksi Serangga Papua (Private collection Henk van Mastrigt), Jayapura, Papua, Indonesia
NCB-ZMAN - Netherlands Centre for Biodiversity Naturalis, Leiden (NCB) (formerly Zoölogisch Museum, Amsterdam), The Netherlands
NCB-Naturalis - Netherlands Centre for Biodiversity Naturalis, Leiden (NCB), The Netherlands
NHM - Natural History Museum (formerly British Museum for Natural History), London, United Kingdom
PNG - Papua New Guinea
ZMHB - Museum für Naturkunde der Humboldt Universität, Berlin, Germany

Palaeosia Hampson, 1900

The type species *Palaeosia bicosta* (Walker, 1854) is endemic in Australia and was originally described in *Lithosia* Fabricius, 1798. Hampson (1900) placed the species in *Palaeosia* which was followed by all next authors. Although the general construction of the male genitalia and wing shape resemble that of *Lithosia* there are considerable differences of characters in *Palaeosia* which has more delicate valves, a very broad

disc-like cucullus and a deep well developed saccus. The aedeagus is rather short with a row of ten conical cornuti on the middle of the vesica, accompanied by a field of tiny chitinous drops. In *Lithosia* the vesica bears one long thorn on top of the vesica. The female genitalia of *Palaeosia bicosta* are compact with strongly sclerotized and broad antrum. The cervix bursae is slightly sclerotized, large and globular and broadly connected with the short and oval shaped bursa copulatrix. One large ribbon-shaped signum with four sharp folds and scobination. *Palaeosia* Hampson, 1900 is a monotypic genus.

Another species which was originally described in this genus is *Palaeosia longistriga* Bethune-Baker, 1908. This common species is endemic in New Guinea and very variable. This resulted in the description of three other species which turned out to be colour forms: *Palaeosia grandis* Bethune-Baker, 1908, *Calamidia reticulata* Rothschild, 1912 **syn. nov.** and *Palaeosia plagiata* Rothschild, 1912.
However, characters of antennae, wing pattern and genitalia differ from *Palaeosia bicosta* considerably. The male antenna of *longistriga* is strongly bipectinate while in *bicosta* it is filiform with scarce ciliation. Although wingpattern may not be a significant distinguishing character in higher taxa, both, *bicosta* and *longistriga*, show such a different pattern and wingshape that it is hard to believe that both belong to the same genus. More convincing are the differences in genitalia, especially that of the female. As mentioned above the female bursa of *bicosta* bears a distinct ribbon-shaped signum. The female bursa of *longistriga* is very long and slender with only a remnant of a signum. The cervix bursae is positioned directly behind the ostium and short antrum in *longistriga* while in *bicosta* it is more developed and at distance of the ostium. The genital characters match with those of *Oeonosia* Hampson, 1914 and comparing the wing pattern of *Palaeosia longistriga* Bethune-Baker, 1908 and *P. cruda* **spec. nov.** with the only two species in this genus, *Oeonosia aurifera* (Rothschild, 1912) and *O. pectinata* De Vos, 2007 (De Vos, 2007), does indeed ring a bell. Apart from the different ground colour, brown versus yellow, the black costal bar with steel blue shine and the strong bipectinate antennae support this. *Palaeosia longistriga* Bethune-Baker, 1908 is therefore transferred to *Oeonosia* Hampson, 1914 **comb. nov.** The new species *O. abenaho* **spec. nov.** has many of the same features as in the other species in this genus except for the black hindwings and the presence of an extended purple shimmer (see below).

Oeonosia cruda spec. nov. (Figs 9-10, 29-30, 51)

Holotype: ♂, Indonesia, Papua, Peg. Foja, Kab. Sarmi, 2º38' S – 138º24' E, 1650 m, 23.xi-7.xii.2005, leg. H.J.M. van Mastrigt, CI-RAP Mamberamo-Foya Exp. [NCB-ZMAN]
Paratypes: 6 ♂♂, 4 ♀♀, as holotype, [2 ♂♂, 2 ♀♀, NCB-ZMAN; 4 ♂♂, 2 ♀♀, KSP]; 2 ♂♂, Indonesia, Papua, Pegunungan Foja, Bog Camp, 2º34.5' S – 138º42.9' E, 1650 m, 6-27.xi.2008, leg. H.J.M. van Mastrigt, CI-RAP Mamberamo-Foya Exp. [KSP].

External characters: Fwl. ♂ 19-21 mm, ♀ 24 mm. Head ochreous brown to dark brown, in some specimens suffused with dark grey scales. Labial palpae short, dark brown. Male antennae brown and strongly bipectinate, female antennae dark grey and serrate with cilia. Thorax dark brown without pattern. Abdomen pale buff, in male distally with ochreous tuft. Forewings elongated but rather broad compared to other Lithosiina species. Male (fig. 9) with ground colour of forewing brown with some diffuse darker areas. Costa from base to half wing length black with a slight steel blue shine. Base below cubital vein with a pale buff patch. From disc towards dorsum a dark diffuse bar slightly oblique towards base. In female the costa more arched with basal one-third to more than half wing length black with slight steel blue shine. Brown forewings in female (fig. 10) sprinkled with black scales, in the disc a diffuse black stigma spot. Base of forewing fringes black, top of fringes buff. Hindwing in male and female pale buff gradually suffused to ochreous yellow distally. In comparison, the hindwings in *Oeonosia longistriga* are pale yellow without such suffusion. Unlike the great variability of *O. longistriga*, the pattern and colour of *O. cruda* is hardly variable as far as seen in the available specimens.

Male genitalia (figs 29-30)**:** [prep. RV1266] Uncus long and slender, finger shaped, curved ventrally, with sharp apex (in *longistriga* even more slender and irregularly curved with sharper apex). Tegumen long and stretched. Saccus well developed, U-shaped with dark sclerotized rim. Valve with cucullus broad and apically rounded and slightly sclerotized (in *longistriga* even broader, less sclerotized and with half circular apex). Harpe long and slender, finger shaped and slightly curved caudally (in *longistriga* harpe thick and nodded). Saccular process rather narrow with a sharp rim crossing over the blunt apex (in *longistriga* saccular process rather broad with a blunt spoon-shaped apex).
Aedeagus (fig. 30) very short and thick. Vesica at base with a collar of tiny chitinous drops, distally with nine strongly sclerotized conical cornuti (in *longistriga* aedeagus longer, collar of tiny chitinous drops followed by a corona of thorn-like cornuti and distally with four larger cornuti with split apex).

Female genitalia (fig. 51)**:** [prep. RV1404] Unfortunately the only two female specimens in the NCB-ZMAN collection have been moulded inside (probably caused by the rainy Foja Expedition) which destroyed the major part of the ductus bursae and bursa copulatrix. The genital plate (lamella vaginalis) with antrum and cervix bursae are the only distinguishing parts that remain (together with a spermatophore which more or less indicates how the ductus bursae must have run). Hopefully a well conserved female from the KSP collection could be dissected and described later. Nevertheless, still visible is the larger and more robust cervix bursae with longitudinal grooves in *O. cruda* compared to the narrow and delicate

laterally grooved cervix bursae in *O. longistriga*. A signum could not been detected but in *O. longistriga* a small remnant of a signum is present on the bursa copulatrix which could also be the case in *O. cruda*.

Distribution: Only thirteen specimens are known of this species and all originate from the Foja Mountains, Papua, Indonesia. They have all been found at an altitude of 1650 meters.

Etymology: The name *cruda* refers to the coarse appearance of the species, its larger size, more uniform and dull colouration, compared to the more delicate sister species *O. longistriga*.

Oeonosia abenaho spec. nov. (Figs 11, 32-33)

Holotype: ♂, Indonesia, Papua, Jayawijaya Mts., Kec. Abenaho, Pass Valley, 1950 m, 3º51'S - 139º05'E, 11-17.ii.2005, at light, leg. R. de Vos, UNCEN-ZMAN expedition [NCB-ZMAN].

External characters: Fwl. ♂ 13.5 mm. Head dark brown with purple shimmer, frons ochreous brown. Labial palpae short, dark brown. Male antennae dark brown, bipectinate. Thorax dorsally dark brown with the edges of patagia and tegulae black, with purple and steel-blue shimmer, ventrally thorax white. Legs bone-white with distal parts of all segments black with a purple shimmer. Abdomen dorsally black with blue shimmer, ventrally dark grey. Forewings elongated and narrow. Male (fig. 11) with ground colour of forewing dark brown with a fine pale brown reticular pattern and with a diffuse dark discal patch. A purple shimmer covers the entire forewing. Underside of forewing uniformely dark brown. Hindwing with upper- and underside in male entirely black, fringes pale grey, hairy scales at dorsum with blue shimmer. Female unknown.

Male genitalia (figs 32-33)**:** [prep. RV1406] Uncus finger shaped, rather short. Tegumen broad and stretched. Saccus well developed and deep, like in *cruda* and *longistriga* U-shaped. A broad cucullus which is more longitudinal than in its relatives *cruda* and *longistriga*, and with rounded apex. Harpe broad, almost triangular, much broader than in *cruda* and *longistriga*. Sacculus broad and strongly sclerotized, saccular process with sharp double apex: a larger ventral sharp apex as seen in fig. 32 and a tiny dorsal tooth just seen through the apex of the larger one in the figure.

Aedeagus (fig. 33) short and thick. Vesica at base with a collar of tiny chitinous drops, followed by a corona of cornutal thorns (similar as in *longistriga* but thicker), distally with two strongly sclerotized almost rectangular cornuti with double apex (in *longistriga* with four cornuti with split apex).

Note: It is clear that both species, *longistriga* and *abenaho* are most related, followed by *aurifera* and *pectinata*. *Oeonosia cruda* follows at a larger distance judged by the missing of the cornutal corona in the aedeagus which is seen in all other four species, and the more modified cornuti on the vesica.

Distribution: The holotype was found in Pass Valley in de Jayawijaya Mountains at an altitude of 1950 meters.

Etymology: The species is named after its origin in District (Kecamatan) Abenaho.

Calamidia Butler, 1877

The type species *Calamidia hirta* (Walker, 1854) is endemic in Australia and was originally described in *Lithosia* Fabricius, 1798. Meyrick (1886) placed its junior synonym *salpinctis* in *Calamidia* Butler, 1877. Striking are the long labial palpae with a club-shaped apex. The male genitalia have the uncus finger-shaped, the tegumen wide with a broad base at uncus, saccus well developed. Cucullus in valvae broad oval-shaped. Saccular extension with broad base and rather blunt apex (in *hirta* with two claw-shaped thorns). Harpe in *hirta* as a sharp ridge running from costal base to base of saccular extension. Aedeagus short with bilobed globular vesica. Vesica with two string-shaped cornuti near base and distally with (in *hirta* eight) large conical cornuti. The female genitalia with a large cervix bursae, bursa copulatrix without signum. *Calamidia* Butler, 1877 is a monotypic genus.

Semicalamidia gen. nov.

Type species: *Ilema owgarra* Bethune-Baker, 1908

Three species from New Guinea were previously considered to belong to *Calamidia* but after study of the genitalia this must be corrected. *Calamidia castanea* Rothschild, 1912 **syn. nov.** turned out to be conspecific with *Calamidia owgarra* (Bethune-Baker, 1908), originally described in *Ilema* Hampson, 1900. *Calamidia owgarra* has a different wingshape and labial palpae than *C. hirta*. Compared to *C. hirta* the forewings in *C. owgarra* are more narrow with a less oblique termen. The labial palpae long but much shorter than in *C. hirta* and apex not club-shaped. The male genitalia are considerably different, the uncus being needle-shaped, stretched tegumen with narrow base at uncus, narrow and different shaped cucullus with a projection near the costal base, the saccular extension being more delicate and of different structure than in *hirta*. The harpe in *owgarra* has a different position and shape than in *hirta*,

running from the costal projection to the end of cucullus. At first sight the aedeagus seems similar in construction in both species, especially the presence of the two string-shaped cornuti in both taxa are peculiar, but this may be synapomorphic. The female genitalia of *owgarra* are again very different from *hirta*. In *owgarra* a long and broad sclerotized antrum is present (not in *hirta*), the cervix bursae is relatively small and unsclerotized (in *hirta* large and sclerotized and of distinctly different shape) and the oval-shaped bursa copulatrix has a ribbon-shaped signum with two sharp folds.
All these characters combined indicate that *Calamidia owgarra* should be transferred to another genus. There is no other genus available so I propose the name *Semicalamidia* **gen. nov.**, indicating the relation with *Calamidia* Butler, 1877. The genus is monotypic.

***Neosyntaxis* gen. nov.**
Type species: *Ilema warringtonella* Bethune-Baker, 1908

The third species from New Guinea that was previously placed in *Calamidia* is *Ilema warringtonella* Bethune-Baker, 1908. Rothschild (1912) described a subspecies *goliathina* **syn. nov.** by wingpattern differences only. The species varies from typical to *goliathina* sympatrically at several localities and should be considered to be a colour form. The appearance, wing pattern, labial palpae and genitalia immediately indicate that this species is not at its place in *Calamidia*. It is more closely related to *Monosyntaxis* Swinhoe, 1901 but shows some significant differences. It has with *Monosyntaxis* in common the silvery-white wingpattern and orange-yellow head with short black labial palpae. Furthermore the structure of the male valva is similar to that of *Monosyntaxis*, with a narrow cucullus and almost equally broad sacculus and with an extension that forms together with the cucullus a split apex of the valva. Saccus hardly developed. Aedeagus with most striking differences in the cornuta on the vesica: two conical basal cornuti, followed by a field of tiny spines and distally with two large cornutal thorns pointing in the opposite direction (in *Monosyntaxis* the aedeagus is very short, beaker-shaped with characteristic dentate cornuti, see De Vos, 2009). The female genitalia are short with a broad sclerotized antrum and a globular bursa copulatrix of which the basal part is half sclerotized, in the middle of the bursa two sclerotized irregular patches with tiny spines which form the signa. These structures are unique and not seen in other known Lithosiina genera. Therefore *Calamidia warringtonella* (Bethune-Baker, 1908) and subsequently its junior synonym *goliathina* (Rothschild, 1912) are transferred to a new genus for which I propose the name *Neosyntaxis* **gen. nov.**, indicating the relation with *Monosyntaxis*. *Neosyntaxis* **gen. nov.** is monotypic.

***Striosia* Hampson, 1914**

Another monotypic genus and endemic in New Guinea which should be discussed in this perspective is *Striosia* Hampson, 1914 with its type species originally described as *Calamidia irrorata* Rothschild, 1912. Hampson (1914) transferred the species to his *Striosia*. From habitus *Striosia irrorata* seems closely related to *Semicalamidia owgarra* (Bethune-Baker, 1908) but some features show that it is quite different. The hindwings of male and female show a conspicuous dark streak along vein CuA1. The male carries a peculiar large scent bristle dorsally on the third abdominal segment, a character which is not seen in other Lithosiina. The construction of the male genitalia is similar to other Lithosiina, though the vesica in the aedeagus is without cornuti. The construction of female genitalia is quite simple without any stronger sclerotization and no signum present. Judged from the above mentioned characters we can conclude that Hampson was correct to consider *Calamidia irrorata* to belong to another genus.

List of the treated species in subtribe Lithosiina

Palaeosia Hampson, 1900
- bicosta (Walker, 1854) [Australia]
  - *fraterna* (Butler, 1877)

Oeonosia Hampson, 1914
- longistriga (Bethune-Baker, 1908) **comb. nov.** [New Guinea]
  - *grandis* (Bethune-Baker, 1908)
  - *reticulata* (Rothschild, 1912) **syn. nov.**
  - *plagiata* (Rothschild, 1912)
- cruda **spec. nov.** [Papua]
- abenaho **spec. nov.** [Papua]
- aurifera (Rothschild, 1912) [Papua]
- pectinata De Vos, 2007 [Papua]

Calamidia Butler, 1877
- hirta (Walker, 1854) [Australia]
  - *salpinctis* Meyrick, 1886

Semicalamidia **gen. nov.**
- owgarra (Bethune-Baker, 1908) **comb. nov.** [New Guinea]
  - *castanea* (Rothschild, 1912) **syn. nov.**

Neosyntaxis **gen. nov.**

warringtonella (Bethune-Baker, 1908) **comb. nov.** [New Guinea]
goliathina (Rothschild, 1912) **syn. nov.**

Striosia Hampson, 1914
irrorata (Rothschild, 1912) [New Guinea]

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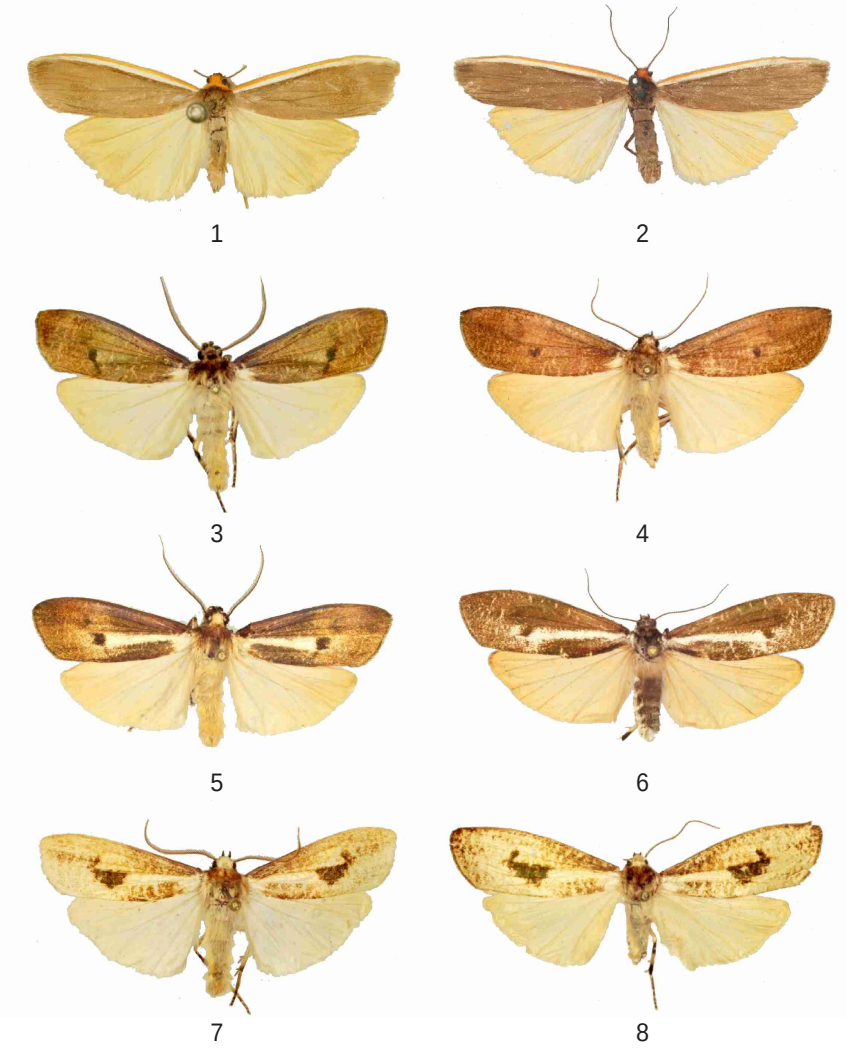
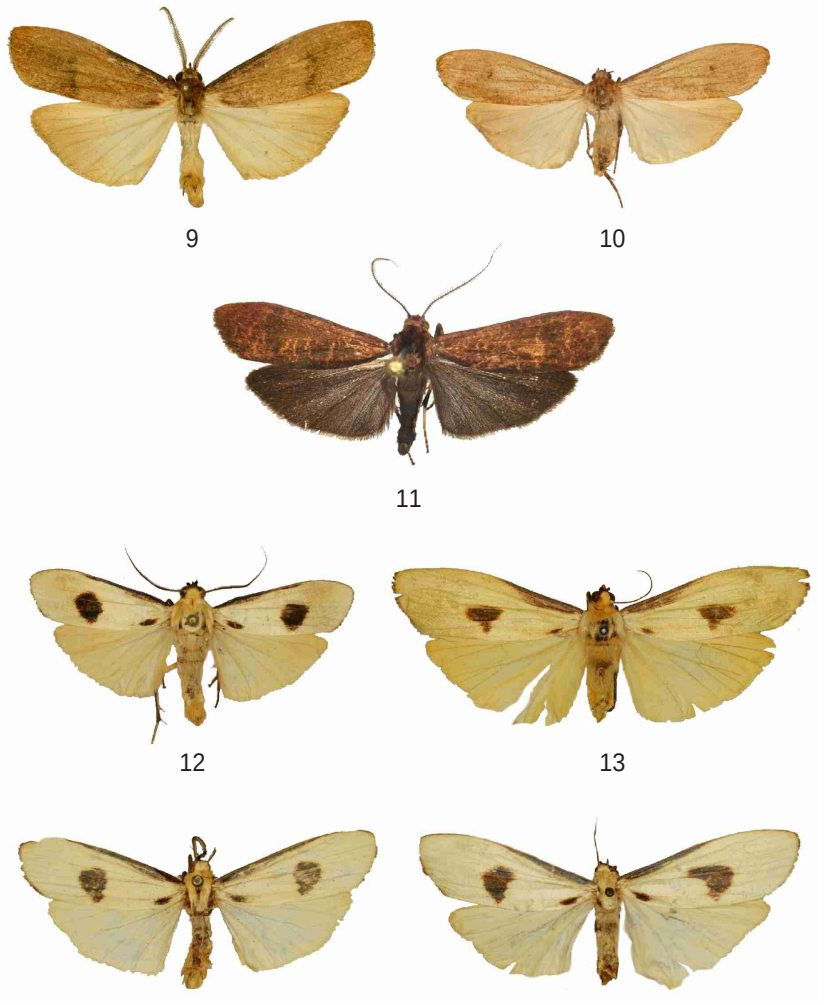
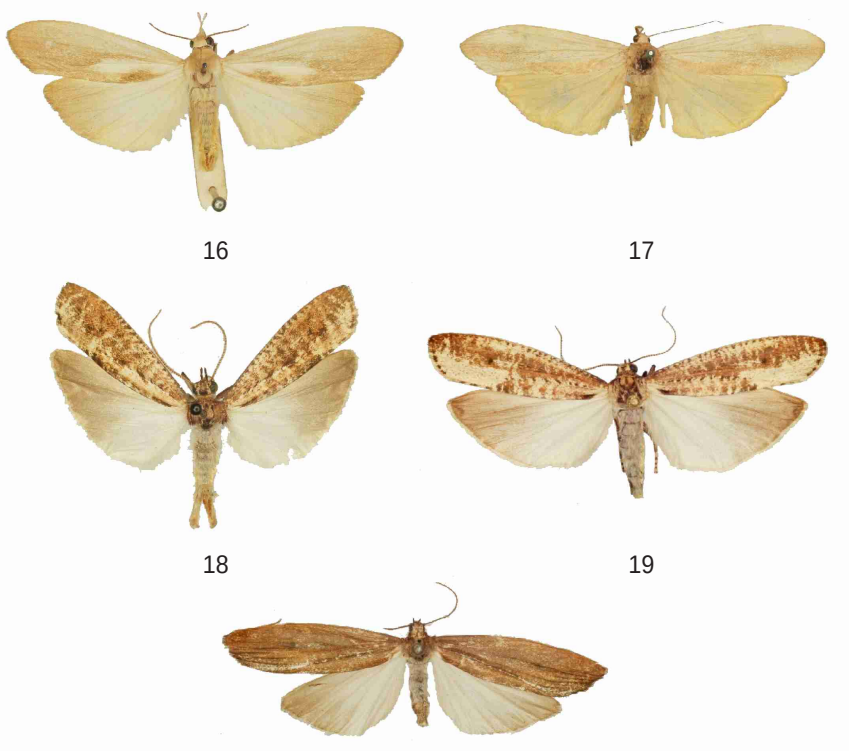


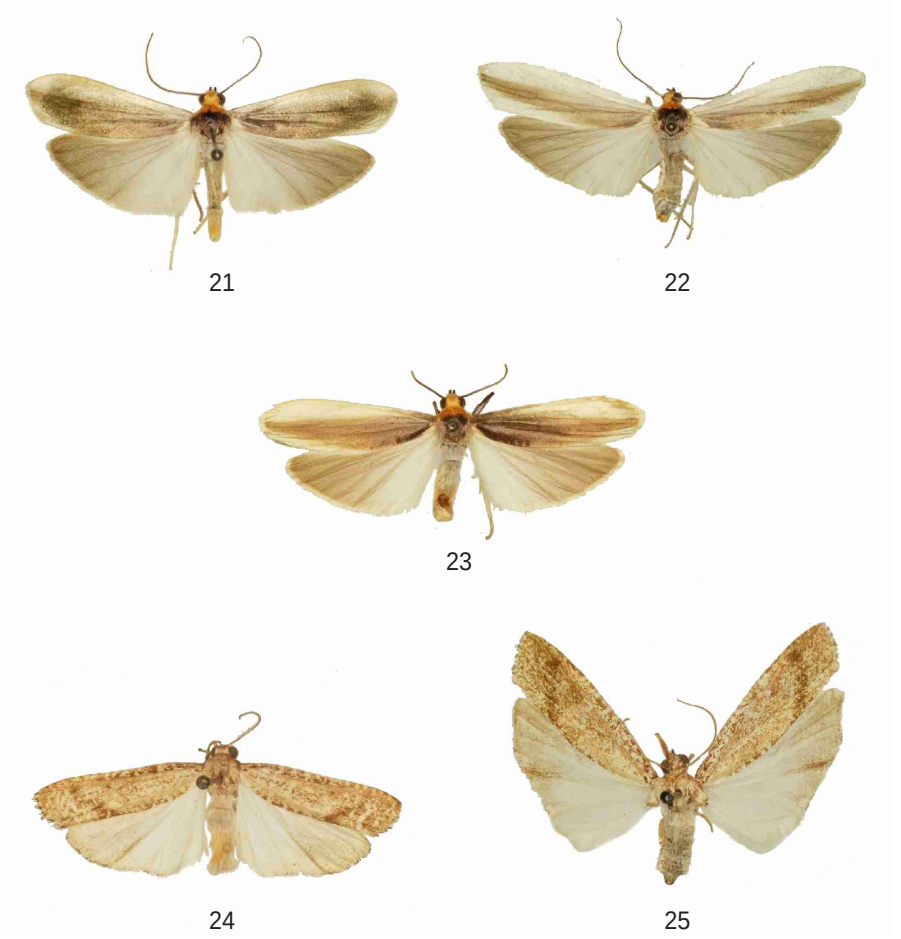
Figs 1-2. *Palaeosia bicosta*: 1. ♂, Australia (ZMHB); 2. ♀, holotype *fraterna* Butler, 1877, Hobart, Tasmania (NHM).
Figs 3-8. *Oeonosia longistriga*: 3. ♂, Pass Valley, Papua (NCB-ZMAN); 4. ♀, Pass Valley, Papua (NCB-ZMAN); 5. ♂, f. *grandis*, Pass Valley, Papua (NCB- ZMAN); 6. ♀, f. *reticulata*, Pass Valley, Papua (NCB-ZMAN); 7. ♂, f. *plagiata*, Pass Valley, Papua (NCB-ZMAN); 8. ♀, f. *plagiata*, Abmisibil, Papua (NCB-ZMAN).



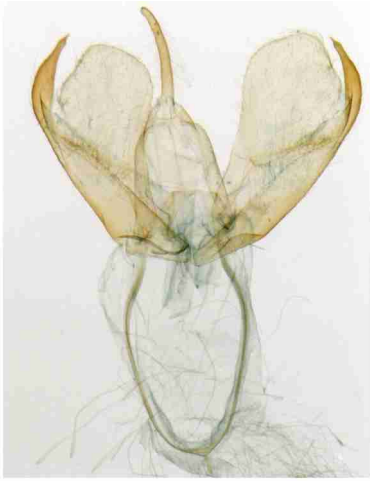
Figs 9-10. *Oeonosia cruda* **spec. nov.**: 9. ♂, paratype, Foja Mountains, Papua (KSP); 10. ♀, paratype, Foja Mountains, Papua (NCB-ZMAN). **Fig. 11**. *Oeonosia abenaho* **spec. nov.** , ♂, holotype, Pass Valley, Jayawijaya Mountains, Papua (NCB-ZMAN). **Figs 12-13.** *Oeonosia aurifera*: 12. ♂, Mabilabol, Star Mountains, Papua (NCB-ZMAN); 13. ♀, Weyland Mountains, Papua (NHM). **Figs 14-15.** *Oeonosia pectinata*: 14. ♂, holotype, Waris, Papua (NCB-ZMAN), 15. ♀, paratype, Keerom, Papua (NCB-ZMAN).



Figs 16-17. *Calamidia hirta*: 16. ♂, Brisbane, Queensland, Australia (NHM), 17. ♀, Australia (NHM). **Figs 18-20.** *Semicalamidia owgarra*: 18. ♂, syntype, Owgarra, PNG (NHM); 19. ♀, Pass Valley, Papua (NCB-ZMAN); 20. ♀, holotype *castanea*, Mount Goliath (NHM).



Figs 21-23: *Neosyntaxis warringtonella*. 21. ♂, Walmak, Papua (NCB-ZMAN), 22. ♀, Pass Valley, Papua (NCB-ZMAN), 23. ♂, holotype *goliathina*, Mount Goliath (NHM).
Figs 24-25: *Striosia irrorata*: 24. ♂, syntype, Mount Goliath, Papua (NHM); 25. ♀, Angabunga River, PNG (NHM).



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Figs 26-27. *Palaeosia bicosta*, male genital (prep. RV1275, CNB-ZMAN): 26. habitus; 27. aedeagus.
Figs 28-29. *Oeonosia longistriga*, male genita (prep. RV1267, NCB-ZMAN): 28. habitus; 29. aedeagus.

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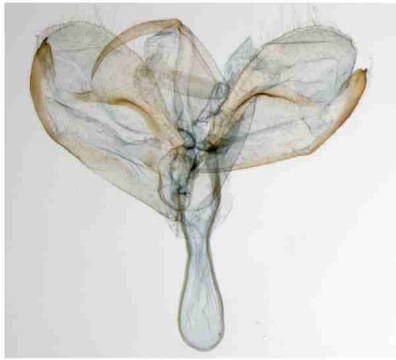
Figs 30-31. *Oeonosia cruda* **spec. nov.**, male genital (prep. RV1266, NCB-ZMAN): 30. habitus; 31. aedeagus.
Figs 32-33. *Oeonosia abenaho* **spec. nov.**, male genital (prep. RV1406, NCB-ZMAN): 32. habitus; 33. aedeagus.



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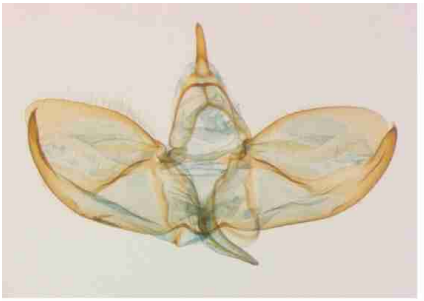
Figs 34-35. *Oeonosia aurifera*, male genital (prep. RV1234, NCB-ZMAN): 34. habitus; 35. aedeagus.
Figs 36-37. *Oeonosia pectinata*, male genital (prep. RV1235, NCB-ZMAN): 36. habitus; 37. aedeagus.



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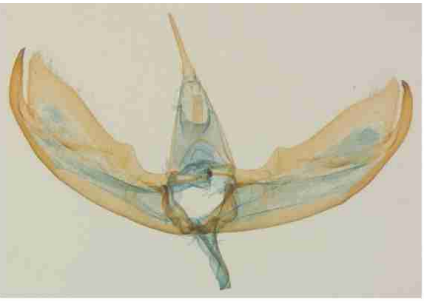

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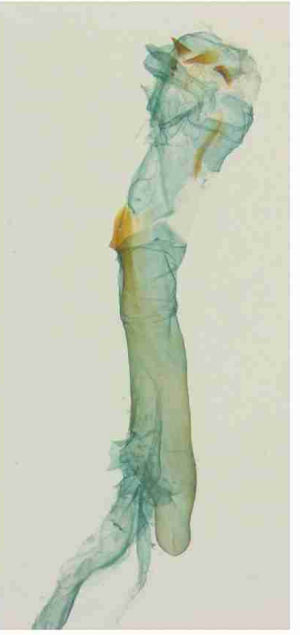

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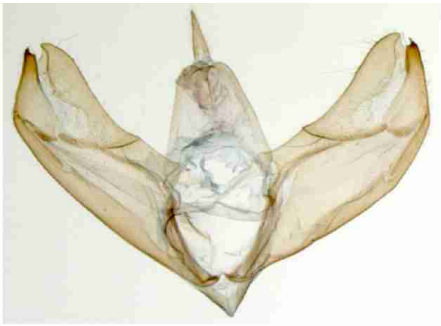
Figs 38-39. *Calamidia hirta*, male genital (prep. BM6308, BMNH):
38. habitus; 39. aedeagus.
Figs 40-41. *Semicalamidia owgarra*, male genital (prep. RV1406, NCB-ZMAN):
40. habitus; 41. aedeagus.



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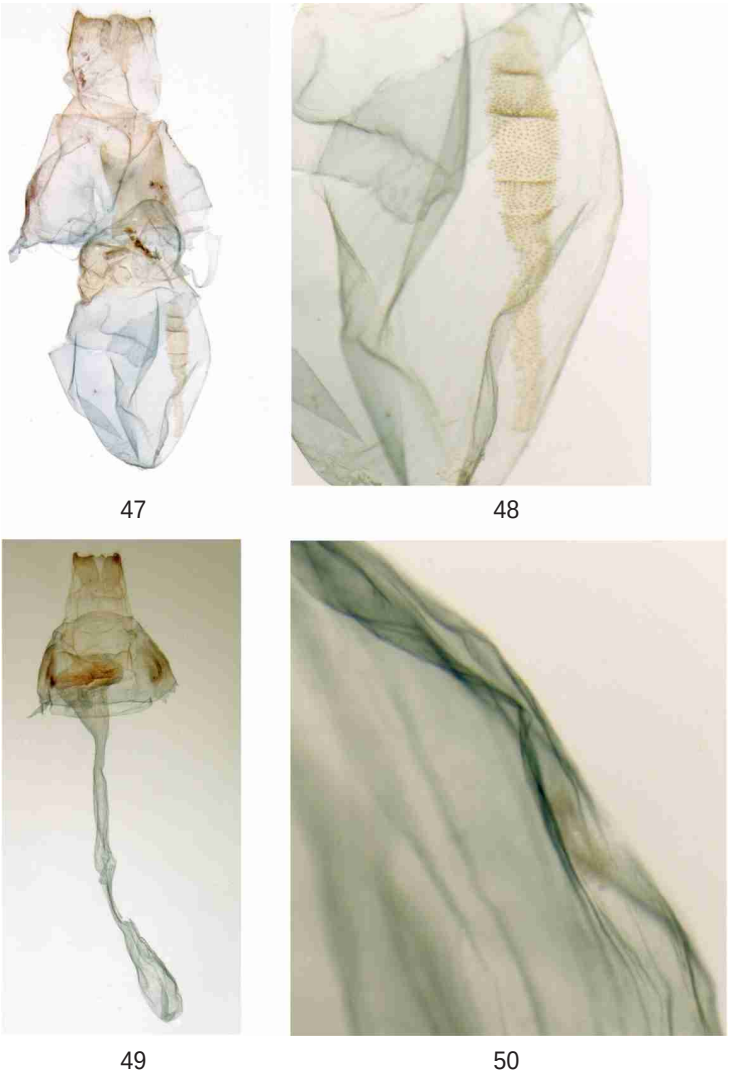
Figs 42-43. *Neosyntaxis warringtonella*, male genital (prep. RV1265, NCB-ZMAN): 42. habitus; 43. aedeagus.
Figs 44-46. *Striosia irrorata* (prep. BM6306, BMNH): 44. abdomen with the dorsal scent bristle; 45-46. male genital: 45. habitus; 46. aedeagus.



Figs 47-48. *Palaeosia bicosta*, female genital (prep. RV1274, NCB-ZMAN): 47. habitus 48. signum.
Figs 49-50. *Oeonosia longistriga*, female genital (prep. RV1276, NCB-ZMAN): 49. habitus; 50. signum.

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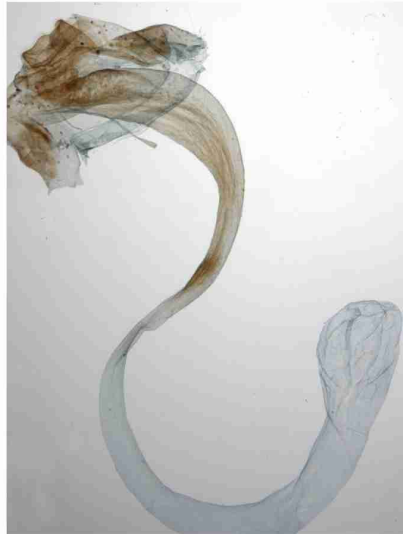

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Fig. 51. *Oeonosia cruda*, female genital (prep. RV1404, NCB-ZMAN): habitus, bursa destroyed by mould.
Fig. 52. *Oeonosia aurifera*, female genital (prep. BM6007, BMNH): habitus.
Fig. 53. *Oeonosia pectinata*, female genital (prep. RV1236, NCB-ZMAN): habitus.

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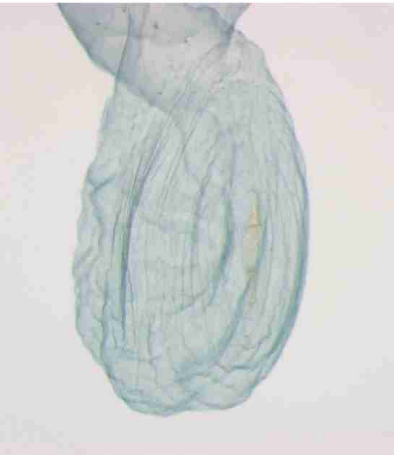

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Fig. 54. *Calamidia hirta*, female genital (prep. BM6309, BMNH): habitus.
Figs 55-56. *Semicalamidia owgarra*, female genital (prep. RV1407, NCB-ZMAN): 55. Habitus; 56. bursa with signum.

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Figs 57-58. *Neosyntaxis warringtonella*, female genital (prep. RV1405, NCB-ZMAN): 57. Habitus; 58. bursa with signa.
Fig. 59. *Striosia irrorata*, female genital (prep. BM6307, BMNH): habitus.