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Two new species of the genus *Rhynchobombyx* from Central and East Africa (Lepidoptera, Lasiocampidae, Lasiocampinae)

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Abstract

Two new species of the genus *Rhynchobombyx* Aurivillius, 1909 (type-species *Rhynchobombyx nasuta* Aurivillius, 1909): *Rhynchobombyx levi* sp. n. from Tanzania, Malawi, Democratic Republic of the Congo, Zimbabwe, and South Africa; and *Rhynchobombyx maddox* sp. n. from Angola are described. *Rhynchobombyx nasuta* Aurivillius, 1909 is recorded for the first time for Central African Republic. The new species are compared with all known species of the genus.

Key words: Afrotropical realm, Angola, biodiversity, Central African Republic, Congo, Democratic Republic of the Congo, lappet moth, Malawi, new record, South Africa, Tanzania, Zimbabwe.

Introduction

The family Lasiocampidae Harris, 1841 is a sole member of the superfamily Lasiocampoidea (Minet, 1994; Regier *et al.*, 2009; Zwick *et al.*, 2011; Hamilton *et al.*, 2019). The last discovery in the suprageneric system of the family was done by Zolotuhin with co-authors (2012a, 2012b) based on the nucleotide sequence of the gene elongation factor-1 alpha. The family resulted in containing five subfamilies and 14 tribes, among which Argudini Zolotuhin, 2012 was established new and briefly described for eleven Indomalayan and one African genera. Lees & Minet (2022) in the note on Madagascan Lasiocampidae legitimately state that “tribes are not yet clearly established,” though the statement is applicable to the whole family.

Lasiocampidae occur worldwide, except in New Zealand. According to Zolotuhin (2015), among the eight biogeographic realms on Earth, the most diverse fauna of the family Lasiocampidae is in the Afrotropical realm. The fauna is represented by more than 700 species in 115 genera, while about 100 species and 20 genera are yet to be discovered. The Afrotropical fauna shares the genus *Bombycopsis* Felder & Felder, 1874 with the Palearctic realm (see Joannou & Krüger, 2009); and *Estigena* Moore, 1860; *Trabala* Walker, 1856 and *Streblote* Hübner, 1820 with the Indomalayan realm (see Prozorov, 2011; Prozorov *et al.*, 2022).

The Afrotropical genus *Rhynchobombyx* Aurivillius, 1909 was reviewed by Prozorov with co-authors (2021a). Seven new species were added to the type species *Rhynchobombyx nasuta* Aurivillius, 1909: *Rhynchobombyx gavinfilippone* Prozorov, Saldaitis & Müller, 2021; *Rhynchobombyx avadomenicaroccio* Prozorov, Saldaitis & Müller, 2021; *Rhynchobombyx julianjameseaton* Prozorov, Saldaitis & Müller, 2021; *Rhynchobombyx anthonychristophereaton* Prozorov, Saldaitis & Müller, 2021; *Rhynchobombyx nicolasroberteaton* Prozorov, Saldaitis & Müller, 2021; *Rhynchobombyx arijakefriend* Prozorov, Saldaitis & Müller, 2021; and *Rhynchobombyx madisonellafriend* Prozorov, Saldaitis & Müller, 2021. The new species originated from few collecting sites within the Congolian forests ecoregions. Altogether, we described 40 new lasiocampid species from the region, revealing its hidden species richness (Zolotuhin & Prozorov 2010; Prozorov & Zolotuhin, 2012a, 2012b; Prozorov, 2016a, 2016b; Prozorov & Zolotuhin, 2016; Prozorov *et al.*, 2021a, 2021b, 2023a, 2023b, 2023c, 2023d). Here we add two more species of *Rhynchobombyx* found in the areas outside the Congolian forests.

Abbreviations of the depositories used:

- CAC** – collection of Alexandre Cipolla (Grivegnée, Belgium);
- CAS** – collection of Anton Skrobotov (Moscow, Russia);
- CGM** – collection of Günter Müller (Freising, Germany);
- DMNH** – Ditsong National Museum of Natural History (Pretoria, RSA);
- MfNB** – Museum für Naturkunde (Berlin, Germany);
- NHMO** – Natural History Museum, University of Oslo (Oslo, Norway);
- NHMZ** – Natural History Museum of Zimbabwe (Bulawayo, Zimbabwe);
- RMCA** – Royal Museum for Central Africa (Tervuren, Belgium);
- USTTB** – University of Sciences, Techniques and Technologies of Bamako (Mali).

Other abbreviations used:

- CAR** – Central African Republic;
- DRC** – Democratic Republic of the Congo;
- GS** – genitalia slide;
- HT** – holotype;
- PT** – paratype;
- RSA** – Republic of South Africa.

Material and methods

Genitalia preparations were made generally following Hardwick (1950). Distal one third of the abdomen of each specimen was put into a separate 50 ml Falcon tube with 10 ml of 13% solution of potassium hydroxide (KOH). Several tubes with abdomens and KOH were placed into a small pot with hot water for 20 minutes. The tubes thereafter were removed from the pot and the abdomens were rinsed with water several times to remove any remaining scales and soft tissue. Cleaned abdomens were then transferred into separate cells of the Corning Costar 96 Well Cell Culture Cluster with a small quantity of water to keep them moist during preparation. Sequentially, abdomens were cleaned with a soft brush and dissected using Dumont Tweezers Style 5 and “no name” micro scissors in a Petri dish under the microscope. Aedeagus was extracted and vesica everted with an insulin syringe and a 32G or 33G needle for mesotherapy. Male’s vesica was stained with the Evans blue. The dissected genitalia were rinsed in 50, 70 and 96% ethanol and then mounted on a microscope slide in Euparal and covered with a cover slip. Slides were then photographed using an Olympus C-750 UZ and a Leica MC170 HD.

Adults were photographed with an Olympus C-750 UZ, a Nikon D3300, a Nikon 40mm f/2.8G and a Nikon R1C1. Slides were photographed using an Olympus C-750 UZ and a Leica MC170 HD. All images were processed with Photoshop CS6 and InDesign CS6 (Adobe, 2012).

Morphological terminology follows Zolotuhin (2015) and Prozorov *et al.* (2021a). Distribution maps were made with Google My Maps service (<https://www.google.com/maps/>). Altitude for collecting sites was taken from Google Earth Pro if missing from labels. Ecoregions listed in the Distribution section of the species follow Dinerstein *et al.*, 2017.

Taxonomical part

Rhynchobombyx levi sp. n.

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(Figs 1–12, 28–30, 39, 41, 46–48)

Holotype: ♂, Malawi, Lilongwe District, Dzalanyama Ranch, 14.21666 S, 33.5 E, 1220 m, 29.I.2005, leg. R. J. Murphy, GS 0625 (CGM/USTTB). **Paratypes** (39♂, 8♀). **Tanzania:** ♂, Biharamulo District, Nyakanazi, 3.03556 S, 31.2197 E, 1245 m, 17.III.1990, leg. Bjørnstad, GS 2012-021 (NHMO); ♀, Mpanda District, 33 km S Uvinza, 1450 m, 13.X.1989, leg. Bjørnstad (NHMO). **Malawi:** ♂, same data as HT (CGM/USTTB); ♀, Mzimba District, Mzuzu, Nkhorongo, 11.38333 S, 33.98333 E, 1375 m, 18.II.2000, leg. R. J. Murphy, GS 0626 (CGM/USTTB); ♂, Northern Province, Karonga District, Vinthukutu Forest, 646 m, 10.41666 S, 34.18333 E, 29.XI.2000, leg. R. J. Murphy, GS Las-24 (DMNH). **DRC, Haut-Katanga Province:** ♂, Luina River, Kibomboma, 12.IX.1989, leg. Th. Bouyer, GS 2011-153 (RMCA); 8♂, Mikembo, 11.469806 S, 27.669333 E, 1175 m, 19.IX.2022, 22.IX.2022, GS LazLas027 (CAC); 2♂, Mikembo, 11.469806 S, 27.669333 E, 1175 m, 26.II.2022, leg. A. Cipolla (CAC); ♂, Kipushi, Karibu, 11.482778 S, 27.861972 E, 1148 m, 27.III.2022, leg. A. Cipolla (CAC); ♂, Kipushi, Kisamfu area, 10.660556 S, 25.918333 E, 1464 m, 2.XII.2022, leg. Th. Bouyer (CAC). **Zimbabwe:** ♂, Bulawayo, Shangani, Naletale, 19.88278 S, 29.52527 E, 1410 m, 20.XII.2011, leg. Snižek, GS 0627 (CGM/USTTB); 2♂, Harare, 17.82162 S, 31.04922 E, 1490 m, [label data incomplete], leg. N. J. Duke, GS Las-25 (DMNH); 2♂, Harare, Christon Bank, 17.60637 S, 31.00197 E, 1405 m, 1.XII.1994, leg. N. J. Duke, GS Las-25 (DMNH); 2♂, Mutare, Vumba Mts, 19.11994 S, 32.77675 E, 1650 m, [label data incomplete] (NHMZ); ♂, Mutare District, [label data incomplete] (NHMZ); 10♂, ♀, Harare, 17.82162 S, 31.04922 E, 1490 m, IV.1963, III.1965, 31.V.1965, III.1969, GS Las-15, Las-16, Las-17, Las-19 (NHMZ); 2♂, 4♀, Marondera, [label data incomplete], 18.18851 S, 31.54874 E, 1665 m, GS Las-18 (NHMZ); 2♂, Hahare [?, label data incomplete] (NHMZ); ♂, Mutare District, Bunga Forest, 19.13366 S, 32.75201 E, 1250 m, 22.VI.1990, leg. Bjørnstad (NHMO); ♂, Mashonaland East Province, 12 km E Marondera, Gosho Park, 18.170556 S, 31.627778 E, 1635 m, 11.IV.2011, leg. R. Yakovlev (CAS). **RSA:** ♀, Lundi, 25.2135 S, 31.09369 E, 725 m, [label data incomplete] (DMNH).

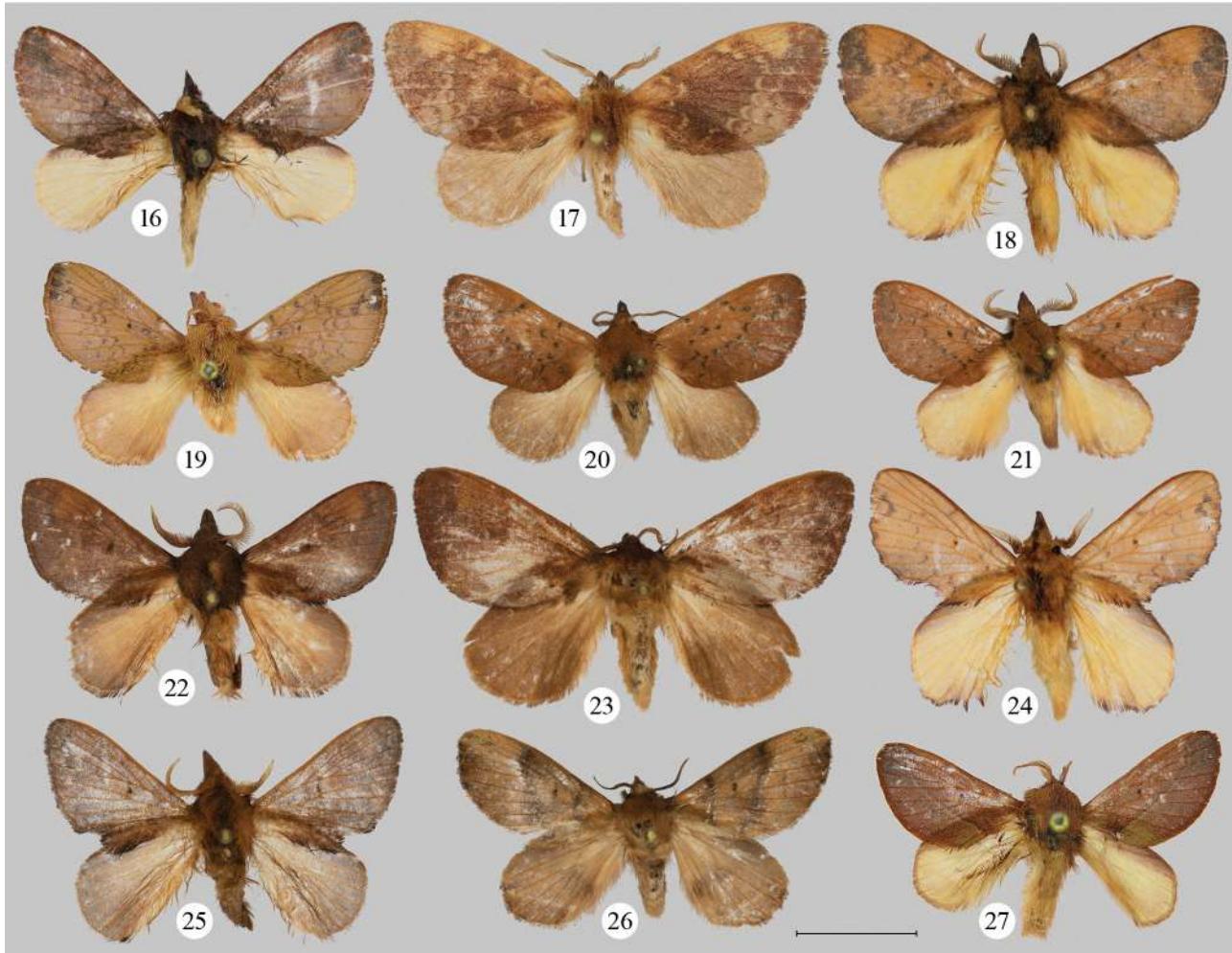


Figures 1–15. Adults of *Rhynchobombyx* spp. 1–12. *Rh. levi* sp. n. 1. HT ♂, Malawi, Dzalanyama Ranch, GS 0625 (CGM/USTTB). 2. PT ♀, Malawi, Nkhorongo, GS 0626 (CGM/USTTB). 3. PT ♂, Malawi, Vinthukutu Forest, GS Las-24 (DMNH). 4. PT ♂, Malawi, Dzalanyama Ranch (CGM/USTTB). 5. PT ♀, Tanzania, 33 km S Uvinza (NHMO). 6. PT ♂, Tanzania, Nyakanazi, GS 2012-021 (NHMO). 7–8. PT ♀ and ♂, Zimbabwe, Harare, GS Las-16, Las-15 (NHMZ). 9. PT ♀, Zimbabwe, Harare, GS 0627 (CGM/USTTB). 10. PT ♂, Zimbabwe, Harare, GS Las-25 (DMNH). 11. PT ♂, DRC, Kibomboma, GS 2011-153 (RMCA). 12. PT ♂, DRC, Lubumbashi, GS LazLas027 (CAC). 13–15. *Rh. maddox* sp. n., ♂, Angola (CGM/USTTB) 13. HT, 80 km E Quibala, GS 0628. 14. PT, Serra do Dembi, GS 1285. 15. PT, between Ganda and Dende, GS 1286. Scale bar – 1 cm.

Description. Male (Figs 1, 3–4, 6, 8, 10–12). Head and thorax reddish brown with longitudinal greyish line. Abdomen cream-colored. **Forewing.** Forewing length: 13–14 mm. Semilanceolate, apex obtuse, external margin smooth. Background color reddish brown. Pattern consists of dark brown crenulate antemedial, postmedial and external lines, and dark discal dot on R-Cu cell outer margin. Cilia speckled brown and grey. **Hindwing.** Oval-shaped, external margin rounded, slightly waved. Cream-colored, costal and tornal fields darker. Cilia brownish. **Male genitalia** (Figs 28, 39). Tegumen band-shaped, dorsolaterally bears a pair of sclerotized socii with blunt apexes, covered with setae. Vinculum thin, ventrally widened into cup-like form.

Sacculus elongated, finger-like, c-shaped with blunt apex. Cucullus tubercle-like, covered with chaetae. Juxta fused with aedeagus. Aedeagus cylindrical with uneven dorsal sclerotized field and ventrobasal rather s-shaped spur. Vesica bag-shaped. **Female** (Figs 2, 5, 7, 9). Forewing length: 16–17 mm. Pattern similar to male, but hindwings darker. **Female genitalia** (Figs 29–30, 41). Papillae anales semispherical, densely covered with chaetae. Posterior apophyses about one third longer than anterior ones. Lamella antevaginalis wrinkled, semimembranous, medially cup-like fitting ventoapical spur of male's aedeagus. Lamella postvaginalis a narrow w-shaped band. Ductus bursae uneven, wrinkled, inflated. Corpus bursae elongated, membranous, wrinkled. Ductus bursae and corpus bursae together reach impressive 14 mm length.

Variability. Background color of forewings may be lighter (Figs 5, 11) or darker (Figs 4, 9). Socii may be pointed (Fig. 28) or rounded (Fig. 39) apically.



Figures 16–27. Adults of *Rhynchobombyx* spp. (CGM/USTTB, except 17 – MfNB, 19 and 27 – RMCA). 16–18. *Rh. nasuta*. 16. ♂, Angola, 10 km to Bumba, GS 0629. 17. ♀, CAR, Mongoumba, GS 2017-031. 18. ♂, DRC, Ekongo camp, GS 0639. 19. *Rh. gavinfilippone*, HT ♂, DRC, Isiro, GS 2011-167. 20–21. *Rh. avadominicaroccio*, PT ♀ and HT ♂, DRC, Ekongo camp, GS 0618 and 0615. 22–23. *Rh. julianjameseaton*, HT ♂ and PT ♀, DRC, Ekongo camp, GS 0620 and 0624. 24. *Rh. anthonychristophereaton*, HT ♂, DRC, Ekongo camp, GS 0636. 25. *Rh. nicolasroberteaton*, HT ♂, DRC, Ekongo camp, GS 0634. 26. *Rh. madisonellafriend*, HT ♂, DRC, Ekongo camp, GS 0630. 27. *Rh. arijakefriend*, HT ♂, DRC, Isiro, GS 2011-152. Scale bar – 1 cm.

Diagnosis. Adults of *Rh. levi* sp. n. have reddish brown forewings with low contrast pattern (Figs 1–12), shorter bursa, lack sclerotized band around ductus (Figs 29–30, 41), and distributed in Eastern Africa and Katanga Province, DRC (Fig. 48); while adults of *Rh. nasuta* have orange to brown forewings with darker contrasting pattern (Figs 16–18), longer bursa, sclerotized band around ductus (Fig. 45), and distributed in Angola, Congo, and Tshuapa and Mai-Ndombe Provinces, DRC, and CAR (**new record**).



Figures 28–31. Genitalia of *Rhynchobombyx* spp. 28–30. *Rh. levi* sp. n. (CGM/USTTB). 28. HT ♂, Malawi, Dzalanyama Ranch, GS 0625. 29. PT ♀, Malawi, Nkhorongo, GS 0626. 30. PT ♀, Zimbabwe, Harare, GS 0627. 31. *Rh. maddox* sp. n., HT ♂, Angola, 80 km E Quibala, GS 0628. Scale bar – 1 mm.

Adult males of *Rh. levi sp. n.* have reddish brown forewings (Figs 1, 3–4, 6, 8, 10–12), lack cornutus on vesica (Figs 28, 39), and distributed in Eastern Africa and Katanga Province, DRC (Fig. 48); while adult males of *Rh. gavinfilippone* have orangish forewings (Fig. 19), cornutus on vesica (Fig. 33), and distributed in Haut-Uele Province, DRC.

Adults of *Rh. levi sp. n.* have reddish brown forewings (Figs 1–12), short socii, c-shaped cucullus, tubercle-like sacculus (Figs 28, 39), narrow membranous ductus (Figs 29–30, 41), and distributed in Eastern Africa and Katanga Province, DRC (Fig. 48); while adult males of *Rh. avadomenicaroccchio* have orangish brown forewings (Figs 20–21), elongated claw-like socii, cucullus, and sacculus (Fig. 36), expanded sclerotized ductus (Fig. 44), and distributed in Kasaï and Mai-Ndombe Provinces, DRC.

Adults of *Rh. levi sp. n.* have reddish brown forewings (Figs 1–12), lack cornutus on vesica (Figs 28, 39), have narrow membranous ductus and long bursa (Figs 29–30, 41), and distributed in Eastern Africa and Katanga Province, DRC (Fig. 48); while adult males of *Rh. julianjameseaton* have brown forewings (Figs 22–23), cornutus on vesica (Fig. 35), wide sclerotized ductus and short bursa (Fig. 42), and distributed in Congo and Kasaï and Mai-Ndombe Provinces, DRC.

Adult males of *Rh. levi sp. n.* have reddish brown forewings with smooth outer margin (Figs 1, 3–4, 6, 8, 10–12), overall smaller genitalia (Figs 28, 39), and distributed in Eastern Africa and Katanga Province, DRC (Fig. 48); while adult males of *Rh. anthonychristophereaton* have orange forewings with concavity between CuA₂ and 1A (Fig. 24), overall larger genitalia (Fig. 38), and distributed in Kasaï and Mai-Ndombe Provinces, DRC.

Adult males of *Rh. levi sp. n.* have smooth outer margin of forewings (Figs 1, 3–4, 6, 8, 10–12), lack cornutus on vesica (Figs 28, 39), and distributed in Eastern Africa and Katanga Province, DRC (Fig. 48); while adult males of *Rh. nicolasrobertteaton* have concavity between CuA₂ and 1A on forewings (Fig. 25), cornutus on vesica (Fig. 32), and distributed in Kasaï and Mai-Ndombe Provinces, DRC.

Adult males of *Rh. levi sp. n.* have crenulated postmedial lines on forewings (Figs 1, 3–4, 6, 8, 10–12), lack cornutus on vesica (Figs 28, 39), and distributed in Eastern Africa and Katanga Province, DRC (Fig. 48); while adult male of *Rh. arijakefriend* has smooth postmedial line on forewings (Fig. 27), cornutus on vesica (Fig. 34), and distributed in Haut-Uele Province, DRC.

Adult females of *Rh. levi sp. n.* are overall bigger with crenulated dark medial lines on reddish brown forewings (Figs 2, 5, 7, 9), narrow membranous ductus and long bursa (Figs 29–30, 41), and distributed in Eastern Africa and Katanga Province, DRC (Fig. 48); while adult female of *Rh. madisonellafriend* is overall smaller with blurred contrasting medial lines on brown forewings (Fig. 26), has wide sclerotized ductus and short bursa (Fig. 43), and distributed in Kasaï Province, DRC.

Adult males of *Rh. levi sp. n.* have reddish brown forewings (Figs 1, 3–4, 6, 8, 10–12), socii with single apex (Figs 28, 39), and distributed in Eastern Africa and Katanga Province, DRC (Fig. 48); while adult males of *Rh. maddox sp. n.* have brown to reddish brown forewings (Figs 13–15), socii with more or less pronounced two apexes (Figs 31, 40), and distributed in Angola (Fig. 49).

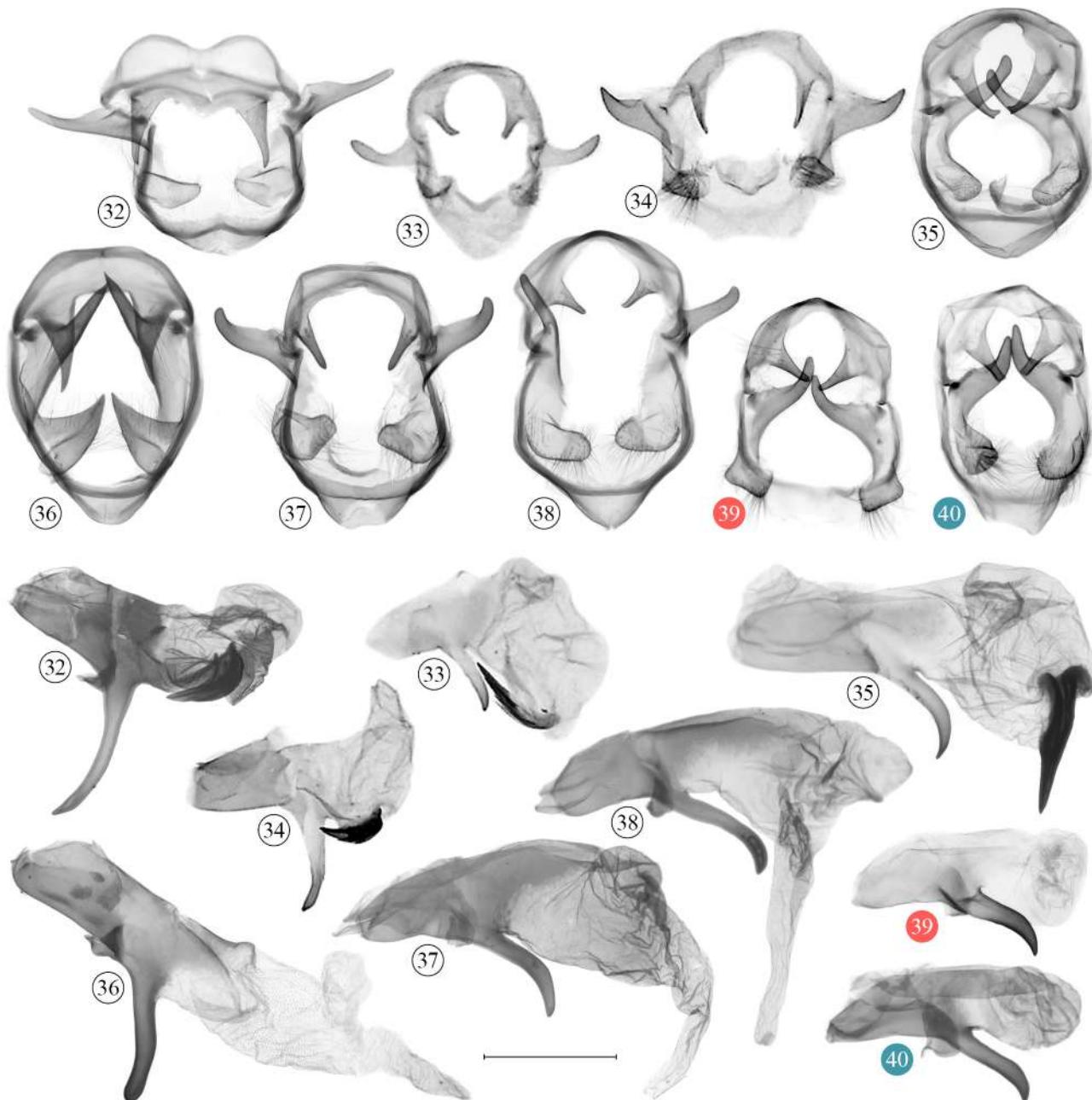
Distribution (Fig. 56). Central Zambezian wet miombo woodlands in Tanzania, Malawi, DRC; dry miombo woodlands and Zambezian-Limpopo mixed woodlands in Zimbabwe; Limpopo lowveld in RSA. Similar wide distribution in East Africa is also known for *Theophasida superba* (Aurivillius, 1915); *Stenophatna marshalli* Aurivillius, 1909; *Stenophatna cymographa* Hampson, 1910; *Stenophatna Rothschildi* (Tams, 1936); *Eucraera salammbo* (Vuillot, 1892); *Odontopacha fenestrata* Aurivillius, 1909; *Soligena juna* Prozorov & Zolotuhin, 2016; *Typhonoya longipennis* Hering, 1941; *Estigena africana* Holland, 1893; *Dollmania cuprea* (Distant, 1897); *Revaya edita* Prozorov *et al.*, 2023 and *Revaya yahya* Prozorov *et al.*, 2023 (Zolotuhin & Prozorov, 2010; Prozorov, 2011; Prozorov, 2016c; Prozorov & Zolotuhin, 2016; Prozorov *et al.*, 2021b, 2023e, 2023f, 2023g).

Biology. Adults were collected in February – June and September – December from an altitude of 646 to 1665 meters a.s.l. Preimaginal stages are unknown.

Etymology. The species is named in honor of Levi Margiotta (Nesconset, USA).

Taxonomic note. We did not manage to document labels of the specimens of *Rh. levi sp. n.* during our visit in 2016 to NHMZ (as unidentified species within *Pseudometa* Aurivillius, 1901) and DMNH (identified as *Pseudometa viola* Aurivillius, 1901 and “Genus_insertum”), but did take overview photos of the drawers

(Figs 46–47). Here we added all specimens from NHMZ and DMNH to the type series regardless whether the label data is complete or not.



Figures 32–40. ♂ genitalia of *Rhynchobombyx* spp. (CGM/USTTB, except 33 and 34 – RMCA, 39 – NHMZ). 32. *Rh. nicolaroberteaton*, PT, DRC, Ekongo camp, GS 0632. 33. *Rh. gavinfilippone*, HT, DRC, Isiro, GS 2011-154. 34. *Rh. arijakefriend*, HT, DRC, Isiro, GS 2011-154. 35. *Rh. julianjameseaton*, PT, DRC, Ekongo camp, GS 0759. 36. *Rh. avadomenicarocchio*, PT, DRC, Ekongo camp, GS 0616. 37. *Rh. nasuta*, DRC, Ekongo camp, GS 0639. 38. *Rh. anthonychristophereaton*, PT, DRC, Ekongo camp, GS 0636. 39. *Rh. levi* sp. n., PT, Zimbabwe, Harare, GS Las-17. 40. *Rh. maddox* sp. n., PT, Angola, Serra do Dembi, GS 1285. Scale bar – 1 mm.

Rhynchobombyx maddox sp. n.

[\(Figs 13–15, 31, 40, 49\)](https://zoobank.org/urn:lsid:zoobank.org:act:76258768-BCDD-4CF7-B0C5-BD373862241E)

Holotype: ♂, **Angola**, Cuanza Sul Province, road Quibala – Mussende, ca. 80 km E Quibala, 10.59547 S, 15.64408 E, 1352 m, 22.XI.2017, leg. S. Naumann, E. Ott & H. Sulak, GS 0628 (CGM/USTTB).
Paratypes, Angola (CGM/USTTB): ♂, Huambo Province, 6 km N Chnigenge, Serra do Dembi, 12.77801 S,

14.90628 E, 1400 m, 26.III.2014, leg. H. Sulak, S. Naumann & E. Ott, GS 1285; ♂, Benguela Province, between Ganda and Dende, 13.12955 S, 14.70055 E, 1210 m, 25.III.2014, leg. H. Sulak, S. Naumann & E. Ott, GS 1286.

Description. Male (Figs 13–15). Head and thorax brown. Abdomen brownish or reddish beige. *Forewing*. Forewing length: 13. Semilanceolate, apex obtuse, external margin slightly waved. Background color brown or reddish brown. Pattern consists of dark brown crenulate antemedial, postmedial and external lines, and dark discal dot on R-Cu cell outer margin. Cilia speckled brown and dark brown. *Hindwing*. Oval-shaped, external margin rounded, slightly waved. Beige, costal and tornal fields darker. Cilia brownish. *Male genitalia* (Figs 31, 40). Tegumen band-shaped, dorsolaterally bears a pair of sclerotized socii with more or less pronounced two apexes. Vinculum thin, ventrally widened into cup-like form. Sacculus elongated, finger-like, c-shaped with blunt apex. Cucullus tubercle-like, covered with chaetae. Juxta fused with aedeagus. Aedeagus cylindrical with uneven dorsal sclerotized field and ventrobasal c-shaped spur with blunt apex. Vesica bag-shaped. **Female** remains unknown.

Variability. Background color of forewings vary from brown (Fig. 13) to reddish brown (Fig. 15). Two apexes of socia may be more (Fig. 40) or less (Fig. 31) pronounced.

Diagnosis. Adult males of *Rh. maddox sp. n.* have brown to reddish brown forewings with low contrast pattern (Figs 13–15), smaller vesica (Figs 31, 40), and distributed in Angola (Fig. 49); while adult males of *Rh. nasuta* have orange to brown forewings with darker contrasting pattern (Figs 16, 18), larger vesica (Fig. 37), and distributed in Angola, Congo, and Tshuapa and Mai-Ndombe Provinces, DRC, and CAR (**new record**).

Adult males of *Rh. maddox sp. n.* have brown to reddish brown forewings (Figs 13–15), lack cornutus on vesica (Figs 31, 40), and distributed in Angola (Fig. 49); while adult males of *Rh. gavinfilippone* have orangish forewings (Fig. 19), cornutus on vesica (Fig. 33), and distributed in Haut-Uele Province, DRC.

Adult males of *Rh. maddox sp. n.* have brown to reddish brown forewings (Figs 13–15), short socii, c-shaped cucullus, tubercle-like sacculus (Figs 31, 40), and distributed in Angola (Fig. 49); while adult males of *Rh. avadomenicaroccchio* have orangish brown forewings (Fig. 21), elongated claw-like socii, cucullus, and sacculus (Fig. 36), and distributed in Kasaï and Mai-Ndombe Provinces, DRC.

Adult males of *Rh. maddox sp. n.* have brown to reddish brown forewings (Figs 13–15), lack cornutus on vesica (Figs 31, 40), and distributed in Angola (Fig. 49); while adult males of *Rh. julianjameseaton* have brown forewings (Fig. 22), cornutus on vesica (Fig. 35), distributed in Congo, and Kasaï and Mai-Ndombe Provinces, DRC.

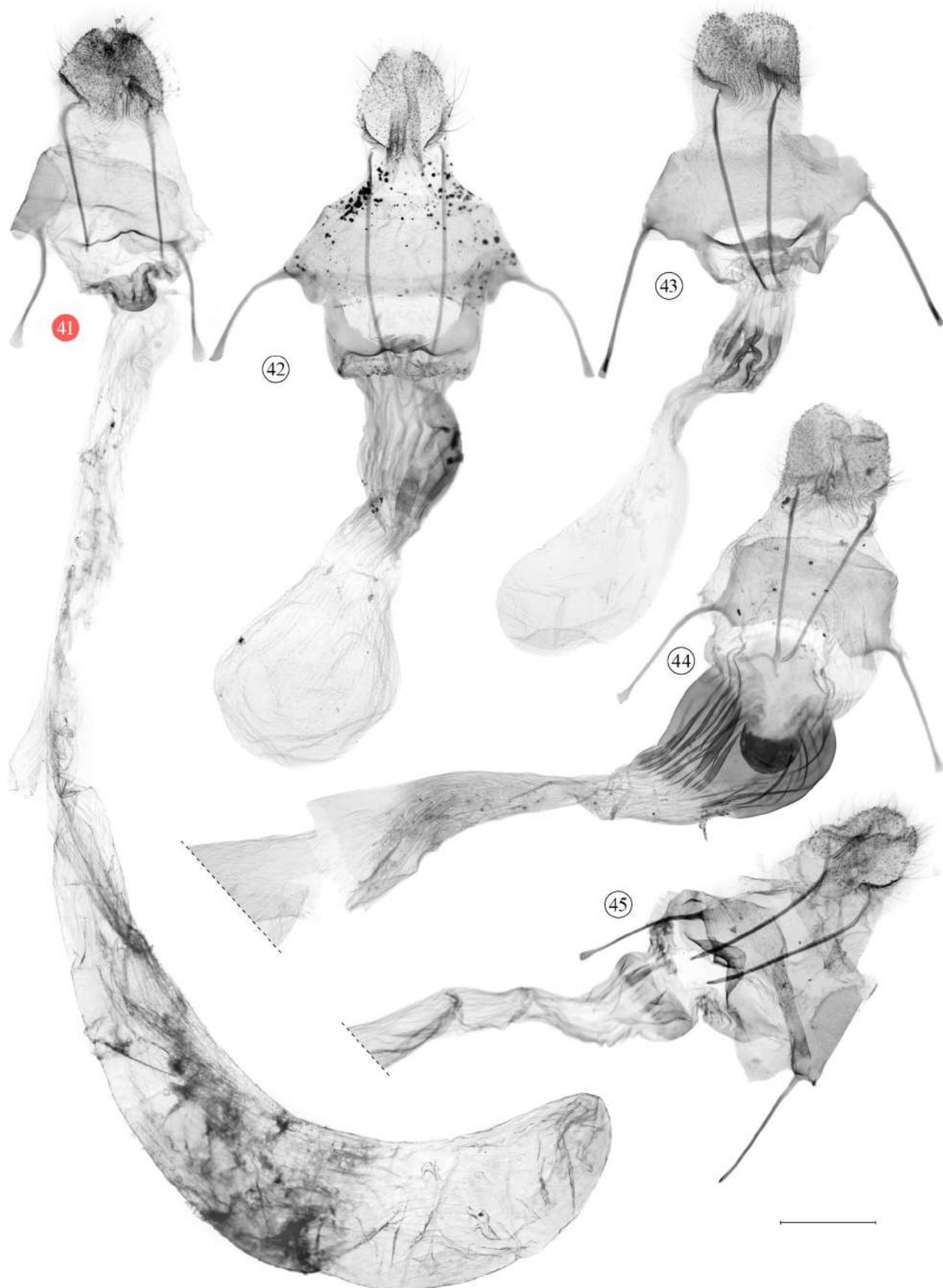
Adult males of *Rh. maddox sp. n.* have brown to reddish brown forewings with smooth outer margin (Figs 13–15), overall smaller genitalia (Figs 31, 40), and distributed in Angola (Fig. 49); while adult males of *Rh. anthonychristophereaton* have orange forewings with concavity between CuA₂ and 1A (Fig. 24), overall larger genitalia (Fig. 38), and distributed in Kasaï and Mai-Ndombe Provinces, DRC.

Adult males of *Rh. maddox sp. n.* have smooth outer margin of forewings (Figs 13–15), lack cornutus on vesica (Figs 31, 40), and distributed in Angola (Fig. 49); while adult males of *Rh. nicolasroberteaton* have concavity between CuA₂ and 1A on forewings (Fig. 25), cornutus on vesica (Fig. 32), and distributed in Kasaï and Mai-Ndombe Provinces, DRC.

Adult males of *Rh. maddox sp. n.* have crenulated postmedial lines on forewings (Figs 13–15), lack cornutus on vesica (Figs 31, 40), and distributed in Angola (Fig. 49); while adult male of *Rh. arijakefriend* has smooth postmedial line on forewings (Fig. 27), cornutus on vesica (Fig. 34), and distributed in Haut-Uele Province, DRC.

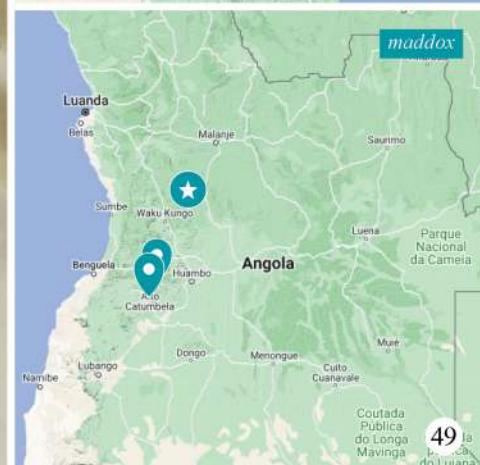
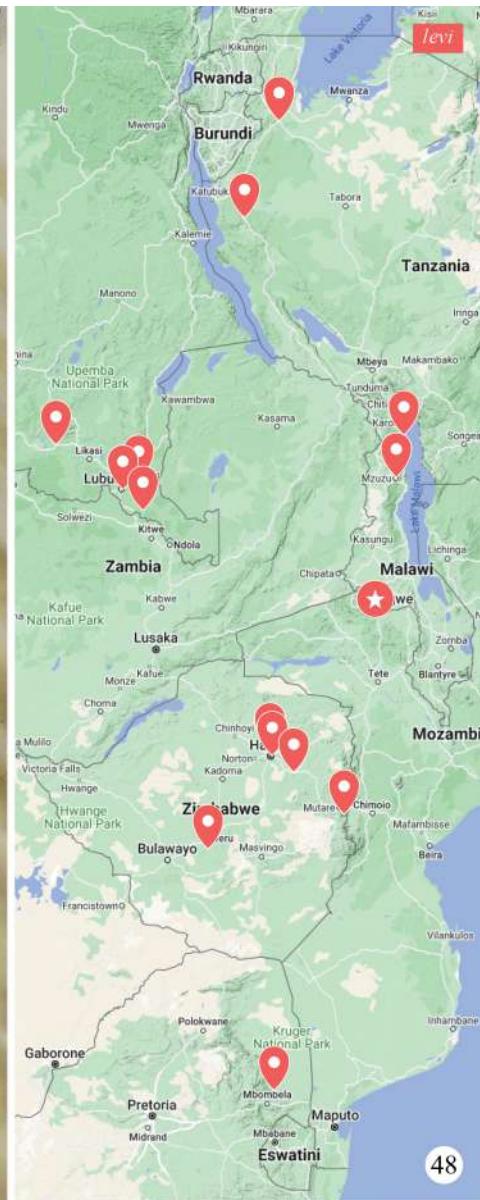
Adult females of *Rh. maddox sp. n.* remain unknown but expected to have low-contrast pattern and be distributed in Angola (Fig. 49); while adult female of *Rh. madisonellafriend* has blurred contrasting medial lines on forewings (Fig. 26), and distributed in Kasaï Province, DRC.

Adult males of *Rh. maddox sp. n.* have brown to reddish brown forewings (Figs 13–15), socii with more or less pronounced two apexes (Figs 31, 40), and distributed in Angola (Fig. 49); while adult males of *Rh. levi sp. n.* have reddish brown forewings (Figs 1, 3–4, 6, 8, 10–12), socii with single apex (Figs 28, 39), and distributed in Eastern Africa and Katanga Province, DRC (Fig. 48).



Figures 41–45. ♀ genitalia of *Rhynchobombyx* spp. (CGM/USTTB, except 41 – NHMZ, 45 – MfNB). 41. *Rh. levi* sp. n., PT, Zimbabwe, Harare, GS Las-16. 42. *Rh. julianjameseaton*, PT, DRC, Ekongo camp, GS 0624. 43. *Rh. madisonellafriend*, HT, DRC, Ekongo camp, GS 0630. 44. *Rh. avadomenicarocchio*, PT, DRC, Ekongo camp, GS 0618. 45. *Rh. nasuta*, CAR, Mongoumba, GS 2017-031. Scale bar – 1 mm.

TWO NEW *RHYNCHOBOMBYX* SPECIES FROM AFRICA



Figures 46–49. Paratypes of *Rhynchobombyx levi* sp. n. deposited in NHMZ (46) and DMNH (47). Collecting sites of *Rhynchobombyx* spp.: *Rh. levi* sp. n. (48) and *Rh. maddox* sp. n. (49). Circles with star are for HT, other tags are PT.

Distribution (Fig. 49). Angolan wet miombo woodlands and Angolan scarp savanna and woodlands in Angola.

Biology. Adults were collected in March and November from an altitude of 1210 to 1400 meters a.s.l. Preimaginal stages are unknown.

Etymology. The species is named in honor of Maddox Margiotta (Nesconset, USA).

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