

***Monochela grisescens*, a new species in a new genus (Erebidae, Arctiinae, Lithosiini) from Papua, Indonesia**

Monica Guimaraes Cruz¹ & Rob de Vos²

Naturalis Biodiversity Center, Darwinweg 2, 2333 CR Leiden, The Netherlands
email: ¹monica.guimaraescruz@naturalis.nl, ²rob.devos@naturalis.nl

Suara Serangga Papua (SUGAPA digital) 14(1): 20-27.
urn:lsid:zoobank.org:pub: E05A74FA-86A3-4D39-8A12-322DDB4169BE

Abstract: A new species from Papua, Indonesia, *Monochela grisescens* gen. nov., spec. nov., is described, which belongs to a new genus. The adult and genitalia are depicted. A comparison is made with presumed related genera *Lambula*, *Scoliacma* and *Blaviodes*.

Rangkuman: Spesies baru dari Papua, Indonesia, *Monochela grisescens* gen. nov., spec. nov., anggota dari genus yang baru, dideskripsi di sini. Gambar bentuk dewasa dan genitalia disajikan dan dibandingkan dengan genera yang diduga terkait, yaitu *Lambula*, *Scoliacma* dan *Blaviodes*.

Keywords: Lepidoptera, *Lambula*, *Scoliacma*, *Blaviodes*, Arfak Mts, New Guinea.

Introduction

In 1993, during the first expedition to New Guinea of the second author, two specimens of an undescribed lithosiine species were found in the Arfak Mountains (Papua Barat, Indonesia). Because it had a rather inconspicuous colour with hardly any pattern it was left between other collected material for later research. That is why it took almost thirty years before the authors “rediscovered” it and described its taxonomic status. Because of the rounded wings and especially the strong asymmetry of the valvae this species could not be placed in any already known genus and led to the conclusion (even though no female is available yet) that it does not only concerns a new species but it also represents an undescribed genus.

Abbreviations

Fwl - Forewing length (measured from base to apex)

RMNH - Acronym of Naturalis Biodiversity Center, Leiden, The Netherlands (former Rijksmuseum voor Natuurlijke Historie)

RMNH.INS - Prefix for the unique registration number of slides and specimens in the insect collection of RMNH

Material and methods

The four specimens (holotypes and paratypes) were photographed with a Nikon D600 with AF Micro-Nikkor 60mm f/2.8D lens, mounted on a Kaiser RSX Copy Stand with RTX camera arm and using a 32 watt circular lamp mounted on a light box (Fritz Weber).

The genitalia of one male (holotype) were dissected, mounted and depicted. Dissected

genitalia were put in cold KOH 10% for one night. After washing and cleaning with 30% alcohol to remove fat, scales and dirt, the genitalia were stained in a solution of chlorazol black in 30% alcohol and fixed in 95% alcohol. The genitalia were prepared for preservation in Euparal Essence (to prevent air bubbles) and after a few minutes mounted on a glass slide in a few drops of Euparal medium following the standard used in the Natural History Museum in London (Robinson, 1976): abdomen on the left side, genital armature top right, aedeagus bottom right. To prevent the smaller parts, like the aedeagus, from floating the Euparal drops were left to dry at least 24 hours without glass cover in a closed Petri dish (to protect against dust). The next day a proper size glass cover was put on the parts in the sticky Euparal, adding a few fresh drops of Euparal. The complete slide was left to dry for weeks in the Petri dish. Labels were only added after drying completely, so therefore it was necessary to write a slide number on the glass slide to avoid mixing up with other drying slides. The preparation slide was made by the first author and was numbered with a unique standard number of labels provided by the museum, with the prefix RMNH.INS.

Digital photographs were made with a motorized Zeiss V20 binocular microscope and a digital Axio MRc5 camera controlled by Axiomanager M2 software.

Forewing lengths (Fwl) were measured with a digital calliper from forewing base to apex. Morphological terminology of the external structures (excluding the genitalia) mainly follows Scoble (1992) and Holloway et al. (2001).

The terminology of the genitalia mainly follows Tuxen (1970) and Kôda (1987).

Systematical part

***Monochela* gen. nov.**

urn:lsid:zoobank.org:act: BBE5DA30-8063-4593-AE3F-267E266CC16C

Type species: *Monochela grisescens* spec. nov.

Diagnosis: The habitus of *Monochela* is, with its broad hindwings with arched costa, similar to that of *Lambula* Walker, 1866, *Scoliacma* Meyrick, 1886 and *Blaviodes* Bethune-Baker, 1910. There are, however, some distinct features. In *Lambula* the male hindwings all have a rather pointed apex, whereas in *Monochela* the apex is distinctly rounded. In *Blaviodes* all males have a modified extended dorsum of the forewing which lacks in *Monochela*. The genitalia of *Monochela* are clearly different to that of *Lambula*, *Scoliacma* and *Blaviodes* species, moreover, they present a distinct asymmetry not seen in these genera, however common in i.e. *Darantasia* Walker, 1859. But these different characters are not found in this combination in any other presently known genus in Lithosiini, therefore we consider it justified to designate a new genus for this new species.

Description: Antennae filiform sparsely covered with short setae. Labial palpi short and porrect with the last segment projecting beyond the head.

Male forewings oblong, costa arched, termen and apex round. Dorsum straight.

Male hindwings broad and round with an arched costa and round termen. Tornus somewhat angular. Fringes rather long.

Male genitalia with long slender uncus on a bell-shaped base. Valva asymmetrical, left valve more developed than the right one. Valve broad with a conspicuous strong saccular apical process, in the left valve more developed than in the right valve. Aedeagus simple, a long

and slender tube, vesica in the type species with one bunch of needle-shaped cornuti and a scobinated field.

Distribution: Arfak Mountains, Papua Barat, Indonesia.

Etymology: The apical process of the right valve is much larger than the left one, resembling a crab's pincer, therefore the choice of *Monochela*: *mónos* (Greek for single) and *chele* (Latin for a pincer-like claw of a crustacean) for the genus name.

***Monochela grisescens* spec. nov. (figs 1-5)**

urn:lsid:zoobank.org:act: D543369C-F4CD-44B8-8FD4-0D5FE2C020DF

Holotype: ♂, RMNH.INS.1282871, Indonesia, Irian Jaya, Birdshead Peninsula, Warkapi (nr Breie), primary lowland forest, 500 m, at light, 12.xi.1993, leg. A.J. de Boer, A.L.M. Rutten & R. de Vos.

Paratype: 1 ♂, RMNH.INS.1282872, as holotype.

Diagnosis: Head, thorax, labial palpi and antennae white. Palpi short and porrect, antennae filiform. Black dot on each tegula. Male forewings with rounded apex, grey to whitish except for darker grey costal third and brown anal veins. Costa of the hindwings arched, round apex and angular tornus.

Valvae markedly asymmetrical, with left pincer-like apical process of the sacculus twice as long as the right one. Uncus long and narrow bearing long hairs, and with a broad bell-shaped base. Abdomen at 1st segment laterally with a long brush of scent hairs. There is no comparable lithosiine species with this combination of colour, pattern and construction of genitalia.

Female unknown.

Description: (figs 1-3) Fwl: ♂ 7.4 mm. Head white. Antennae white, gradually darkening distally. Labial palpi white, short and porrect with the last segment projecting beyond the head. Antennae filiform. Thorax white with a black dot on each tegula. First three abdominal segments dark brown, distal other segments black, legs buff. Male forewings' global shape oblong with a moderately arched costa and rounded apex. Male forewings dorsally light grey to white, with anal veins accentuated brown. Distal portion of the costa with short brown fringes. Costal third of the forewing darker grey. Male hindwings with an arched costa, a noticeable round apex and markedly angular tornus. Dorsally grey-brown with longer fringes at the termen of the same colour, fringes absent at the dorsum.

Male forewings ventrally for two thirds dark brown in sharp contrast with the white basal and postbasal portion of the subcostal vein. All other veins lightly coloured, clearly delineated along their full extension against the dark background colour of the wing. Basal area of the forewing paler brown to whitish and inner margin of the dorsum white up to the tornus.

Male hindwings ventrally as upperside grey-brown.

Male genitalia: (figs 4-5) Male genitalia with long and narrow uncus, dorsally with long hairs, and with a broad bell-shaped base. Tegumen moderately developed, vinculum with

two saccular lobes extending beyond the base of valvae. Valvae asymmetrical, sacculus with a strong and broad apical process with a sharp apex, at the left valve being twice as long as the right one. Cucullus of both valvae with a short apical process, more or less fused at the base of the saccular process. Sacculus rim in the middle moderately concave. Cucullus with a broad and well developed ampulla bearing long setae. Clasper absent.

Tube of aedeagus long and narrow, slightly curved (not allowing for safe eversion of vesica). Vesica with a scobinated field or band and with a dense bunch of needle-shaped cornuti.

Distribution: The only two so far known (type) specimens have been found near Warkapi (fig. 7), at the eastern slopes of the northern Arfak Mountains, Papua Barat, Indonesia, at an altitude of 500 meters.

Etymology: The name *grisescens*, from New Latin, derived from French: *gris* (grey), refers to the overall greyish appearance of the wings.

Acknowledgements

We thank Naturalis Biodiversity Center, Leiden, for permission to use the equipment needed to photograph the specimens and genitalia slides. The first author is grateful to The Uyttenboogaart-Eliasen Foundation for the financial support to visit Indonesian New Guinea, which in 1993 led to the discovery of the new species.

References

- Holloway, J.D., G. Kibby & D. Peggie, 2001. The Families of Malesian Moths and Butterflies. Fauna Malesiana Handbook 3. – Brill, Leiden, The Netherlands, 455 pp.
- Kôda, N., 1987. A generic classification of the subfamily Arctiinae of the Palaearctic and Oriental Regions based on the male and female genitalia (Lepidoptera, Arctiidae), Part I. – Tyô to Ga Osaka 38: 153–237.
- Robinson, G.S., 1976. The preparation of slides of Lepidoptera genitalia with special reference to the Microlepidoptera. – Entomologist's Gazette 27: 127–132.
- Scoble, M.J., 1992. The Lepidoptera. Form, Function and Diversity. – Oxford University Press, Oxford, 404 pp.
- Tuxen, S.L., 1970. Taxonomist's glossary of genitalia in insects. – Munksgaard, Copenhagen, Denmark, 359 pp.



Fig. 1. *Monochela grisescens* spec. nov., holotype ♂, Warkapi, Papua Barat, Indonesia
(RMNH.INS.1282871)



Fig. 2. *Monochela grisescens* spec. nov., paratype ♂, Warkapi, Papua Barat, Indonesia
(RMNH.INS.1282872)



Fig. 3. *Monochela grisescens* spec. nov., paratype ♂ (verso), Warkapi, Papua Barat, Indonesia (RMNH.INS.1282872)



Fig. 4. *Monochela grisescens* spec. nov., ♂ genital armature (RMNH.INS.1282871)



Fig. 5. *Monochela grisescens* spec. nov., ♂ aedeagus (RMNH.INS.1282871)

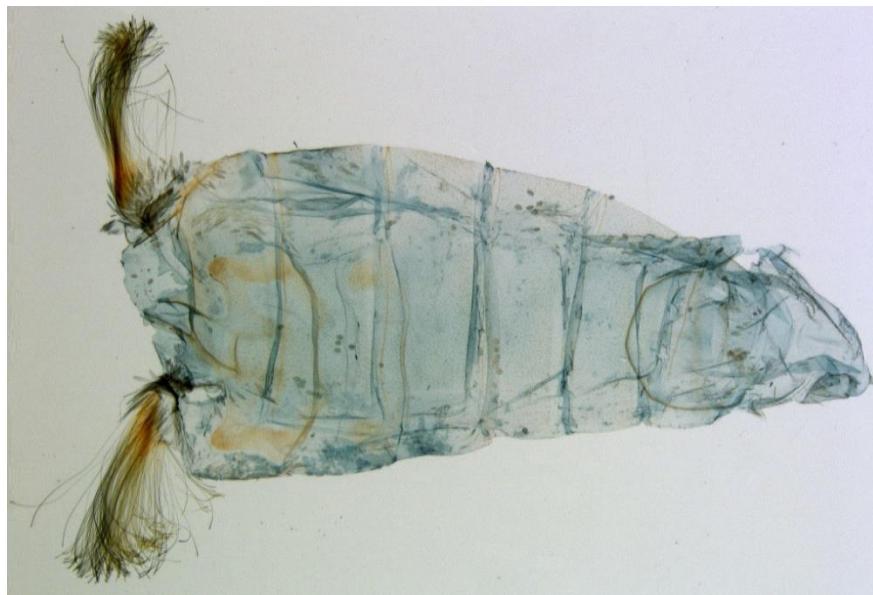


Fig. 6. *Monochela grisescens* spec. nov., ♂ abdomen (RMNH.INS.1282871)

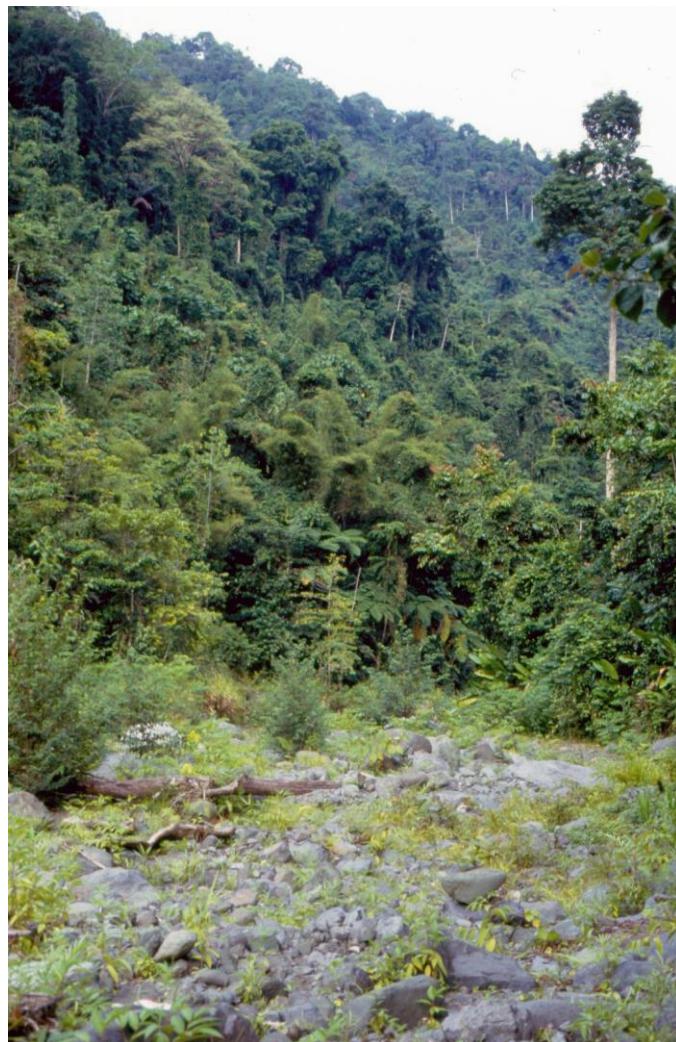


Fig. 7. The type location of *Monochela grisescens* spec. nov., Breie, near Warkapi, northeast slopes of Arfak Mountains at ca. 500 m., Papua Barat, Indonesia (photo: Rob de Vos, 1993)