Ecologica Montenegrina
ISSN 2336-9744 (online) | ISSN 2337-0173 (print)

Ecologica Montenegrina 52: 12-23 (2022)
This journal is available online at: www.biotaxa.org/em
https://dx.doi.org/10.37828/em.2022.52.2

Article

http://zoobank.org/urn:lsid:zoobank.org:pub:76F89A15-D378-4F5D-83D7-1423EED8AE33

Overview of the species of the genus *Picardia* Gibeaux, 1994 (Lepidoptera: Pterophoridae) in the world fauna, with description of new species

PETR YA. USTJUZHANIN[1,2,5], VASILY N. KOVTUNOVICH[3], ALEXANDER N. STRELTZOV[4]

[1]*Altai State University, Lenina 61, Barnaul, RU–656049, Russia.*
[2]*Biological Institute, Tomsk State University, Lenina Prospekt 36, Tomsk 634050, Russia. E-mail: petrust@mail.ru.*
[3]*Moscow, Russia, E-mail: vasko-69@mail.ru*
[4]*Herzen State Pedagogical University of Russia, 48, Moika Emb., Saint-Petersburg, 191186, Russia. E-mail: streltzov@mail.ru*
[5]*Corresponding author. E-mail: petrust@mail.ru*

Received 2 February 2022 | Accepted by *V. Pešić*: 1 March 2022 | Published online 2 March 2022.

Abstract
The article gives an overview of the genus *Picardia* Gibeaux, 1994 (Lepidoptera: Pterophoridae) in the world fauna. Three new species are described from Kenya, Cameroon and Zimbabwe: *Picardia bassi* Ustjuzhanin & Kovtunovich sp. nov., *Picardia bunga* Ustjuzhanin & Kovtunovich sp. nov. and *Picardia tropeki* Ustjuzhanin & Kovtunovich sp. nov. The species *Oidaematophorus negus* Gibeaux, 1994b is transferred to the genus *Picardia*. *Picardia ecstaticus* (Meyrick, 1932) is transferred to the genus *Crassuncus* Gibeaux, 1994. The new distributional data are presented.

Key words: biodiversity, Lepidoptera, Pterophoridae, *Picardia*, plume moths, Africa, new species, new date, species overview.

Introduction

The genus *Picardia* (Lepidoptera: Pterophoridae) was allocated for *Pterophorus imerinae* Bigot, 1964 (Gibeaux 1994a). In the same publication, *Picardia betsileo* Gibeaux, 1994 was described. The Catalog of plume moths of the world fauna (Gielis 2003) already included four species, two of which: *Pterophorus eparches* Meyrick, 1931 and *Oidaematophorus ruwenzoricus* Gielis, 1991 were recombined to the genus *Picardia.* LaterKovtunovich *et al*. (2014), described three more new species of this genus from Malawi: *Picardia leza* Kovtunovich & Ustjuzhanin, 2014, *Picardia raymondi* Kovtunovich & Ustjuzhanin, 2014 and *Picardia tumbuka* Kovtunovich & Ustjuzhanin, 2014. The species *Crassuncus ecstaticus* (Meyrick, 1932), in our opinion, was erroneously transferred to the genus *Picardia* (Gielis 2011), and we return it to the genus *Crassuncus*. The only species currently known from South America *Pterophorus delospilus* Meyrick, 1921 was recombined to the genus *Picardia* (Gielis 2012). At last, in this work we describe three new species of

the genus *Picardia* from Kenya, Cameroon and Zimbabwe. His species *Oidaematophorus negus* Gibeaux, 1994, described on a female from Ethiopia (Gibeaux, 1994b) is recombined to the genus *Picardia.* As a result, the genus *Picardia* currently includes 12 species.

Abbreviations

DNMNH: Ditsong National Museum of Natural History, RSA, Pretoria (former Transvaal Museum);
NHMUK: The Natural History Museum of United Kingdom, London, U.K;
NECJU: Nature Education Centre, Jagiellonian University, Kraków, Poland;
ZISP: Zoological Institute, St. Petersburg, Russia.

Taxonomic overview of the genus *Picardia* Gibeaux, 1994 in the world fauna

Genus *Picardia* Gibeaux, 1994.
Picardia Gibeaux, 1994a: 120 (Type species: *Pterophorus imerinae* Bigot, 1964, by original designation).

Notes. From the genus *Picardia*, we excluded the species *Crassuncus ecstaticus* (Meyrick, 1932), which was previously added to it (Gielis 2011) and returned it to the genus *Crassuncus*. The wide uncus and the shape of the saccular process on the left valve in the male genitalia are the characteristic features of the genus *Crassuncus.*

Picardia betsileo Gibeaux, 1994
Picardia betsileo Gibeaux, 1994a: 122 (Type locality: Madagascar, Pays Betsileo, route du Sud at km 302, Ambatofitorahana Forest).

Distribution: Madagascar.

Picardia delospilus (Meyrick, 1921)
Pterophorus delospilus Meyrick, 1921: 421 (Type locality: Peru, Jurimaguas, Iquitos).

Distribution: Peru, Ecuador.

Picardia eparches (Meyrick, 1931)
Pterophorus eparches Meyrick, 1931: 176 (Type locality: Uganda, Butandiga).

Distribution: Uganda, Kenya, Malawi, Zimbabwe, Tanzania (Arenberger 2001; Kovtunovich *et al.* 2014); Zambia.

Material: 1 male, 1 female, Zambia, Nyica National Park, Manyanjere Forest, 2082m, S 10.586, E 33.657, 18-19. X.2012, R. Murphy leg.

Note. New for Zambia.

Picardia leza Kovtunovich & Ustjuzhanin, 2014
Picardia leza Kovtunovich & Ustjuzhanin, 2014: 489. (Type locality: N. Malawi, Nkhorongo).

Distribution: Malawi.

Picardia negus (Gibeaux, 1994) **comb.nov**.
Figs 1−2
Oidaematophorus negus Gibeaux, 1994: 435 (Type locality: Ethiopia, Wondo-Genet).

Distribution. Ethiopia.

Material: 1 male, **Ethiopia**, Oromia southern Bale Mts., Harenna Forest, 1885 m, 6° 37.103 N, 39°46.422 E, 16-25. XI. 2014, D. Wiersbowsky leg; 1 female, **Ethiopia,** West Sheva, 2 km S. Ambo, 2160m. 08°58' S, 37°51'E, 19-20. X. 2008. O. Gorbunov leg.

Note. Currently, when the male of this species became known, it is obvious that the male and female genital structure and the external characters of the adult show the attribution of this species to the genus *Picardia.* The description of the male genitalia of *P. negus* is provided below.

Male genitalia. Valves narrow, elongated. Saccular process on left valve swollen, with serrated edges, located at base of valve. Saccular process on right valve quite thick, rod-like, not exceeding middle of valve in length. Uncus slightly extended medially and distally, acute apically. Anellus arms wide, asymmetric, left arm wider and shorter than right arm, right arm more narrow and slightly longer. Aedeagus thin, straight, almost twice shorter than valve in length.

Figure 1. ***Picardia negus*** (Gibeaux, 1994). Adult female (Ethiopia**,** West Sheva, 2 km S. Ambo).

Picardia orchatias (Meyrick, 1908)
Pterophorus orchatias Meyrick, 1908: 511 (Type locality Rep. S. Africa, KwaZulu-Natal, Durban).
Pterophorus imerinae Bigot, 1964: 34 (Type locality: Madagascar, Imerina Plateau, Tananarive, Parc de Tzimbazaza).

Distribution: Rep. S. Africa, Madagascar, Tanzania (De Prins & De Prins 2022); Kenya

Material: 1 male, Kenya: Central, Castle Forest Lodge, S 0º 22'43" E 37º18'32", 2100 m, 05.XI.2012, D. Agassiz leg.

Note. New for Kenya.

Picardia raymondi Kovtunovich & Ustjuzhanin, 2014
Picardia raymondi Kovtunovich & Ustjuzhanin, 2014: 489 (Type locality N. Malawi, Nkhorongo).

Distribution: Malawi; Kenya.

Material: 1 female, [Kenya] E. Africa, Kikuyu: Ibea, Escarpment, 7500-8500 ft., IX-X 1900, Doherty leg.

Note. New for Kenya.

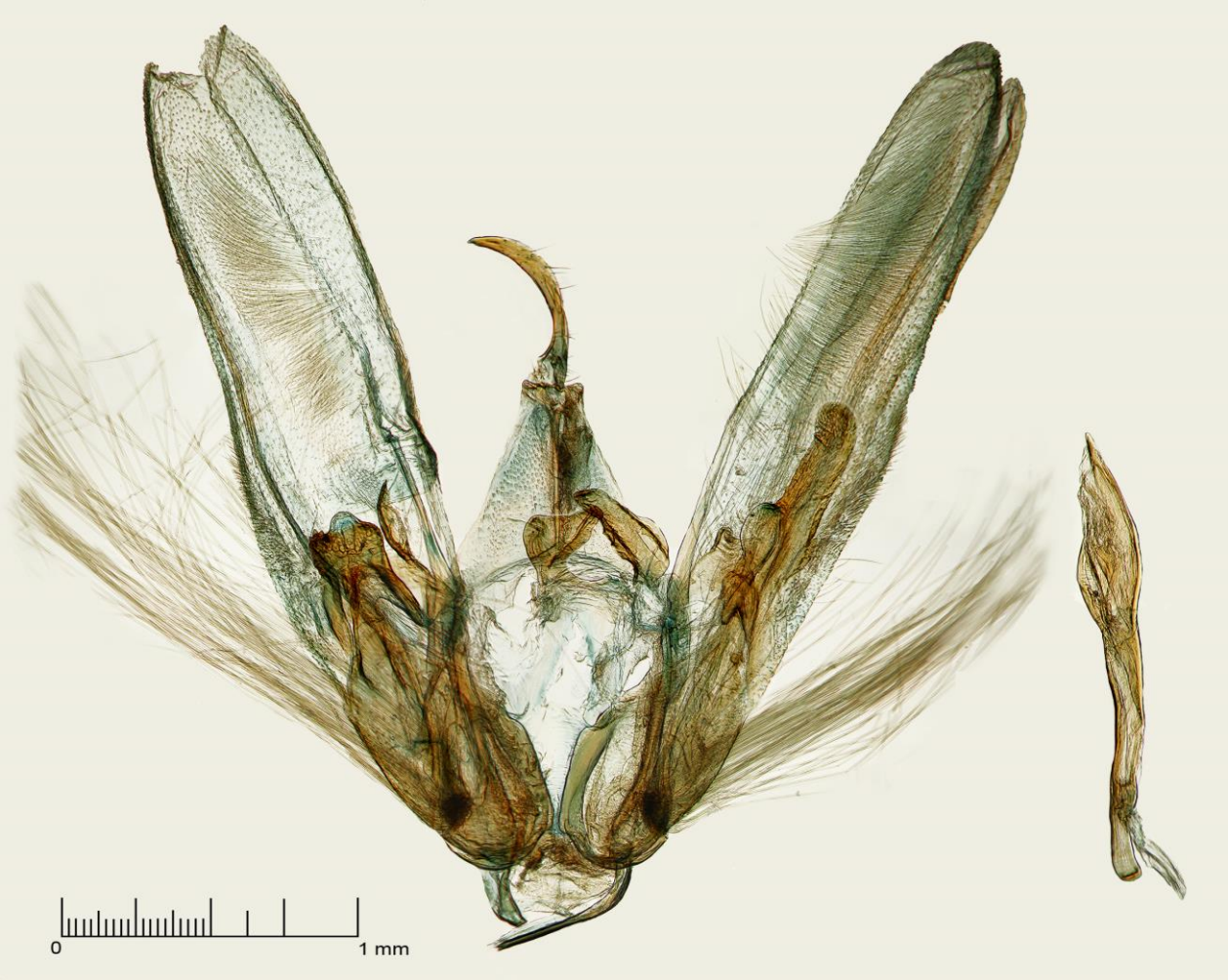

Figure 2. ***Picardia negus*** (Gibeaux, 1994). Male genitalia (CUK, gen.pr. Nr. 364). Ethiopia, Oromia southern Bale Mts., Harenna Forest.

Picardia ruwenzoricus (Gielis, 1991)
Oidaematophorus ruwenzoricus Gielis, 1991: 13. (Type locality: [Democratic Republic of Congo], Congo Belge (Zaire), Parc National Albert, Massif Ruwenzori, Kalonge, Gîte Ruwenzori).

Distribution: Democratic Republic of Congo; Ethiopia.

Material: 1 male, [Ethiopia], Managascha, Centr Abyss., May, 1914, O. Kovacs leg.

Note. New for Ethiopia.

Picardia tumbuka Kovtunovich & Ustjuzhanin, 2014
Picardia tumbuka Kovtunovich & Ustjuzhanin, 2014: 490 (Type locality: N. Malawi, Nkhorongo).

Distribution: Malawi.

Description of new species

Picardia bassi Ustjuzhanin & Kovtunovich, **sp. nov**.
http://zoobank.org/urn:lsid:zoobank.org:act:FE270579-0A97-4EA2-9A63-229A881B15B5
Figs 3−5

Type material: **Holotype**, male, (NHMUK, gen.pr. Nr. 22813), **Kenya,** Ngong Forest. 6500 ft. 22.X.1934 B.M.E. Afr.Exp. B.M. 1935-203; **Paratype**: 1♀ (ZISP, gen.pr. Nr.1983), **W. Kenya,** Naro-Moru, h - 1950 m. 18.XI-03.XII.1984, leg. G. Bassi.

External characters. Head brown, thorax and tegulae pale-yellow. Labioal palpi light-brown, thin, twice shorter than longitudinal eye diameter. Antennae thin, light-brown. Wingspan 18,5–21 mm, in holotype – 18,5 mm. Fore wings yellowish-brown, narrow horseshoe-like brown spot at cleft base. Fringe inside cleft light-yellow. Poorly noticeable narrow brown strokes on dorsal margin of second lobe. Hind wings of the same color as fore wings. Fringe on all wings light-yellow. Hind legs yellow.

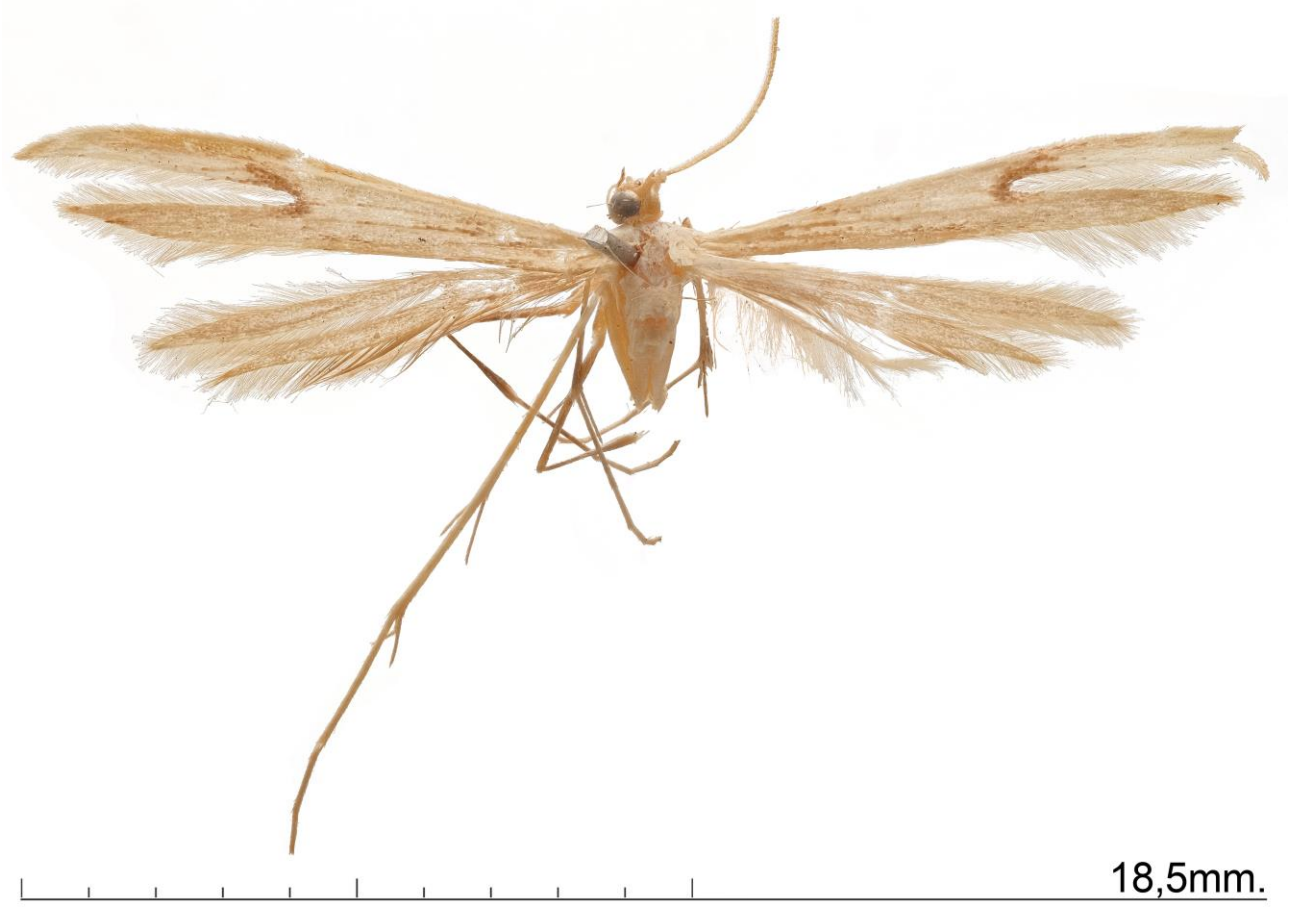

Figure 3. ***Picardia bassi*** Ustjuzhanin & Kovtunovich, **sp. nov**. 3. Adult male (Paratype, NHMUK).

Male genitalia. Valves narrow, elongated. Sclerotized, almost round saccular process closer to base of left valve. On right valve, in its medium part, narrow and elongated saccular process curved almost at a right angle. Uncus narrow, slightly curved, apically sharp. Anellus arms asymmetric: left arm narrow, finger-like, right arm wide, distally narrowing, noticeably longer than left arm. Saccus arched. Aedeagus 1.5 times shorter than valve, distally bent as hockey stick.

Female genitalia. Papillae anales wide-oval, relatively long. Posterior apophyses straight, equally thick along their length. Lamina postvaginalis of stermun VII wide, rectangular, sclerotized, with small notch in middle of outer edge. Antrum wide, cylindrical. Ductus relatively thick, short. Bursa copulatrix long, oval, without signa.

Figure 4. ***Picardia bassi*** Ustjuzhanin & Kovtunovich, **sp. nov**. Male genitalia (Holotype, NHMUK, gen.pr. Nr. 22813).

Diagnosis. In the male genitalia, in the shape of the saccular process on the left valve and aedeagus, the new species is similar to *P. raymondi* from which it clearly differs in the narrow curved saccular process on the right valve, while in *P. raymondi* the saccular process is short, narrow-cuneal.

Flight period. October, December.

Distribution. Kenya.

Etymology. The species is named after the Italian entomologist, specialist in Crambidae, Graziano Bassi, who collected the new species.

Picardia bunga Ustjuzhanin & Kovtunovich, **sp. nov**.
http://zoobank.org/urn:lsid:zoobank.org:act:0BD1A950-E582-4117-9FF6-38BF2AA10F3F
Figs 6−7

Type material: **Holotype**, male, (ZISP, gen.pr. Nr. 1984), **Zimbabwe**, Manicaland Prov., Bvumbe Bunga Forest, 19°07'14"S 32°46'10"E, h – 1650m; 04-05.XII.2010 P. Ustjuzhanin & V. Kovtunovich.

External characters. Head, thorax and tegulae with light-brown scales. Labial palpi brown, thin, slightly shorter than longitudinal eye diameter. Antennae thin, light-brown. Wingspan 18,5 mm. Fore wings yellowish-brown, with v-shaped brown spot at cleft base. Fringe inside cleft light-yellow. Small brown spot on first lobe distally. Three small narrow brown strokes on dorsal margin of second lobe. Hind wings of the same color as fore wings. Fringe on all wings light-yellow. Hind legs yellow.

Figure 5. ***Picardia bassi*** Ustjuzhanin & Kovtunovich, **sp. nov**. Female genitalia (Paratype, ZISP, gen.pr. Nr. 1983).

Figure 6. ***Picardia bunga*** Ustjuzhanin & Kovtunovich, **sp. nov**. Adult male (Holotype, ZISP).

Male genitalia. Valves narrow, elongated. At base of left valve, sclerotized clavate saccular process with prongs on top. On right valve, narrow saccular process, distally curved, medially with additional outgrowth sticking out perpendicularly to saccular process. Uncus narrow, slightly curved, apically acute. Anellus arms asymmetric, left arm slightly shorter than right arm. Saccus arched. Aedeagus 1.5 times shorter than valve, slightly curved distally.

Diagnosis. In the male genitalia, in the shape of the saccular process on the left valve, the new species is similar to *Picardia bassi* sp.nov, from which it differs in the prongs on the saccular process and the additional outgrowth on the saccular process of the right valve.

Flight period. December.

Distribution. Zimbabwe.

Etymology. Toponymic name.

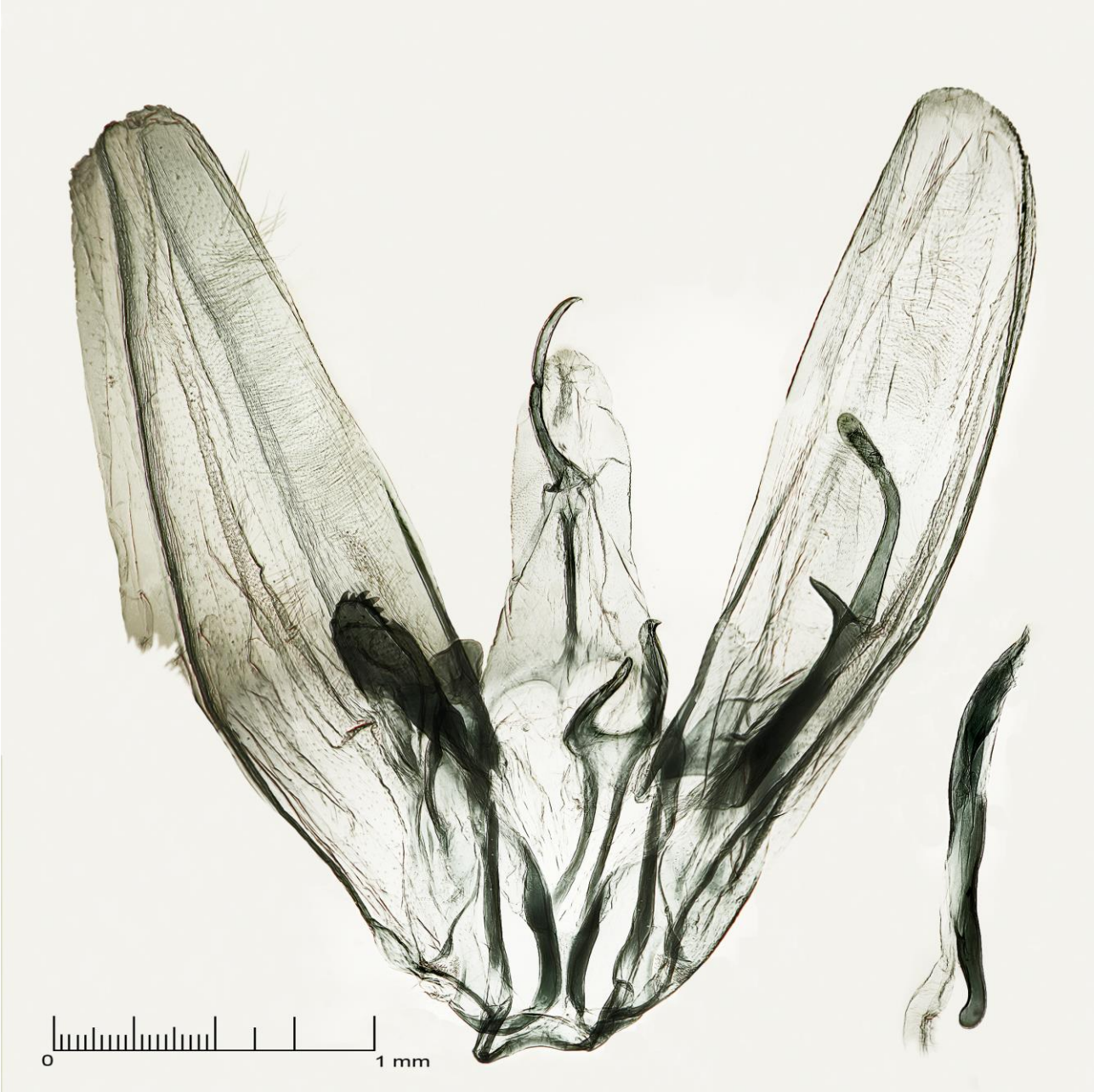

Figure 7. ***Picardia bunga*** Ustjuzhanin & Kovtunovich, **sp. nov**. Male genitalia (Holotype, ZISP, gen.pr. Nr .1984).

Picardia tropeki Ustjuzhanin & Kovtunovich, **sp. nov**.
http://zoobank.org/urn:lsid:zoobank.org:act:C4A6F836-B735-4D0F-A99A-AD3A5467BA02
Figs 8–9

Type material: **Holotype, male**, (NECJU gen.pr. Nr. 220201), **Cameroon**, PlantiCam (1100 m asl), Mount Cameroon (SW slope), N 4.1175000°, E 9.0709440°, 09-14.IV.2015. V. Maicher, Sz. Sáfián, S. Janeček, R. Tropek leg.

External characters. Head browm thorax and tegulae pale-yellow. Labial palpi brown, thin, short, twice shorter than eye diameter. Antennae thin, light-brown. Wingspan 17 mm. Fore wings light-yellow, with oblique narrow elongated brown stroke at cleft base. Small brown spot on first lobe apically. Three small horizontal strokes along outer margin of second lobe apically. Hind wings lighter colored, than fore wings, unicolorous, without pattern. Fringe on all wings light-yellow. Hind legs light-yellow.

Figure 8. ***Picardia tropeki*** Ustjuzhanin & Kovtunovich, **sp. nov**. Adult male (Holotype, NECJU).

Male genitalia. Valves asymmetric. Saccular process on left valve shaped as robust wide sclerotized plate with tiny spikes on margins. Saccular process on right valve thick, sclerotized, uncinately curved. Uncus thin, acute, curved apically. Anellus arms asymmetric, left arm apically extended, right arm conical, basally wide, apically extended. Saccus arched. Aedeagus straight, almost twice shorter than valve in length.

Diagnosis. In the wings color, the new species resembles *P.eparches*, but differs in the oblique, elongated brown stroke at cleft, while in *P. eparches* there is a round spot in front of cleft. In the male genitalia, the new species is close to *P. ruwenzoricus*, from which it differs in the wide robust saccular process on the left valve, and in the uncinate saccular process on the right valve, while in *P. ruwenzoricus* the saccular process on the left valve is clavate, slightly extended, and that on the right valve is short and almost straight, without the curved hook.

Flight period. April.

Distribution. Cameroon.

Etymology. The species is named after the prominent Czech ecologist and entomologist Robert Tropek.

Figure 9. ***Picardia tropeki*** Ustjuzhanin & Kovtunovich, **sp. nov**. Male genitalia (Holotype, NECJU gen.pr. Nr. 220201).

Acknowledgement

The authors express their gratitude to the colleagues: Graziano Bassi (Avigliana, Italy), David Agassiz (London, UK), Szabolcs Sáfián (Sopron, Hungary), Robert Tropek, Vincent Maicher, Štěpán Janeček (Prague, Czech Republic), Raymond Murphy (Mzuzu, Malawi), Oleg Gorbunov (Moscow, Russia), for the material provided for examination. The authors are grateful to Anna Ustjuzhanina (Tomsk, Russia) for language improvements. We also thank Sergey Reshetnikov (Novosibirsk, Russia) for the photographs of the adult specimens.

References

Arenberger, E. (2001) Beitrag zur Kenntnis der Pterophoridae-Fauna Kenyas (Lepidoptera). *Zeitschrift der Arbeitsgemeinschaft österreichischer Entomologen*, 45 (1–2), 31–36.

Bigot, L. (1964) Les Pterophoridae de Madagascar. *Bulletin de la Société entomologique de France*, 69 (1–2), 25–37.

De Prins, J., De Prins, W. (2022) AfroMoths. Online database of Afrotropical moth species (Lepidoptera). Available from: http://www.afromoths.net

Gibeaux, Ch. (1994a) Insectes Lépidoptères: Pterophoridae. *Faune de Madagascar*, 81, 1–176.
Gibeaux, Ch. (1994b) Contribution à la connaissance des Ptérophores d'Ethiopie et identification de *Stenoptilia petraea* Meyrick, 1907, du sud de l'Inde (Lepidoptera, Pterophoridae). *Bulletin de la Société entomologique de France*, 99 (4), 423–436.
Gielis, C. (1991) *Oidaematophorus ruwenzoricus* n. sp. from Zaire (Lepidoptera: Pterophoridae). *Entomologische Berichten, Amsterdam*, 51 (1), 13–14.
Gielis, C. (2003) Pterophoroidea & Alucitoidea (Lepidoptera). [In] *World Catalogue of Insects*, 4, 198 s. Apollo Books, Stenstrup.
Gielis, C. (2011) Notes on some African Pterophoridae, with description of new species (Lepidoptera). *Boletín de la Sociedad Entomológica Aragonese*, 49, 33–63.
Gielis, C. (2012) Review of the Neotropical species of the family Pterophoridae, part III: Additions from Chile, Ecuador and Paraguay. *Boletin de la Sociedad Entomologica Aragonesa*, 51, 105–124.
Kovtunovich, V. N., Ustjuzhanin, P. Y. & Murphy, R. (2014) Plume moths of Malawi (Lepidoptera: Pterophoridae). *Zootaxa*, 3847 (4), 451–494.
Meyrick, E. (1908) Notes and descriptions of Pterophoridae and Orneodidae. *Transactions of the entomological Society of London*, 1907 (4), 471–511.
Meyrick, E. (1921) *Exotic Microlepidoptera*, 2 (14), 417-448.
Meyrick, E. (1931) *Exotic Microlepidoptera*, 4. 4 (2–6), 33–192.
Meyrick, E. (1932) *Exotic Microlepidoptera*, 4. 4 (7–11), 193–352.