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Seven new species of *Rhynchobombyx* Aurivillius, 1909 from Congolian lowland forests (Lepidoptera: Lasiocampidae)

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Abstract

Seven new species of the Afrotropic Lasiocampidae genus *Rhynchobombyx* are described and illustrated: *Rh. gavinfilippone* Prozorov, Saldaitis & Müller **sp. n.**, *Rh. avadomenicarocchio* Prozorov, Saldaitis & Müller **sp. n.**, *Rh. julianjameseaton* Prozorov, Saldaitis & Müller **sp. n.**, *Rh. anthonychristophereaton* Prozorov, Saldaitis & Müller **sp. n.**, *Rh. nicolasrobert Eaton* Prozorov, Saldaitis & Müller **sp. n.**, *Rh. ariakefriend* Prozorov, Saldaitis & Müller **sp. n.**, *Rh. madisonella friend* Prozorov, Saldaitis & Müller **sp. n.** All species originate from the poorly studied Congolian lowland forests ecoregion of Congo and Democratic Republic of the Congo. Lectotype and paralectotype of *Rh. nasuta* Aurivillius, 1909 are designated here, the species type locality is specified.

Key words: Afrotropic, biodiversity, lappet moths, lectotype designation, new taxa.

Introduction

Rhynchobombyx Aurivillius, 1909 was established as a monotypic genus for *Rh. nasuta* Aurivillius, 1909 which was described after two small sized adults were collected in the Democratic Republic of the Congo. No additional data was published since, however, adults of *Rh. nasuta* and other species of the genus were kept in some collections, mainly misidentified as *Pachymeta* Aurivillius (1906); *Pachymetana* Strand (1912a); *Pseudometa* Aurivillius (1901) or were even unidentified. Our investigation showed that about 10 new species remain undescribed. Here, we concentrated only on the ones originated from the Congolian lowland forests ecoregion. The goal is to uncover the hidden richness of a poorly known region (WWF, 2021), problematic to navigate and difficult for a protracted stay, though studied just recently. A one-year expedition took place in the scientific camp Ekongo originally built for the bonobo habituation project (Bonobo Alive, 2021). The first published results devoted to lasiocampids included one new species of another monotypic genus *Typhonoya* Prozorov, 2011 which was collected in Ekongo, but was also found in one old collection (Prozorov *et al.*, 2021). Here we add seven new species to the monotypic *Rhynchobombyx* which furthers our goal of uncovering this region's rich biodiversity.

Material and methods

Adults were photographed with an Olympus C750UZ, a Nikon D3300 and a Nikon 40 mm f/2.8G or a Nikon 85 mm f/3.5G. Morphologic preparations were photographed using Fujifilm X-T10 with Motic SMZ-161-TLED. All images were processed in Photoshop CS6 (Adobe, 2012).

Several moths were collected near the Ekongo camp site, Democratic Republic of Congo (DRC), using a white screen with a Sylvania Mini-Lynx Blacklight BL368 mounted under the roofs and chains of locally made auto-traps, with the same bulb, both run by a Honda EU 20i generator. Specimens from the following collections were examined:

- BUM** University of Sciences, Techniques and Technologies of Bamako (Mali);
- CGM** collection of Günter Müller (Freising, Germany);
- MWM** Museum Witt Munich (Munich, Germany);
- RBINS** Royal Belgian Institute of Natural Sciences (Brussels, Belgium);
- RMCA** Royal Museum for Central Africa (Tervuren, Belgium);
- SNHM** Swedish Natural History Museum (Stockholm, Sweden);
- ZSM** Bavarian State Collection of Zoology (Munich, Germany).

Taxonomical part

Rhynchobombyx nasuta Aurivillius, 1909

(Figs 1–11, 47, 49–52)

Rhynchobombyx nasuta Aurivillius, 1909, Arkiv för Zoologi 5(5): 26. Type locality: [DRC, Tshuapa Prov., Lomela River, Gombe-Isongo] Gombi. Lectotype male (RBINS), **here designated**.

Type material examined. **LECTOTYPE** ♂, **DRC**, [Tshuapa Prov., Lomela River, Gombe-Isongo] Gombi, 13.XII.1906, leg. M. Waelbroeck, genitalia slide GU 2008-10 (RBINS); **PARALECTOTYPE** ♂, [DRC?] “Congo”, [unintelligibly], [18]91, genitalia slide RMprep 9968 (SNHM). **Additional material examined.** 29♂, **DRC**, [Kasaï Prov.] Kasaï-Occidental Prov., NE Ilebo and Kasai River, X–XII.1997, genitalia slide 0639–0640 (CGM/BUM); 4♂, **DRC**, Mai-Ndombe Prov., Ekongo camp, 02°45'23.09"S, 20°18'55.37"E, XI.2017, leg. A. & T. Prozorovs, V. Kravchenko *et al.* (CGM/BUM); 1♂, 1♀, **Congo**, [Cuvette-Ouest Dept.], Odzala Nat. Park, 400–500 m, 0°23'N, 14°50'E, 29.I–3.III.1997, leg. V. Siniaev, S. Murzin, genitalia slide 17.473 (ZSM/MWM); ♂, **Angola**, Benguela Prov., rd. Londongo–Sumbe, ca. 80 km S Sumbe, 10 km rd. to Bumba, 280 m, 11°47'33.1"S, 14°02'17.4"E, 18.XI.2017, leg. S. Naumann, E. Ott & H. Sulak, genitalia slide 0629 (CGM/BUM).

Diagnosis. Forewing coloration brown and orange, not uniform like *Rh. gavinfilippone*, *Rh. avadomenicarocchio*, *Rh. anthonychristophereaton*, generally lighter than *Rh. julianjameseaton*, but adults are darker (Fig. 8) reminiscent of the lighter ones of *Rh. julianjameseaton* (Fig. 25), although vesica doesn't bear cornutus. Medial lines not smooth like in *Rh. ariakefriend* or *Rh. madisonellafriend* but crenulated.

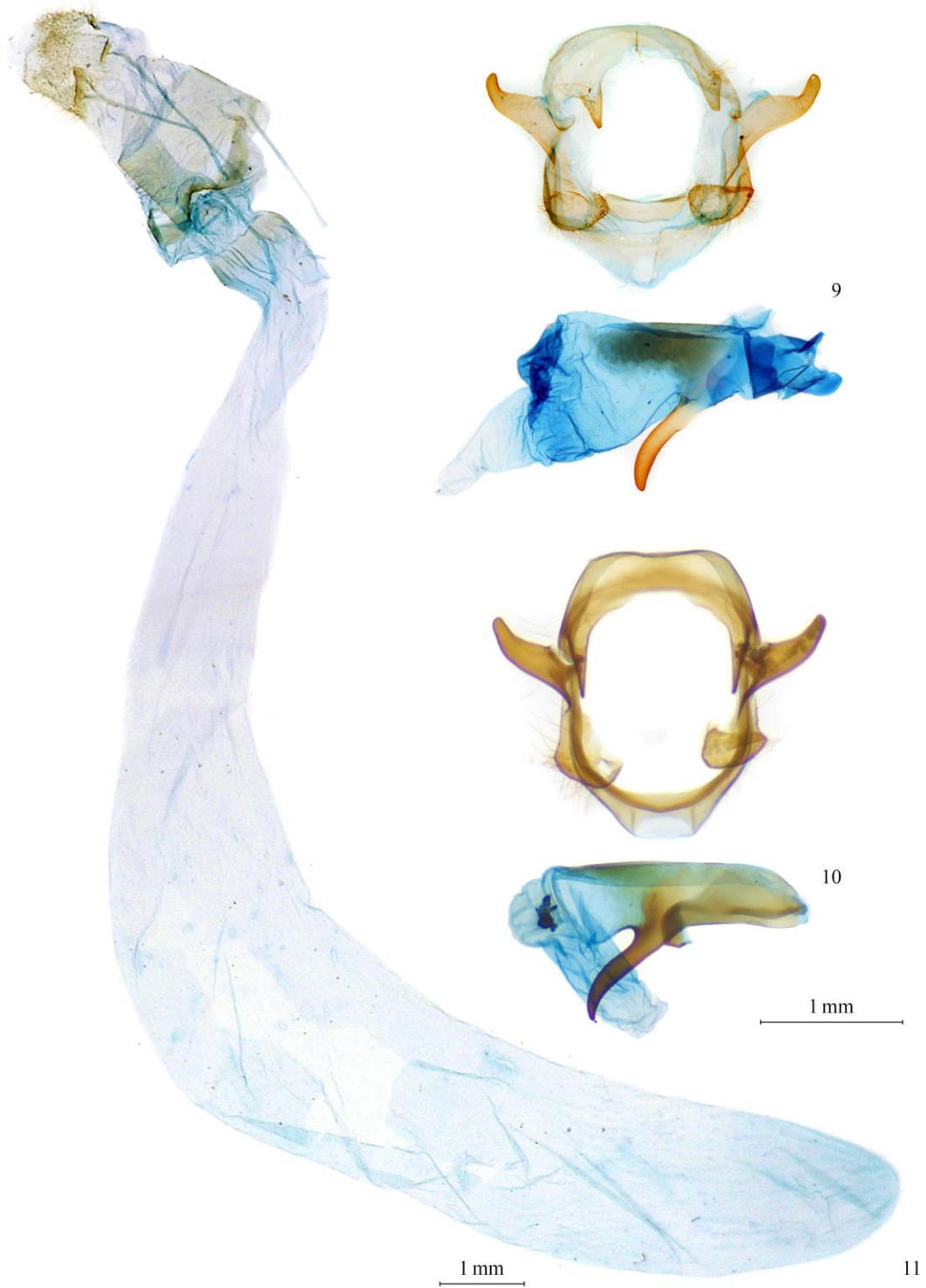
Taxonomic notes. Aurivillius described the species after two males: one from Brussels museum, another from Émile Seeldrayers' collection. The first one deposited in RBINS was studied and labeled a lectotype by Vadim Zolotuhin and Alexander Gurkovich back in 2008 and consequently suggested to be a valid lectotype (De Prins & De Prins, 2011–2021), although no formal publication of the nomenclatorial act was followed. The male is clearly a syntype, it bears the label location of “Gombi | 13–12–06” and a collector “Waelbroeck,” both were mentioned in the original description. So, here we designate it a lectotype of *Rh. nasuta*, figure the specimen (Fig. 3), labels (Fig. 1) and its genitalia (Fig. 9). The second syntype male, deposited in SNHM, was studied by Zolotuhin and Gurkovich as well, herein we designate it a paralectotype and figure it as well (Figs 2, 5).



Figures 1–8. Labels and adults of *Rh. nasuta*. 1. Lectotype labels (RBINS). 2. Paralectotype labels (SNHM). 3. Male lectotype, DRC, Tshuapa Prov., genitalia slide GU 2008-10 (RBINS). 4. DRC, Kasai Prov., genitalia slide 0640 (CGM/BUM). 5. Male paralectotype, “Congo,” genitalia slide RMprep 9968 (SNHM). 6. Male, Congo, Cuvette-Ouest Dept., genitalia slide 0638 (CGM/BUM). 7. Female, Congo, Cuvette-Ouest Dept., genitalia slide 17.473 (ZSM/MWM). 8. Male, Angola, Benguela Prov., genitalia slide 0629 (CGM/BUM).

We did not find the location of “Congogebiet: Gombi,” so we tried to investigate the details. Interestingly enough we found spelling “Gombi” only in Aurivillius’ article: for *Rh. nasuta* collected on “13–12–06” and *Pachypasa nigrescens* Aurivillius, 1909 collected on “13–12–03.” The variation “Gombe” or “Gombé” together with “Lomela” as M. Waelbroeck’s collecting area appeared in 6 other publications (Cameron, 1912; Lestage, 1918; Schouteden, 1918; Schouteden, 1920; Strand, 1912b and Strand, 1918). Lomela is a tributary of the Busira River, both belong to the Congo basin – “Congogebiet” mentioned in the

original description. Busira was also listed many times as Waelbroeck's collecting area (for example in Schouteden, 1918). Surcouf mentioned that Waelbroeck was "on the steamer 'Président Urban' in Bussira on October 15th, 1905" (Surcouf, 1911), and he was in Gombe not long before on October 6th, 1905 (Strand, 1912b). We suggest that Gombi is only a misspelling of Gombe which is somewhere along Lomela. The only "Gombe" we found is Gombe-Isongo about 125 km away from the Lomela's mouth to Busira (Fig. 49), assuming it is the correct area, we therefore designate it as the type locality for *Rh. nasuta* and *Ch. nigrescens*.



Figures 9–11. Genitalia of *Rh. nasuta*. 9. Male lectotype, DRC, Tshuapa Prov., genitalia slide GU 2008-10 (RBINS). 10. Male, Angola, Benguela Prov., genitalia slide 0629 (CGM/BUM). 11. Female, Congo, Cuvette-Ouest Dept., genitalia slide 17.473 (ZSM/MWM).

Even though the characteristics of the typical *Rh. nasuta* are clear to us, we prefer to postpone the species detailed redescription for the forthcoming article when the relationship of dark forms from Angola (Fig. 8) and the DRC is clarified and more rarely occurring females are studied. We also would like to additionally describe the genus characters like chorionic sculpture of egg and chaetotaxy of first instar larva recently collected in DRC, head, legs and wing venation with discussion of the genus position within Lasiocampidae.

***Rhynchobombyx gavinfilippone* Prozorov, Saldaitis & Müller sp. n.**

<http://zoobank.org/urn:lsid:zoobank.org:act:44E768CA-284E-4BE3-8B01-4A8A4C1E2D5E>

(Figs 12–16, 48)

Type material: HOLOTYPE ♂, DRC, [Haut-Uele Prov., Isiro] Uele: Paulis, 1.VIII.1959, genitalia slide GU 2011-167 (RMCA). **PARATYPES:** 3♂♂, data as for holotype but collected in 5.III.1957, 1.VIII.1959, 3.X.1959, genitalia slides GU 2011-154, GU 2011-155, GU 2011-158 (RMCA).

Diagnosis. Externally the species resembles *Rh. avadomenicarocchio* and *Rh. anthonychristophereaton* but without forewing concavity between CuA₂ and 1A and vesica bears cornutus in male genitalia.

Description. Male habitus (Figs 12–14). Head and thorax orangish, abdomen yellowish. Thorax dorsally bears triangular dark brown spot with pale center. Forewing length: 13–14 mm; wingspan: 28 mm. Wing oval-shaped, apex obtuse, external margin slightly waved. Background color uniform orangish, cilia darker brownish orange. Pattern consists of multiplied dark brown antemedial, postmedial and external crenulate lines, lunules between R₃, R₄, R₅ and M₁; blackish discal dot on R-Cu cell outer margin. Hindwing oval-shaped, external margin rounded, slightly waved. Main color from yellowish to orangish, costal and tornal fields darker brownish orange. Cilia brownish orange. **Male genitalia** (Figs 15–16). Tegumen band-shaped, bears two short projections with bent, sharpened apexes and covered with chaetae along. Vinculum thin, ventrally widened into cup-like form. Sacculus elongated, finger-shaped with blunt apex. Cucullus tubercle-like, covered with chaetae. Juxta a tiny plate fused with aedeagus. Aedeagus cylindrical with uneven dorsal sclerotized field, right by vesica and ventral c-shaped basal spur with nearly pointed apex. Vesica bag-shaped with two chambers: smaller lateral and larger main, both covered with tiny denticles; main one bears claw-like cornutus with medial fossa along it that makes it look like it consists of pair of fused cornuti. **Female remains unknown**, expected to be bigger and darker than male.

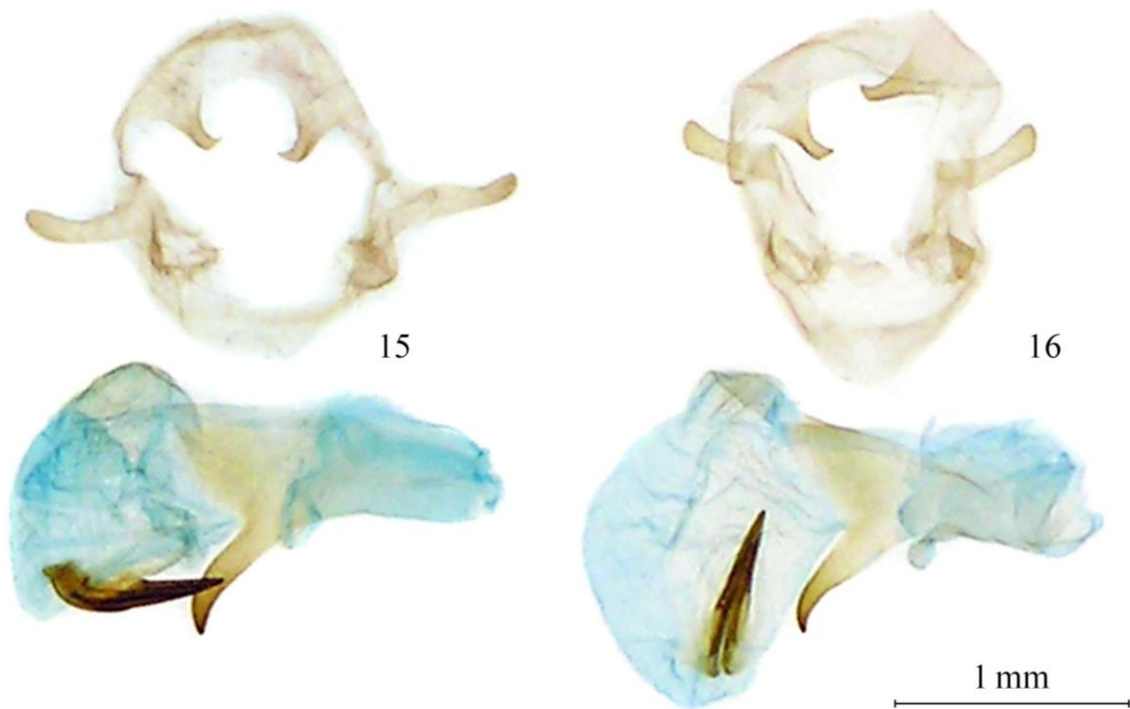


Figures 12–14. Males of *Rh. gavinfilippone*, all DRC, Haut-Uele Prov. 12. Holotype, genitalia slide GU 2011-167 (RMCA). 13. Paratype, genitalia slide GU 2011-155 (RMCA). 14. Paratype, genitalia slide GU 2011-154 (RMCA)

Etymology. The species is named in honour of Gavin Filippone (Pedricktown, New Jersey, USA). Gavin loves and collects insects, he watches programs to expand his knowledge of animals, reptiles and insects.

Distribution. The species is found in DRC, Haut-Uele Province (Fig. 48).

Biology. Adults were collected in August, October and March. The only known habitat is tropical moist broadleaf forests with rare mosaic grassland patches, the elevation is around 800 m above sea-level. The larval foodplant remains unknown.



Figures 15–16. Male genitalia of *Rh. gavinfilippone*, both DRC, Haut-Uele Prov. 15. Holotype, genitalia slide GU 2011-167 (RMCA). 16. Paratype, genitalia slide GU 2011-158 (RMCA).

***Rhynchobombyx avadomenicarocchio* Prozorov, Saldaitis & Müller sp. n.**

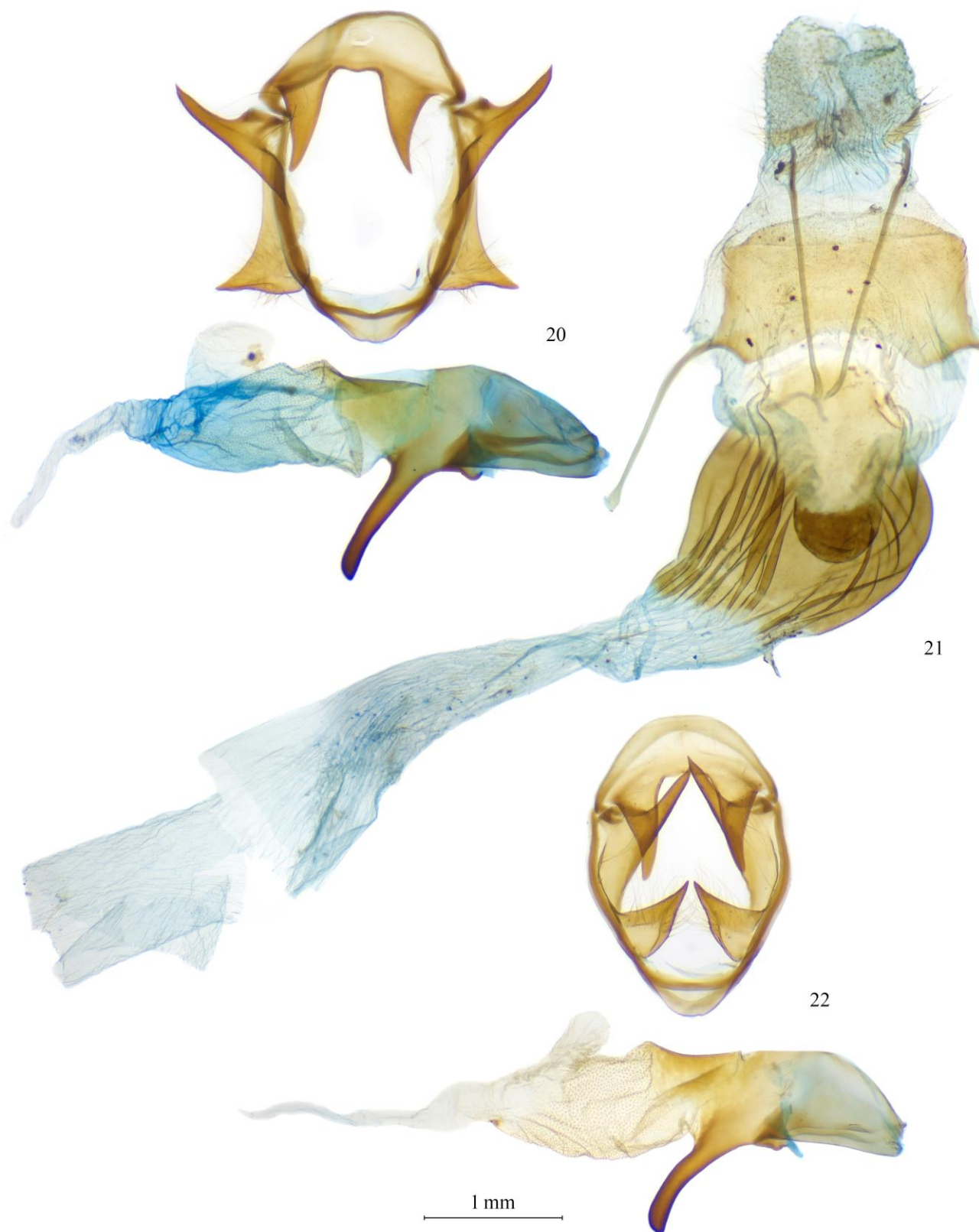
<http://zoobank.org/urn:lsid:zoobank.org:act:BB530F5C-24E3-427E-A3DF-81B7AC8DC244>
(Figs 17–22, 50–51)

Type material: **HOLOTYPE** ♂, **DRC**, [Kasaï Prov.] Kasaï-Occidental Prov., NE Ilebo and Kasai River, XI.1997, genitalia slide 0615 (CGM/BUM). **PARATYPES** (28♂, 1♀ total): 24♂, 1♀ data as for holotype but collected in IX–II, V, VI.1997, genitalia slides 0616–0619 (CGM/BUM); **DRC**: 4♂, Mai-Ndombe Prov., Ekongo camp, 02°45'23.09"S, 20°18'55.37"E, XI.2017, leg. A. & T. Prozorovs, V. Kravchenko et al. (CGM/BUM).

Diagnosis. Externally the species resembles *Rh. gavinfilippone* and *Rh. anthonychristophereaton* but darker colored, without forewing concavity between CuA₂ and 1A and vesica doesn't bear cornutus in male genitalia.



Figures 17–19. Adults of *Rh. avadomenicarocchio*, all DRC, Kasaï Prov. 17. Male holotype, genitalia slide 0615 (CGM/BUM). 18. Female paratype, genitalia slide 0618 (CGM/BUM). 19. Male paratype, genitalia slide 0619 (CGM/BUM).



Figures 20–22. Genitalia of *Rh. avadomenicarocchio*, all DRC, Kasai Prov. 20. Holotype male, genitalia slide 0615 (CGM/BUM). 21. Paratype female, genitalia slide 0618 (CGM/BUM). 22. Paratype male, genitalia slide 0617 (CGM/BUM).

Description. Male habitus (Figs 17, 19). Head and thorax orangish brown, abdomen from yellow to yellowish brown. Thorax bears dorsal triangular dark brown spot with pale center. Forewing length: 12–13 mm; wingspan: 26–27 mm. Wing oval-shaped, apex obtuse, external margin smooth. Background color uniform orangish brown, only darkens towards the external margin until it is dark brown between R_3 , R_4 , R_5 and M_1 . Pattern consists of dark brown antemedial, postmedial and external crenulate lines also with blackish discal dot on R-Cu cell outer margin. Cilia orangish brown. Hindwing oval-shaped, external margin rounded, slightly waved. Main color yellowish, costal and tornal fields darker. Cilia brown. **Male genitalia** (Figs 20, 22). Tegumen band-shaped, bears two short projections with sharpened apices and covered with chaetae along. Vinculum thin, ventrally widened into cup-like form. Sacculus elongated, finger-shaped with blunt apex. Cucullus tuber-like, covered with chaetae. Juxta a tiny plate fused with aedeagus. Aedeagus cylindrical with uneven dorsal sclerotized field right by vesica and ventral c-shaped basal spur with nearly pointed apex. Vesica bag-shaped with two chambers: smaller lateral and bigger main, both covered with tiny denticles; main one bears claw-like cornutus with medial fossa along that makes it looking like it consists of pair of fused cornuti. **Female habitus** (Fig. 18). Forewing length: 14 mm; wingspan: 30 mm. Pattern similar to male, but hindwings darker. **Female genitalia** (Fig. 21). Papillae anales spherical, densely covered with chaetae. Anterior and posterior apophyses nearly equal in length. Lamella antevaginalis membranous, lamella postvaginalis sclerotized. Ductus bursae uneven, wrinkled, inflated, sclerotized. Corpus bursae long, membranous, wrinkled, it's cut and full length unknown.

Etymology. The species is named in honour of Ava Domenica Rocchio (Staten Island, New York, USA). Ava Domenica loves nature and studies all insects and worms that she encounters. She wants to become an Entomologist.

Distribution. The species is found in three locations in DRC, Kasai and Mai-Ndombe Province (Figs 50–51).

Biology. Adults were observed and collected from September to February, also in May and June. The only known habitat is tropical moist broadleaf forests with rare mosaic grassland, the elevation is around 100 m above sea-level. Four paratype males were collected on the border between forest and grassland in an area of one hectare using an auto-trap (Figs 53–55). The larval foodplant remains unknown.

***Rhynchobombyx julianjameseaton* Prozorov, Saldaitis & Müller sp. n.**

<http://zoobank.org/urn:lsid:zoobank.org:act:F2F0E302-E884-4BB3-8F15-8CF25788AD7E>

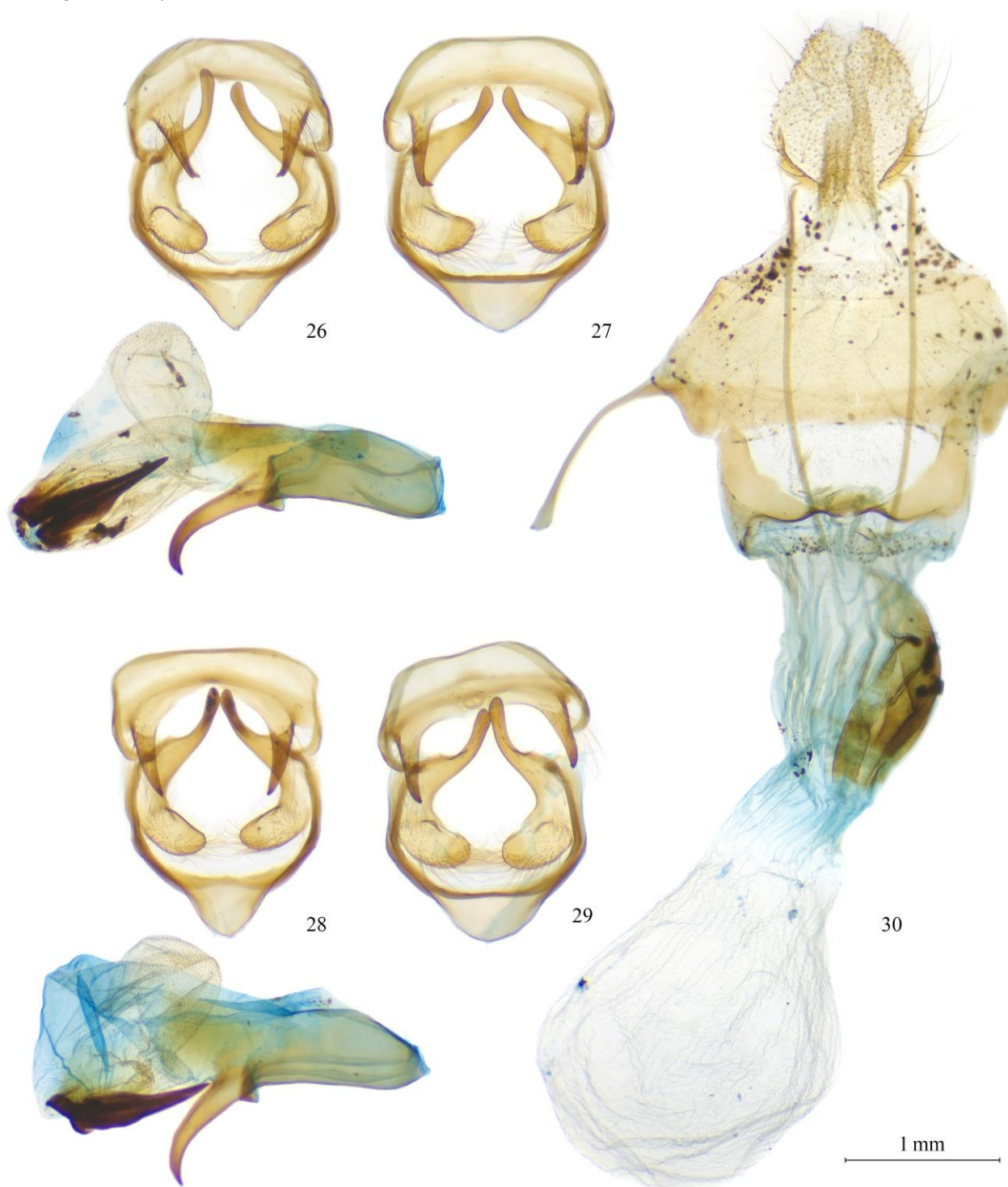
(Figs 23–30, 47, 50–51)

Type material: HOLOTYPE ♂, DRC, [Kasai Prov.] Kasai-Occidental Prov., NE Ilebo and Kasai River, XI.1997, genitalia slide 0620 (CGM/BUM). **PARATYPES** (20♂, 1♀ total): 16♂, 1♀, data as for holotype but collected in X, XI, XII, I, III, V.1997, genitalia slides 0621–0624, 0759 (CGM/BUM); **DRC**: 2♂, Mai-Ndombe Prov., Ekongo camp, 02°45'23.09"S, 20°18'55.37"E, XII.2017, leg. A. & T. Prozorovs, V. Kravchenko et al. (CGM/BUM); **Congo**: 2♂, [Cuvette-Ouest Dept.], Odzala Nat. Park, 400–500 m, 0°23'N, 14°50'E, 29.I–3.III.1997, leg. V. Siniaev, S. Murzin, genitalia slides 17.471, 17.472 (MWM/ZSM).



Figures 23–25. Adults of *Rh. julianjameseaton*, all DRC, Kasai Prov. 23. Male holotype, genitalia slide 0620 (CGM/BUM). 24. Female paratype, genitalia slide 0624 (CGM/BUM). 25. Male paratype, genitalia slide 0623 (CGM/BUM).

Diagnosis. Externally the species darker than the others, resembles *Rh. nicolasroberteton*, but without forewing concavity between CuA₂ and 1A.



Figures 26–30. Genitalia of *Rh. julianjameseaton*, all DRC, Kasai Prov. 26. Male holotype, genitalia slide 0620 (CGM/BUM). 27. Male paratype, genitalia slide 0623 (CGM/BUM). 28. Male paratype, genitalia slide 0622 (CGM/BUM). 29. Male paratype, genitalia slide 0621 (CGM/BUM). 30. Female paratype, genitalia slide 0624 (CGM/BUM).

Description. Male habitus (Figs 23, 25). Head and thorax brown to dark brown, abdomen from yellow to brown. Forewing length: 13–14 mm; wingspan: 30–31 mm. Wing oval-shaped, apex obtuse, external margin slightly wavy. Pattern consists of lighter orangish brown to brown antemedial and postmedial fields and

darker brown medial and external fields; multiplied light and dark antemedial, postmedial and external crenulate lines; and blackish discal dot on R-Cu cell outer margin. Cilia brown. Some males' pattern fades. Hindwing oval-shaped, external margin rounded, slightly waved. Main color from yellow to brown, costal and anal fields darker. Cilia brown. **Male genitalia** (Figs 26–29). Tegumen band-shaped, bears two short projections with bifurcated apices and covered with chaetae along. Vinculum thin, ventrally widened into cup-like form. Saccus elongated, finger-shaped with blunt apex. Cucullus tuber-like, covered with chaetae. Juxta a tiny plate fused with aedeagus. Aedeagus cylindrical with uneven dorsal sclerotized field right by vesica and ventral c-shaped basal spur with nearly pointed apex. Vesica bag-shaped with two chambers: smaller lateral and bigger main, both covered with tiny denticles; main one bears claw-like cornutus with medial fossa that makes it look like it consists of pair of fused cornuti. **Female habitus** (Fig. 24). Forewing length: 17 mm; wingspan: 36 mm. Pattern similar to male, but hindwings darker. **Female genitalia** (Fig. 30). Papillae anales oval, densely covered with chaetae. Posterior apophyses 1.75 times longer than anterior. Lamella antevaginalis membranous, lamella postvaginalis sclerotized, mesally thinned. Ductus bursae about the size of corpus bursae, wrinkled, laterally sclerotized. Corpus bursae spherical, membranous, wrinkled.

Etymology. The species is named in honour of Julian James Eaton (East Providence, Rhode Island, USA). Julian James is nature lover and sports enthusiast. He plays soccer and baseball and was accepted into his school soccer travel team.

Distribution. The species is found in two locations in DRC, Kasai and Mai-Ndombe Province, and in one location in Congo, Cuvette-Ouest Department (Figs 47, 50–51).

Biology. Adults were observed and collected from October to January, in March and May. The only known habitat is tropical moist broadleaf forests with rare mosaic grassland patches, the elevation is around 100 m above sea-level in DRC and 500 m in Congo. Two paratype males were collected on the border between forest and grassland in an area of one hectare using an auto-trap (Figs 53–55). The larval foodplant remains unknown.

***Rhynchobombyx anthonychristophereaton* Prozorov, Saldaitis & Müller sp. n.**

<http://zoobank.org/urn:lsid:zoobank.org:act:FB9E4BCD-8CE5-4DB9-A769-5475B212D20C>
(Figs 31–36, 50–51)

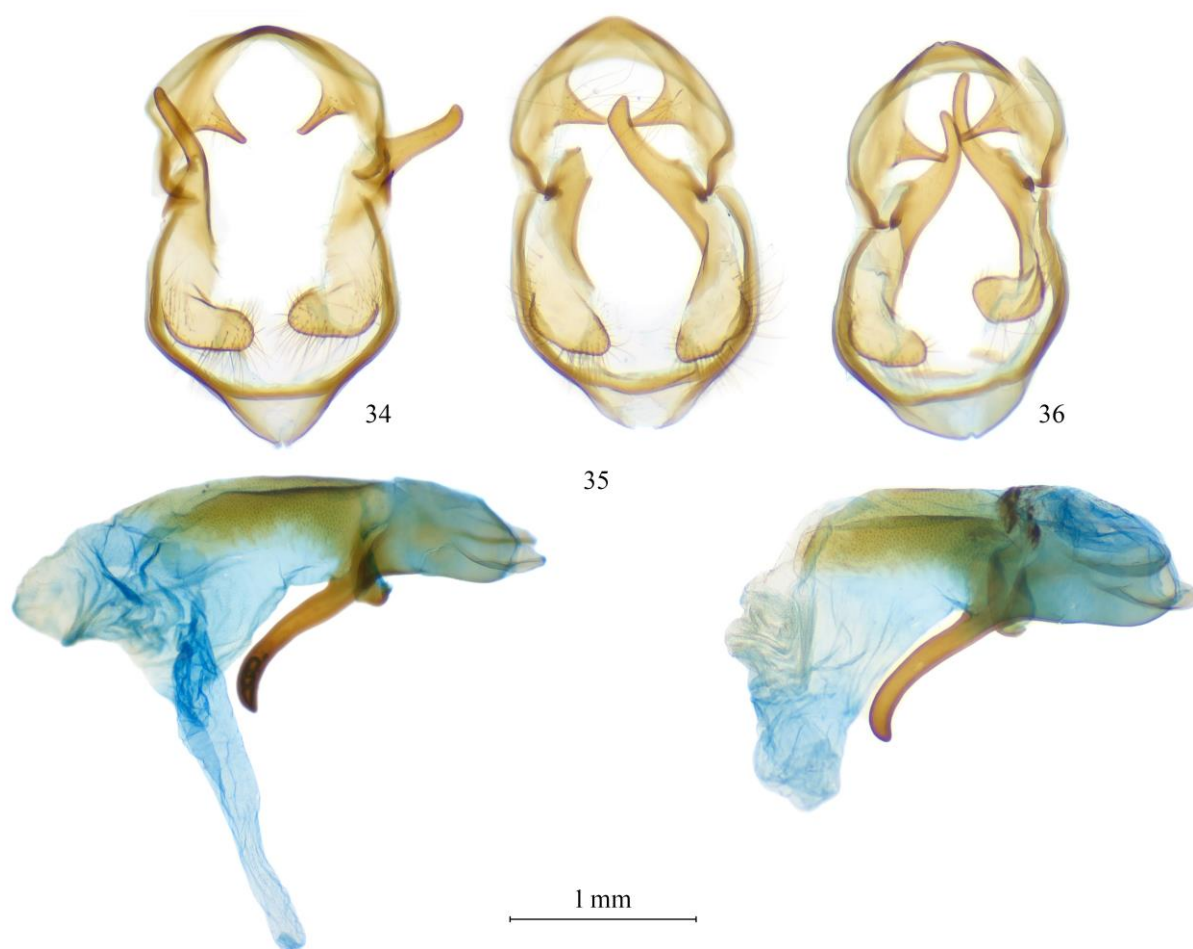
Type material: **HOLOTYPE** ♂, DRC, [Kasai Prov.] Kasai-Occidental Prov., NE Ilebo and Kasai River, XI.1997, genitalia slide 0636 (CGM/BUM). **PARATYPES** (13♂ total): 11♂, data as for holotype but collected during X–XII.1997, genitalia slides 0635, 0637 (CGM/BUM); **DRC**: 2♂, Mai-Ndombe Prov., Ekongo camp, 02°45'23.09"S, 20°18'55.37"E, II.2017, leg. A. & T. Prozorovs, V. Kravchenko et al. (CGM/BUM).

Diagnosis. Externally the species differs from the others by forewing concavity between CuA₂ and 1A like in *Rh. nicolasroberteaton*, but lighter colored.



Figures 31–33. Males of *Rh. anthonychristophereaton*, all DRC, Kasai Prov. 31. Holotype, genitalia slide 0636 (CGM/BUM). 32. Paratype, genitalia slide 0635 (CGM/BUM). 33. Paratype, genitalia slide 0637 (CGM/BUM).

Description. Male habitus (Figs 31–33). Head and thorax reddish orange, abdomen yellow. Thorax dorsally bears triangular dark brown spot with pale center; dark brown line goes from the spot towards dark brown palpi. Forewing length: 14–15 mm; wingspan: 29–31 mm. Wing oval-shaped, apex obtuse, external margin slightly waved with concavity between CuA_2 and 1A. Background color uniform orange, cilia brown. Pattern consists of dark brown antemedial, postmedial and faded external crenulate lines, lunules between R_4 , R_5 , M_1 and M_2 ; blackish discal dot on R-Cu cell outer margin. Hindwing oval-shaped, external margin rounded, slightly waved. Main color from yellow to orangish yellow, costal and tornal fields darker brownish. Cilia brown. **Male genitalia** (Figs 34–36). Tegumen band-shaped, bears two short projections with blunt apices and covered with chaetae along. Vinculum thin, ventrally widened into cup-like form. Saccus elongated, finger-shaped with blunt apex. Cucullus tuber-like, covered with chaetae. Juxta a tiny plate fused with aedeagus. Aedeagus cylindrical with uneven dorsal sclerotized field right by vesica and ventral c-shaped basal spur with blunt apex. Vesica bag-shaped with two chambers: smaller lateral and bigger main, both covered with tiny denticles. **Female remains unknown**, expected to be bigger and darker than male.



Figures 34–36. Male genitalia of *Rh. anthonychristophereaton*, all DRC, Kasai Prov. 34. Holotype, genitalia slide 0636 (CGM/BUM). 35. Paratype, genitalia slide 0635 (CGM/BUM). 36. Paratype, genitalia slide 0637 (CGM/BUM).

Etymology. The species is named in honour of Anthony Christopher Eaton (East Providence, Rhode Island, USA). Anthony Christopher is nature and sports enthusiast, especially wrestling.

Distribution. The species is found in two locations in DRC, Kasai and Mai-Ndombe Province (Figs 47–48).

Biology. Adults were observed and collected from September to December and in February. The only known habitat is tropical moist broadleaf forests with rare mosaic grassland patches, the elevation is around 100 m

above sea-level. Two paratype males were collected on the border between forest and grassland in an area of one hectare using an auto-trap (Figs 53–55). The larval foodplant remains unknown.

***Rhynchobombyx nicolasroberteaton* Prozorov, Saldaitis & Müller sp. n.**

<http://zoobank.org/urn:lsid:zoobank.org:act:8B4CE762-457F-4830-860B-701219A57867>

(Figs 37–42, 50–51)

Type material: **HOLOTYPE** ♂, **DRC**, [Kasaï Prov.] Kasaï-Occidental Prov., NE Ilebo and Kasai River, XI.1997, genitalia slide 0634 (CGM/BUM). **PARATYPES** (10♂ total): 9♂, data as for holotype but collected in XII and II.1997, genitalia slides 0632, 0633 (CGM/BUM); **DRC**: 1♂, Mai-Ndombe Prov., Ekongo camp, 02°45'23.09"S, 20°18'55.37"E, XI.2017, leg. A. & T. Prozorovs, V. Kravchenko et al. (CGM/BUM).

Diagnosis. Externally the species darker than the others, resembles *Rh. julianjameseaton*, but with forewing concavity between CuA₂ and 1A.

Description. Male habitus (Figs 37–39). Head, thorax and abdomen brown. Thorax bears dorsal triangular dark brown spot with pale center; dark brown line goes from the spot towards head. Forewing length: 14–15 mm; wingspan: 29–31 mm. Wing oval-shaped, apex obtuse, external margin slightly waved with concavity between CuA₂ and 1A. Pattern marmorate, orangish brown and brown with multiplied light and dark antemedial, postmedial and external crenulate lines; and blackish discal dot on R-Cu cell outer margin. Cilia brown. Hindwing oval-shaped, external margin rounded, slightly waved. Main color yellowish or reddish brown, darkens caudally. Cilia brown. **Male genitalia** (Figs 40–42). Tegumen band-shaped, bears two short projections with sharpen apices and covered with chaetae along. Vinculum thin, ventrally widened into cup-like form. Sacculus elongated, finger-shaped with blunt apex. Cucullus tuber-like, covered with chaetae. Juxta a tiny plate fused with aedeagus. Aedeagus cylindrical with small uneven dorsal sclerotized field right by vesica and ventral c-shaped long basal spur with blunt apex. Vesica bag-shaped with two chambers: smaller lateral and bigger main, both covered with tiny denticles; main one bears cornutus formed by several fused smaller cornuti. **Female remains unknown**, expected to be bigger and darker than male.

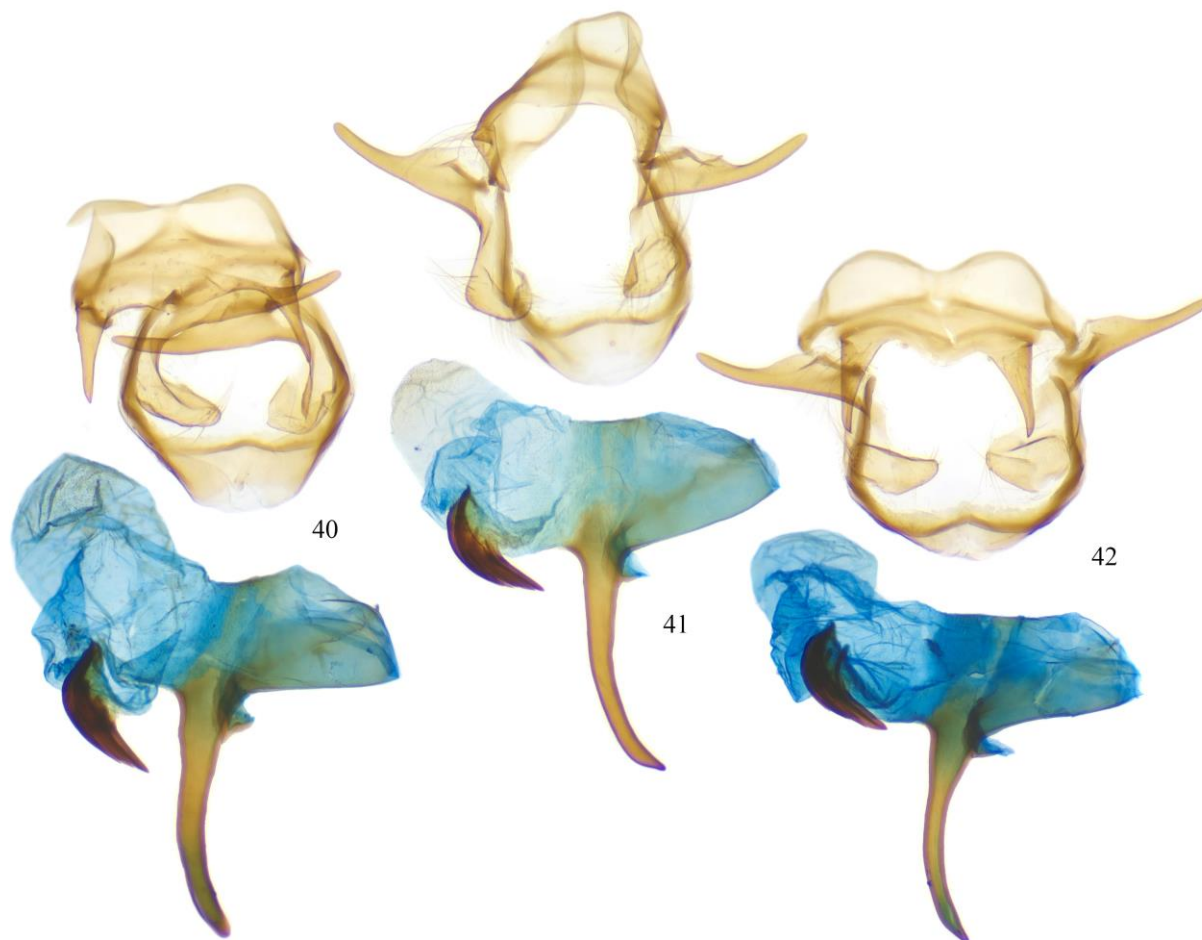


Figures 37–39. Males of *Rh. nicolasroberteaton*, all DRC, Kasaï Prov. 37. Holotype, genitalia slide 0634 (CGM/BUM). 38. Paratype, genitalia slide 0633 (CGM/BUM). 39. Paratype, genitalia slide 0632 (CGM/BUM).

Etymology. The species is named in honour of Nicolas Robert Eaton (East Providence, Rhode Island, USA). Nicolas Robert is nature and sports enthusiast, especially baseball. Soon to be published author and rap music composer.

Distribution. The species is found in two locations in DRC, Kasaï and Mai-Ndombe Province (Figs 50–51).

Biology. Adults were observed and collected in November, December and February. The only known habitat is tropical moist broadleaf forests with rare mosaic grassland patches, the elevation is around 100 m above sea-level. One paratype male was collected on the border between forest and grassland in an area of one hectare using an auto-trap (Figs 53–55). The larval foodplant remains unknown.



Figures 40–42. Male genitalia of *Rh. nicolasroberteaton*, all DRC, Kasai Prov. 40. Holotype, genitalia slide 0634 (CGM/BUM). 41. Paratype, genitalia slide 0633 (CGM/BUM). 42. Paratype, genitalia slide 0632 (CGM/BUM).

***Rhynchobombyx arijakefriend* Prozorov, Saldaitis & Müller sp. n.**

<http://zoobank.org/urn:lsid:zoobank.org:act:AF8466D0-D98F-40ED-A6E9-468B37DA4056>

(Figs 43–44, 48)

Type material: HOLOTYPE ♂, DRC, [Haut-Uele Prov., Isiro] Uele: Paulis, 1.VIII.1959, genitalia slide GU 2011-152 (RMCA).

Diagnosis. Almost diagonal smooth postmedial line differs the species from the others.

Description. Male habitus (Fig. 43). Head and thorax reddish brown, abdomen yellow. Thorax dorsally bears triangular dark brown spot with pale center. Forewing length: 13 mm; wingspan: 28 mm. Wing oval-shaped, apex obtuse, external margin smooth. Background color reddish brown, darkens to brown towards the apex and brightens to greenish brown by tornal angle. Pattern consists of doubled dark brown and greenish brown crenulate antemedial and smooth postmedial lines; and blackish discal dot on R-Cu cell outer margin. Cilia reddish brown. Hindwing oval-shaped, external margin rounded, slightly waved. Main color yellowish, costal and tornal fields darker. Cilia reddish brown. **Male genitalia** (Fig. 44). Tegumen band-shaped, bears two short projections with sharpen apices and covered with chaetae along. Vinculum thin, ventrally widened into cup-like form. Sacculus elongated, finger-shaped with blunt apex. Cucullus tubercle-like, covered with chaetae. Juxta a tiny plate fused with aedeagus. Aedeagus cylindrical with small uneven dorsal sclerotized field right by vesica and ventral c-shaped long basal spur with blunt apex. Vesica bag-shaped with two chambers: smaller lateral and bigger main, both covered with tiny denticles; main one bears

cornutus formed by several fused smaller cornuti. **Female remains unknown**, expected to be bigger and darker than male.



Figure 43. Adult of *Rh. arijakefriend*, male holotype, DRC, Haut-Uele Prov., genitalia slide GU 2011-152 (RMCA).

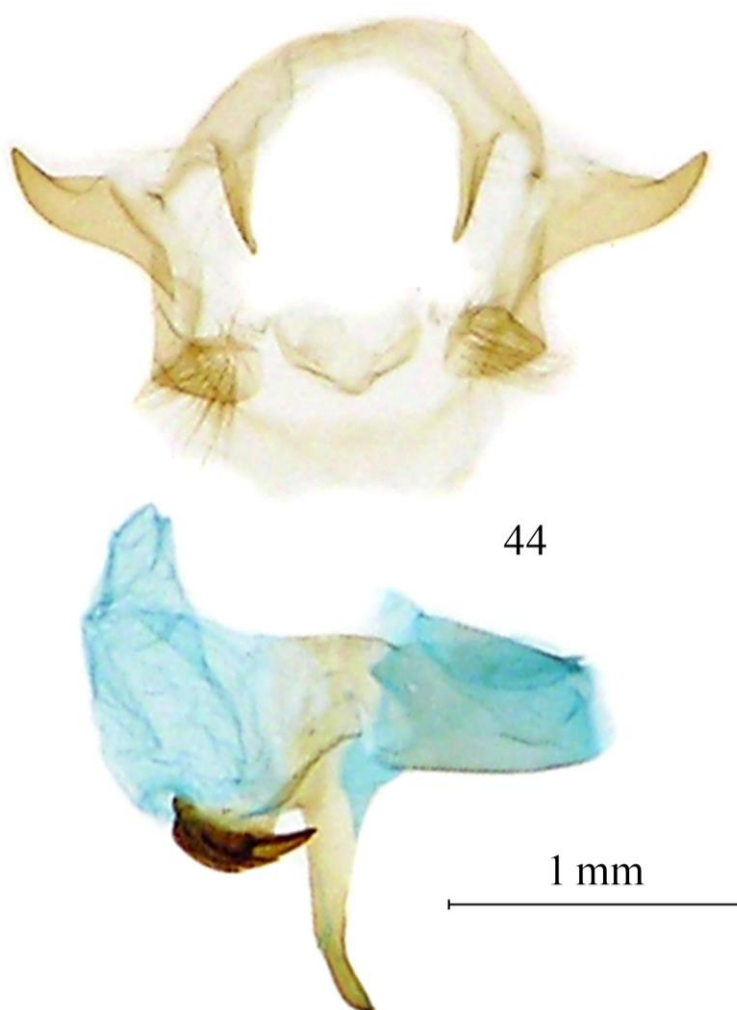


Figure 44. Genitalia of *Rh. arijakefriend*, male holotype, DRC, Haut-Uele Prov., genitalia slide GU 2011-152 (RMCA).

Etymology. The species is named in honour of Ari Jake Friend (Merrick, New York, USA). Ari Jake is nature lover, outdoorsman, loves to fish and explore for minerals. He is sports enthusiast: plays baseball, basketball and flag football.

Distribution. The species is found in DRC, Haut-Uele (Fig. 48).

Biology. Adult was collected in August. The only known habitat is tropical moist broadleaf forests with rare mosaic grassland patches, the elevation is around 800 m above sea-level. The larval foodplant remains unknown.

***Rhynchobombyx madisonellafriend* Prozorov, Saldaitis & Müller sp. n.**

<http://zoobank.org/urn:lsid:zoobank.org:act:811929C3-6546-46C9-87D0-71133845E04E>

(Figs 45–46, 51)

Type material: HOLOTYPE ♀, DRC, [Kasaï Prov.] Kasaï-Occidental Prov., NE Ilebo and Kasai River, XI.1997, genitalia slide 0630 (CGM/BUM).

Diagnosis. Externally the species differs from the others by dark smooth blurred medial lines.

Description. Female habitus (Fig. 45). Head, thorax and abdomen brown. Thorax dorsally bears triangular dark brown spot with pale center. Forewing length: 15 mm; wingspan: 31 mm. Wing oval-shaped, apex obtuse, external margin slightly waved. Background color reddish brown, darkens between medial lines around lighter eye with blackish discal dot, external field darker too. Pattern consists of dark brown smooth blurred antemedial and postmedial lines, dark brown fragmented external line. Cilia brown. Hindwing oval-shaped, external margin rounded, waved. Main color brown, darkens caudally; pronounced darker blurred medial line. Cilia brown. **Female genitalia** (Fig. 46). Papillae anales oval, densely covered with chaetae. Posterior apophyses little longer than anterior. Lamella antevaginalis membranous, lamella postvaginalis sclerotized, laterally thinned. Ductus bursae about one third size of corpus bursae, wrinkled, laterally sclerotized. Corpus bursae elongated, membranous, wrinkled. **Male remains unknown**, expected to be smaller and lighter than female.

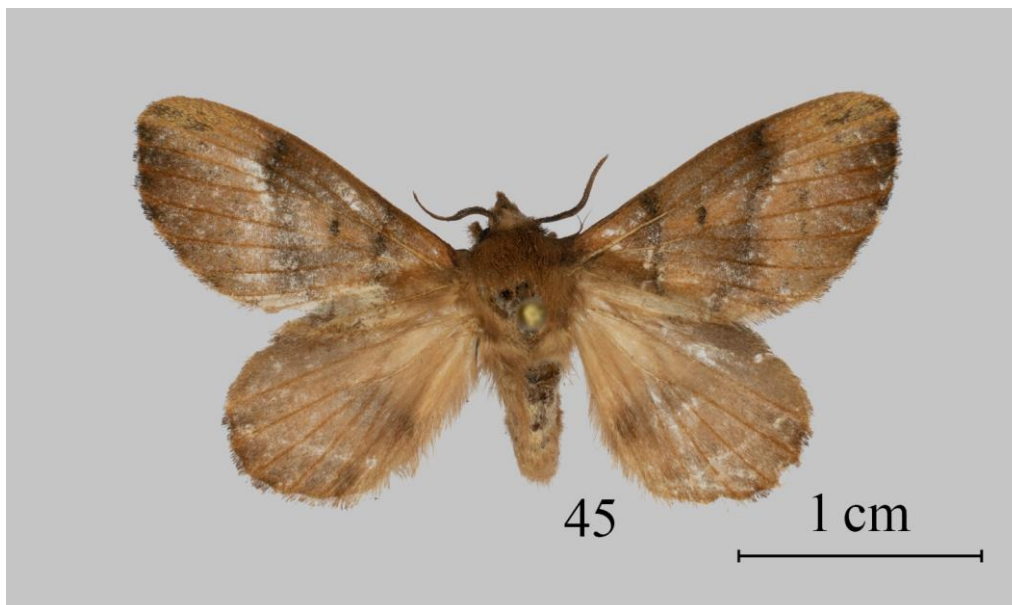


Figure 45. Adult of *Rh. madisonellafriend*, female holotype, DRC, Kasaï Prov., genitalia slide 0630 (CGM/BUM).

Etymology. The species is named in honour of Madison Ella Friend (Merrick, New York, USA). Madison Ella is nature lover and talented dancer and gymnast. She is creative and makes own clothes and jewelry.

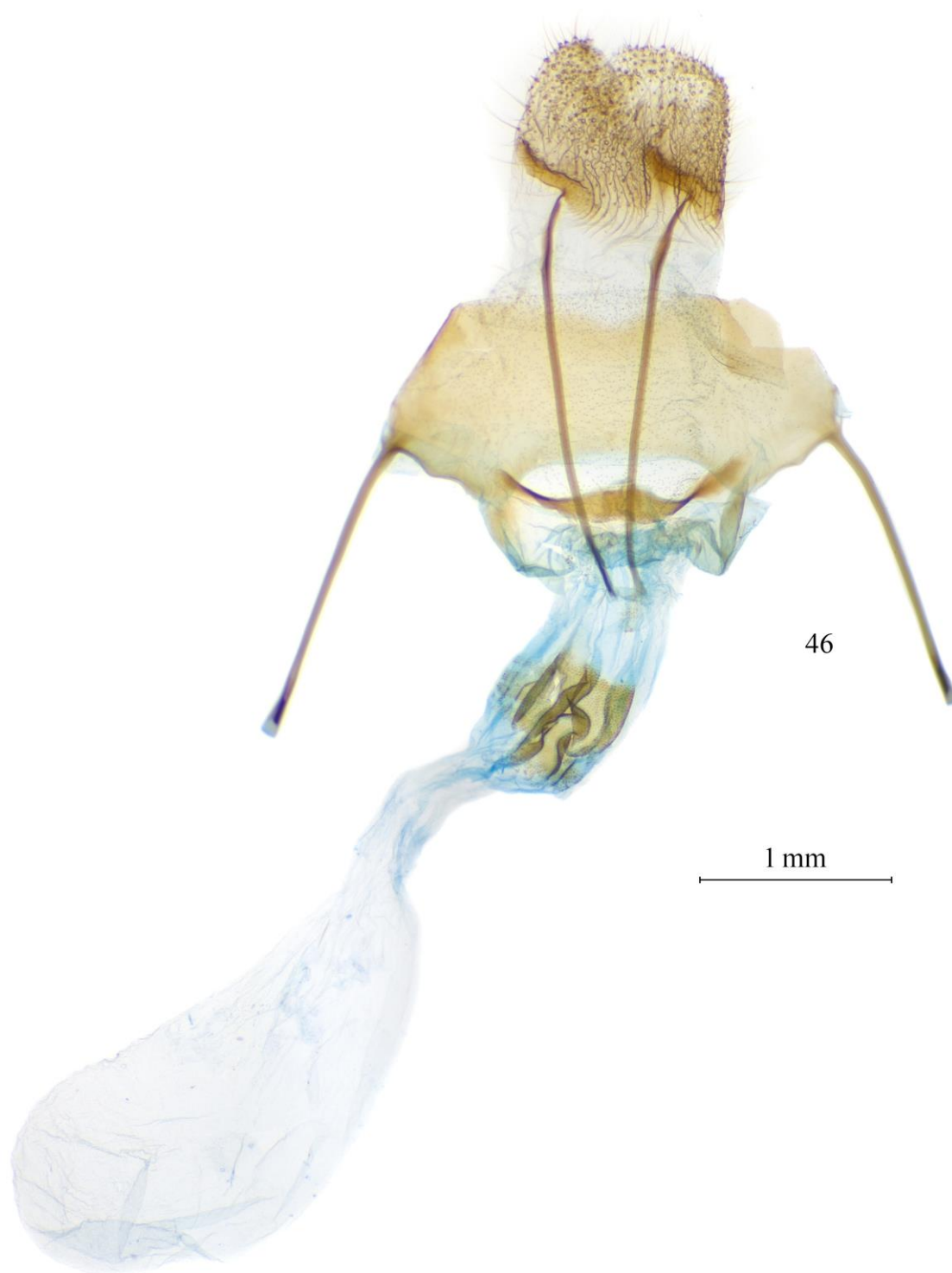
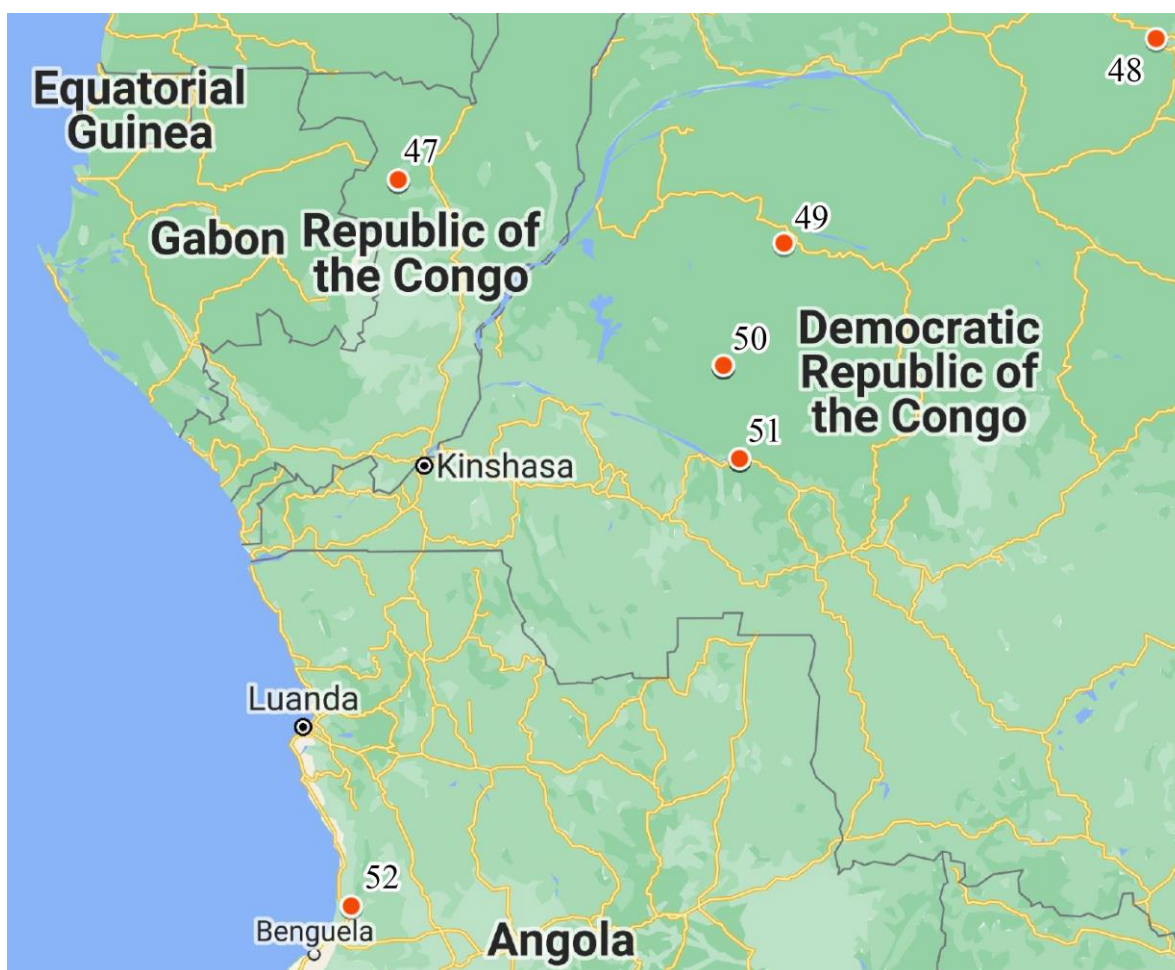


Figure 46. Genitalia of *Rh. madisonellafriend*, female holotype, DRC, Kasai Prov., genitalia slide 0630 (CGM/BUM).

Distribution. The species is found in DRC, Kasai Province (Fig. 51).

Biology. Adult was collected in November. The only known habitat is tropical moist broadleaf forests with rare mosaic grassland patches (Figs 53–55), the elevation is around 100 m above sea-level. The larval foodplant remains unknown.



Figures 47–52. Collecting areas of *Rhynchobombyx* spp. 47. Congo, Cuvette-Ouest Dept., Odzala-Kakoua Nat. Park, 400–500 m, 0°23'N, 14°50'E. 48. DRC, Haut-Uele Prov., Isiro. 49. DRC, Tshuapa Prov., Lomela River, Gombe-Isongo. 50. DRC, Mai-Ndombe Prov., Ekongo camp, 02°45'23.09"S, 20°18'55.37"E. 51. DRC, Kasai Prov., NE Ilebo and Kasai River. 52. Angola, Benguela Prov., rd. Londengo–Sumbe, ca. 80 km S Sumbe, 10 km rd. to Bumba, 280 m, 11°47'33.1"S, 14°02'17.4"E. Available from: https://www.google.com/maps/d/edit?mid=1meQVvKsMY8Qvp5cJBC2dwi_clX6l-cOD&usp=sharing [Accessed 10.XII.2021].

Acknowledgements

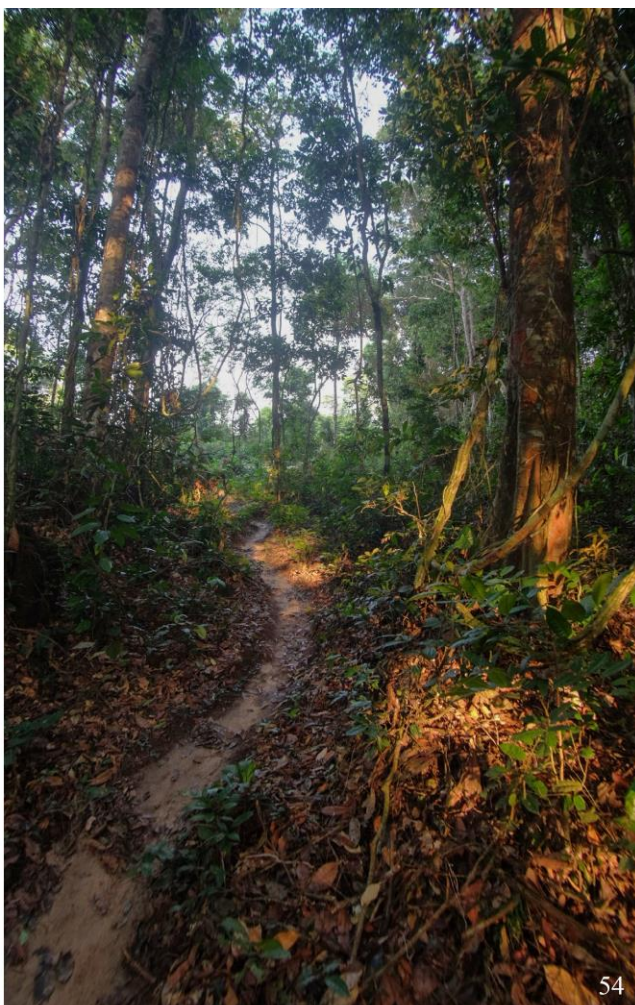
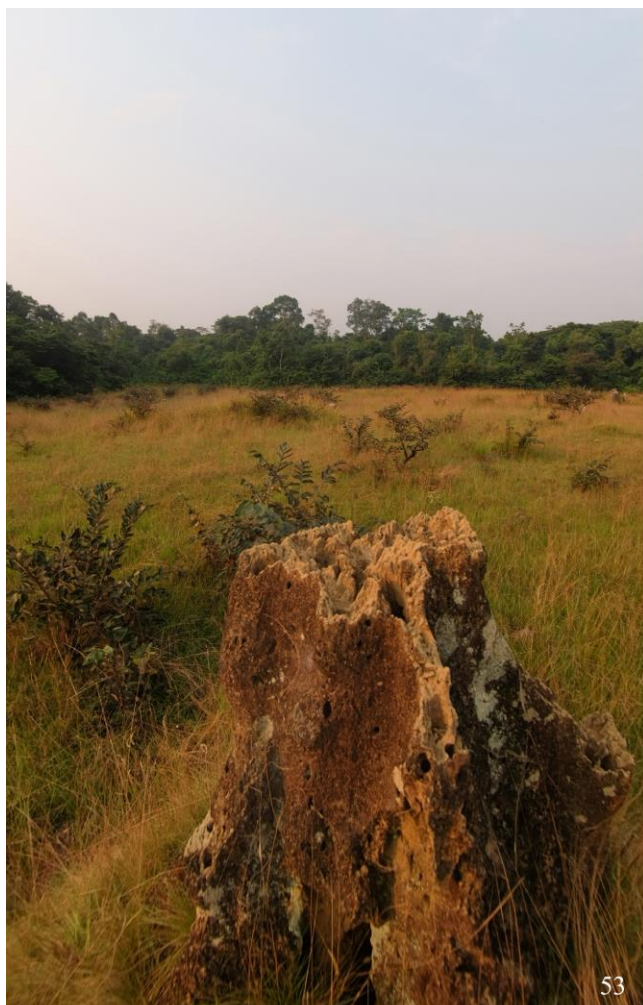
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Figures 53–55. View on the one hectare grassland patch (53) surrounded by forest (54) near the Ekongo camp, Mai-Ndombe Prov., DRC (55).

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