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ARTICLE

A review of the genus *Rigema* Walker, 1855 with descriptions of four new species and one new subspecies (Lepidoptera: Notodontidae: Phalerinae)

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Abstract

In this paper, the species of the genus *Rigema* Walker, 1855 are revised based on morphological assessments. The genus comprises 12 valid species, four of which are described as new to science: *R. amharica* **sp. n.**, *R. faber* **sp. n.**, *R. morettoi* **sp. n.**, *R. witti* **sp. n.** A new subspecies, *R. orientalis strandi* **ssp. n.** is described for the West African populations of the species. *Rigema amphiaraus* (Kiriakoff, 1955), **comb. n.** is transferred to *Rigema* from the genus *Antheua* Walker, 1855. Lectotypes are designated for *Rigema vittata* Walker, 1855, *Rigema karschi* Strand, 1912, and *Rigema ornata* Walker, 1865. Adults and genitalia of all taxa are figured through their primary types and additional specimens demonstrating intraspecific variability. The currently known distribution of all taxa is illustrated on dot maps.

Key words: Afrotropics, genitalia morphology, lectotype designation, new combination, taxonomy.

Introduction

Recent publications addressing the taxonomy and phylogeny of the previously understudied Afrotropical Notodontidae have resolved numerous taxonomic issues and identified a substantial number of undescribed taxa within this diverse family, which is characterised by distinctive and often visually striking moths (Schintlmeister & Witt 2015; László *et al.* 2021; St Laurent *et al.* 2023, 2025; Mulvaney *et al.* 2024; Schintlmeister & László 2025). Preliminary studies of Afrotropical Notodontidae materials in major museums and private collections indicate that most genera require taxonomic revision. The present series of revisional papers aim to review all relevant genera, beginning with the phalerine genus *Antheua* Walker, 1855, which was recently revised (Schintlmeister & László 2025). The current study provides a morphology-based revision of *Rigema* Walker, 1855, the next genus in the subfamily Phalerinae that we have studied.

Rigema exhibits its greatest diversity in the Afrotropical Realm, with only one species, *R. combusta* (Walker, 1855), occurring in Asia. Kiriakoff (1962) synonymised *Rigema*, *Zana* Walker, 1855, and *Eutimia* Wallengren, 1858 with *Antheua.* However, Schintlmeister & Witt (2015) reinstated *Rigema* as a distinct genus based on the unique and compact morphology of its species and included the Asian *Anticyra combusta* within *Rigema*. Recent phylogenomic

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evidence by St Laurent *et al.* (2025) has also suggested at the potential re-synonymy of various genera with *Antheua*, but work is ongoing on the validity of phalerine genera.

Regarding foodplant preferences, most Afrotropical Phalerinae, including the larvae of *R. ornata*, *R. combusta,* and *R. woerdeni* (Snellen, 1872), are oligophagous and primarily feed on Poaceae (grasses). Notably, *R. woerdeni* has also been reared by the late N.J. Duke on *Cyperus esculentus* (Cyperaceae) (Kroon 1999).

Material and methods

Morphological studies

This review is based on the examination of all primary types, nearly 1,800 specimens, and 121 mounted genitalia slides. Materials are housed primarily in the ANHRT, NHMUK, MWM/ZSM, and CAS collections (see abbreviations below), as well as several other institutional and private repositories.

Material from recent expeditions was sampled using two light-trapping methods: manual collection and automatic bucket traps. Manual sampling employed either a vertical white sheet or a square-plan white tent, illuminated by a 125W mercury vapour or a 250W blended bulb. Automatic bucket traps were equipped with either 8W actinic light tubes, cold cathode light tubes, or a LepiLED light source.

The collection specimens were photographed using either a Panasonic DMC-FZ150 camera equipped with a Leica DC Vario-Elmarit lens or a Nikon D90 DSLR camera equipped with a Nikkor AF Micro 60 mm lens. Genitalia structures were extracted following standard protocols (Robinson 1976) and were embedded in Euparal mounted on microscope slides. The genitalia preparations were photographed using either a Tucsen H series digital microscope camera mounted on a Nikon SMZ 1500 stereomicroscope or a Canon EOS 700D camera mounted on a Wild M7Z stereomicroscope.

The type localities are presented as published in the original description, with their modern names and geographical coordinates added in square brackets. The labels of all primary types, including those of recognized synonyms, are illustrated below the corresponding adult.

Morphological terms follow St Laurent *et al*. (2025) with certain modifications from Volynkin (2024). The distribution maps were constructed using the online resource SimpleMappr (www.simplemappr.net).

During the preparation of this work, Microsoft 365 Copilot AI assistant was used in order to improve manuscript readability. After using this tool, the content was reviewed and edited, and the authors take full responsibility for the content of the present paper.

Abbreviations

Acronyms of institutions and collections:
ANHRT—African Natural History Research Trust, Leominster, UK;
CAS—Collection of Alexander Schintlmeister, Dresden, Germany;
CDS—Collection of Dirk Stadie, Eisleben, Germany;
CGM—Collection of Günter Müller, Freising, Germany;
CMNH—Carnegie Museum of Natural History, Pittsburgh, USA;
CRF—Collection of Ralf Fiebig, Roßleben-Wiehe, Germany;
FLMNH—Florida Museum of Natural History, Gainesville, USA;
MfN—Museum für Naturkunde, Berlin, Germany;
MGCL—McGuire Centre for Lepidoptera and Biodiversity, Gainesville, USA;
MHNG—Muséum d'histoire Naturelle, Geneve, Switzerland;
MNHN—Muséum national d'Histoire naturelle, Paris, France;
MWM/ZSM—Museum Witt in the collection of ZSM, München, Germany;
NHMW—Naturhistorisches Museum Wien, Austria;
NHMUK—The Natural History Museum, London, UK;
OUMNH—Oxford University Museum of Natural History, Oxford, UK;
RMCA—Royal Museum for Central Africa, Tervuren, Belgium;
RMNH—Naturalis Biodiversity Center, Leiden, The Netherlands;

SAMC—Iziko South African Museum, Cape Town, South Africa;
TMSA—Ditsong National Museum of Natural History, Pretoria, South Africa;
USNM—Smithsonian National Museum of Natural History, Washington, DC, USA;
ZSM—Zoologische Staatssammlung, München, Germany.

Abbreviations of countries:
CAR—Central African Republic
Congo—Republic of the Congo
DRC—Democratic Republic of the Congo
RSA—Republic of South Africa

Other abbreviations:
GS—genitalia slide
LG—genitalia slide prepared by G. László
LT—lectotype
HT—holotype
PT—paratype
TL—type locality

Nomenclatural summary

***Rigema* Walker, 1855**
= *Anticyra* Walker, 1855
= *Dinara* Walker, 1856

R. vittata Walker, 1855
= *Rigema karschi* Strand, 1912
R. faber László & Schintlmeister, **sp. n.**
R. amharica László & Schintlmeister, **sp. n.**
R. haasi (Saalmüller, 1884)
R. ornata Walker, 1865
= *Rigema quisola* Strand, 1912
R. witti Schintlmeister & László, **sp. n.**
R. orientalis orientalis Strand, 1912
= *Rigema woerdeni centralis* Strand, 1912
R. orientalis strandi Schintlmeister & László, **ssp. n.**
R. morettoi Schintlmeister & László, **sp. n.**
R. ochriventris Strand, 1912
R. amphiaraus (Kiriakoff, 1955), **comb. n.**
R. woerdeni (Snellen, 1872)
= *Rigema woerdeni meridionalis* Strand, 1912
R. combusta (Walker, 1855)
= *Dinara lineolata* Walker, 1856

Taxonomic part

Rigema Walker, 1855

List of the specimens of Lepidopterous Insects in the Collection of the British Museum. Lepidoptera Heterocera **5**: 1079.
Type species: *Rigema vittata* Walker, 1855, by monotypy.

= *Anticyra* Walker, 1855, *List of the specimens of Lepidopterous Insects in the Collection of the British Museum. Lepidoptera Heterocera* **5**: 1091.

Type species: *Anticyra combusta* Walker, 1855, by monotypy.

A junior homonym of *Anticyra* Curtis, 1834.

= *Dinara* Walker, 1856, *List of the specimens of Lepidopterous Insects in the Collection of the British Museum. Lepidoptera Heterocera* **7**: 1699.

Type species: *Dinara lineolata* Walker, 1856, by monotypy (= *Anticyra combusta* Walker, 1855).

Characterisation of the genus

The genus *Rigema* comprises medium- to large-sized moths, with forewing length ranging between 15–36 mm. The antennae are bipectinate proximally in both sexes, with the rami gradually shortening distally towards a filiform tip. Superficially, *Rigema* species are rather homogenous. The forewing ground colour ranges from yellow to orange-brown. A broad, pinkish or rusty-red longitudinal band, composed of multiple fine lines, extends from the forewing base to the outer margin along vein M2. The terminal line consists of contrasting fuscous-brown or violet-brown, sickle-shaped streaks between the veins. The fringe is yellow, concolorous with the forewing ground colour, and contrasts sharply with the deep violet or brown terminal line. The forewing discal spot is absent, except in *R. woerdeni*. The hindwings are white or pale yellow and lack anal markings. The abdomen is blackish and covered with light grey scales; however, in *R. combusta* and *R. woerdeni*, it is orange-brown with contrasting black lateral spots. The abdominal apex is whitish-grey. Sexual dimorphism is negligible across the entire genus, with females being somewhat larger and bulkier.

The male genitalia are characterised by a long, slender, weakly sclerotised uncus and a pair of robust, flag-like or distally tapering socii. The tegumen is elongate and robust, whereas the vinculum is short. The elongate valva features an extensive costal plate, a well-developed editum, a variably developed ampulla process and a flap-like apical lobe. The sacculus is broad and sometimes bears a short process. The phallus is relatively short and straight, with one or two well-developed carina processes. The endophallus contains deciduous, caltrop-like cornuti that detach during eversion. The eighth abdominal segment is quadrangular with specific sclerotisations. The posterior margin of the eighth sternite is concave or straight, lacking the distinct notch characteristic of *Antheua*, whereas the anterior margin features a pair of central apodemes.

The female genitalia feature an expansive and heavily sclerotised eighth abdominal segment. Both pairs of apophyses are remarkably short but robust. In most species, the ostium bursae is notably broad and leads into a large, heavily sclerotised, anteriorly tapered antrum; the ductus bursae is typically broad and short, except in *R. morettoi*, where it is elongate. The corpus bursae bears a pair of variably sclerotised, invaginated distal plates near the insertion of the ductus bursae, a characteristic feature of most Phalerinae. Certain *Rigema* species (*R. orientalis*, *R. morettoi*, *R. amphiaraus*, and *R. combusta*) possess a sinuous or ovoid signum, whereas the remaining species lack a signum bursae.

Rigema vittata Walker, 1855

(Figs 1, 2, 9)

Rigema vittata Walker, 1855, *List of specimens of Lepidopterous Insects in the Collection of the British Museum* **5**: 1079.
= *Rigema karschi* Strand, 1912, *Fauna exotica* **1** (14): 54.

Type material examined. **Lectotype** of *Rigema vittata* Walker, 1855 (hereby designated): ♀, [circular label with blue margin] "SYN- / TYPE" // [circular label with handwritten] "Sierra / Leone" (NHMUK). **Lectotype** of *Rigema karschi* Strand, 1912 (hereby designated): ♂, "Kamerun int / Garua [= Garoua, 9°19'N, 13°24'E] / 7.viii.09. / Riggenbach S.G. // Rigema Karschi / m. ♂ / Strand det. // Type" (MfN).

Designation of lectotypes. ***Rigema vittata* Walker, 1855** (Fig. 1a). *Rigema vittata* was described from three specimens from Sierra Leone stated as males in the original description without the designation of a holotype. During our studies, two female syntypes, both lacking abdomens, were traced in the collection of the Natural History Museum, London (NHMUK). However, a separate abdomen is pinned next to one of these syntypes, accompanied by a label reading "Rigema wittata abd. of Type". One of these female specimens is hereby designated as the

lectotype to stabilise the nomenclature. Its labels are illustrated in Fig. 1a; a formal lectotype label has been added subsequently to the specimen. The remaining female specimen is designated as a paralectotype. ***Rigema karschi* Strand, 1912** (Fig. 1b). *Rigema karschi* was described from a pair of syntypes collected in Garua, Adamaua, without the designation of a holotype. Both syntypes have been located in the holdings of the MfN. In order to stabilise the nomenclature, the male specimen is hereby designated as the lectotype. The labels of this specimen are illustrated in Fig. 1b; a formal lectotype label has been added subsequently. The female specimen is designated as a paralectotype.

Additional material examined. **Burkina Faso**. 1 ♂, 1 ♀, Bobo Dioulasso [10°52'N, 4°40'W], 7.vii.1977, 28.viii.1982, leg. Dr. Politzar (FLMNH); 1 ♂, Bobo, 10.ix.1976, leg. H. Politzar (ZSM); 1 ♂, Folonzo, Comoe, [10°25'N, 4°44'W], 22.ix.1977, leg. Dr. Politzar (MWM/ZSM); 1 ♂, Folonzo am Fluß, Comoe, 18.x.1985, GS: MWM 22.782 (MWM/ZSM); 1 ♀, same site and collector, iv.1995 (CGM); 1 ♂, 1 ♀, Boromo, Ft de Sorobouli, 11°46'53.8"N, 02°54'02.5"W, 247m, 4–5.vii.2013, leg. P. Moretto, GS: MWM 25.971, MWM 29.972 (CAS); 1 ♂, same data; 7 ♂♂, same site and collector, 24–25.vii.2014, GS: ANHRT 00247 (LG 4580); 1 ♂, 1 ♀, same site and collector, 25–26.vi.2014, GS: ANHRT 00248 (ANHRT). **Cameroon**. 1 ♂, 1♀, Garua [9°19'N, 13°24'E], 5.viii.1909 and 7.viii.1909, leg. Riggenbach S.G. (LT and PLT, MfN); 1 ♀, Garoua, Faro National Park, 8°23'36.4"N, 12°49'29.3"E, 300m, 28.iv.–9.v.2005, leg. K. Larsen & T. Zandersen (ANHRT); 3 ♂♂, same data (CGM); 1 ♂, Adamaua, Poli [8°29'N, 13°15'E], 500m, b. Garua, 10.vi.1937, leg. H. Weidholz (NHMW). **Ghana**. 1 ♂, Tamale, 9°25'N, 0°51'W, 16.vi.1971, leg. Endrödi-Younga (TMSA); long series of both sexes, Northern Territory, Navaro [Navrongo, 10°54'N, 1°6'W], vi., vii., viii., x.1923, leg. A.W. Cardinall; 2 ♂♂, Tamale [9°26'N, 0°54'W], leg. A.W. Cardinall; 2 ♀♀, Kete-Krachi [7°48'N, 0°3'W], leg. A.W. Cardinall; 1 ♂, Accra [5°38'N, 0°12'E]; 1 ♂, Secondi [4°59'N, 1°44'W] (NHMUK). **Ivory Coast**. 11 ♂♂, 1 ♀, Bingerville [5°22'N, 3°53'W], 1915, leg. G. Melou (NHMUK). **Mali**. Long series of both sexes, Koulikoro Region, near Ouronina village, 12.103085°N, 8.411406°W, 395m, vi–ix.2015, leg. GCM Team, GS: MWM 35.254, MWM 35.255 (MWM/ZSM, CAS, ANHRT, CGM); 10 ♂♂, 10 ♀♀, Mts. Mandingues, SW Sandama [12°26'N, 8°45'W], 550–650m, v.2011 (CGM); 1 ♂, Yanfolila, 11°11'N, 08°09'W, 27.vii.1986, leg. M. Matthews (NHMUK); 24 ♂♂, Ouronina, 80 km SW of Bamako, near Keniroba/ Niger, 360m, viii–x.2013, leg. local collector (ANHRT). **Nigeria**. 1 ♂, Kwangi [8°21'N, 10°46'E], 8.vi.1974, leg. H. Politzar, GS: ZSM Sp 522; 1 ♂, Kaduna [10°30'N, 7°26'E], 29.ix.1978 (ZSM); 1 ♀, Kaduna, 12.viii.1970, leg. Dr. Politzar (CGM); 1 ♂, Samaru [11°9'N, 7°37'E], 1–2.vi.1970, leg. P.H. Ward; 1 ♂, Zaria, Samaru, 3.vi.1967, leg. J.C. Deeming; 1 ♀, Azare [11°39'N, 10°11'E], 1926, leg. Dr. L. Lloyd; 2 ♂♂, Abinsi [7°45'N, 8°44'E], River Benue, 5,9.vii.1912; 2 ♂♂, 1 ♀, Lokoja [7°49'N, 6°44'E], x.1904, leg. D. Cator; 1 ♀, Minna [9°37'N, 6°30'E], 10.viii.1910, leg. S. Macfie (NHMUK). **Senegal**. 2 ♂♂, 1 ♀, 5 miles W Diouguel [14°23'N, 14°36'W] vi.1985, leg. H. Friend (CAS); 2 ♂♂, 1 ♀♀, same data (CGM); 8 ♀♀, Sedhiou [12°42'N, 15°36'W], vii., viii., x.1917, leg. H. Castell; 3 ♂♂, Kaolack [14°9'N, 16°3'W], 1909, leg. G. Melou (NHMUK). **Sierra Leone**. 2 ♀♀, Sierra Leone [likely Freetown 8°30'N, 13°12'W] (LT and PLT, NHMUK). **Togo**. 1 ♂, Fazao-Malfakassa NP, Point de vue campsite (Sudanian savannah), 8°48'50"N, 0°49'3.2"E, 415m, 16–23.viii.2018, actinic light trap, Aristophanous, M., Geiser, M., Moretto, P., Sanbena, B. leg. (ANHRT).

Diagnosis. Forewing length is 15–20 mm in males and 17–20 mm in females. *Rigema vittata* is the smallest member of the genus. It is easily distinguished from most congeners by the contrasting black apical streak on the forewing. The hindwings are whitish with a faint yellowish tinge. For differentiation from the closely related *Rigema faber* **sp. n.**, see the comparative diagnosis below.

Male genitalia. Characterised by a long, apically dilated uncus and apically bifurcate socii. The costal margin of the valva is strongly dilated and broadly rounded, giving the valva a somewhat bulbous appearance. The distal process of the valva is well-developed, apically dilated, and rounded-trapezoidal, while the saccular projection is triangular. The phallus features a large, robust, heavily sclerotised, scythe-shaped ventral carina process that extends past the phallus apex.

Female genitalia. Characterised by a conspicuously long, quadrangular eighth abdominal segment. The ductus bursae is very short, featuring a slightly curved, anteriorly tapering antrum. The distal end of the corpus bursae bears narrow, nearly straight, ribbon-like sclerotised evaginations.

Distribution. *Rigema vittata* exhibits a broad distribution in West Africa, with confirmed records in Sierra Leone, Senegal, Burkina Faso, Mali, Ghana, Nigeria, and Cameroon.

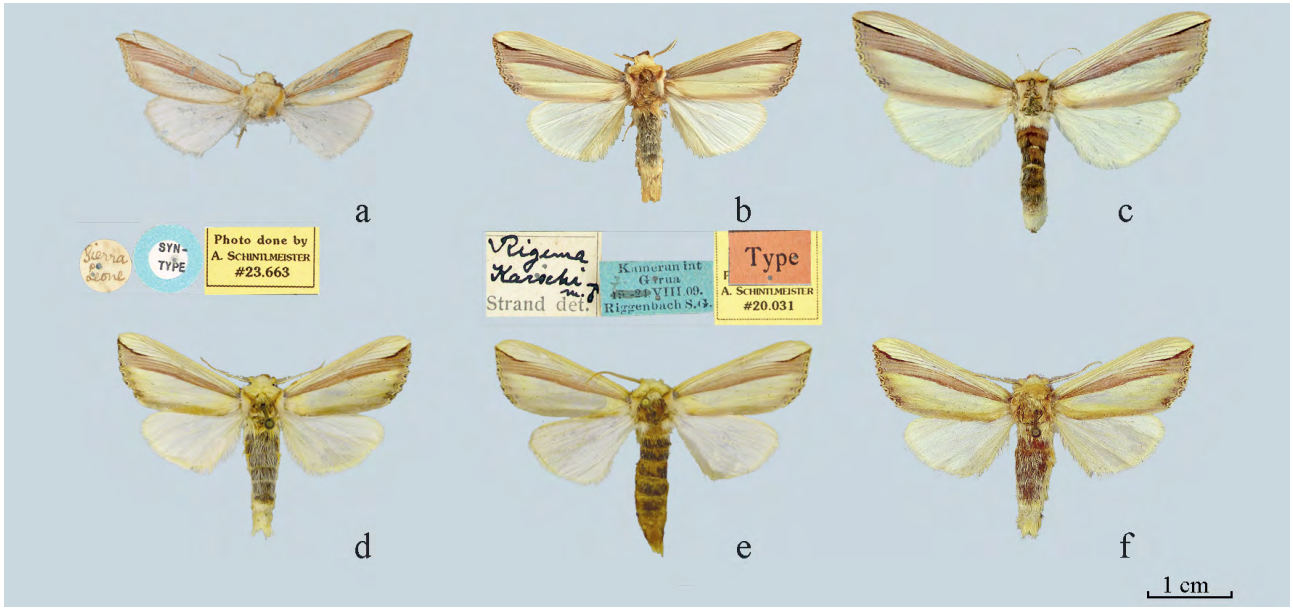


Figure 1. *Rigema vittata*, adults. **a)** ♀, Sierra Leone, lectotype (NHMUK) and associated labels; **b)** ♂, Cameroon, Garoua, lectotype of *Rigema karschi* Strand, 1912 (MfN) and associated labels; **c)** ♀, Burkina Faso, Bobo-Dioulasso (FLMNH); **d)** ♂, Mali, Ouronina, 80 km SW Bamako (CAS); **e)** ♂, Senegal, 5 miles W Diouguel (CAS); **f)** ♂, Mali, Ouronina, 80 km SW Bamako (CAS).

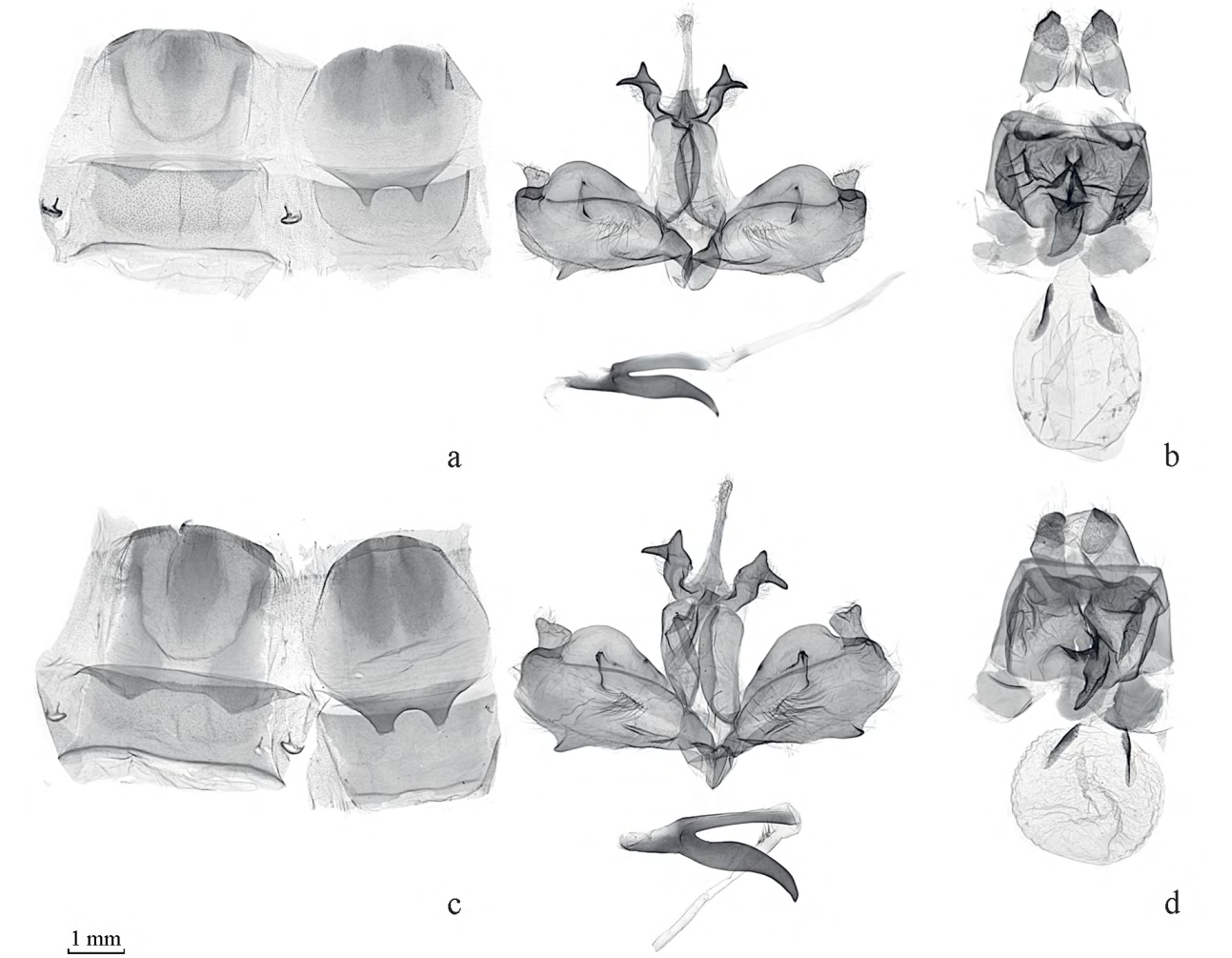


Figure 2. *Rigema vittata*, genitalia (all in MWM/ZSM). **a)** ♂, Burkina Faso, Boromo, Ft. de Sorobouli, GS: MWM 25.971; **b)** ♀, Burkina Faso, Boromo, Ft. de Sorobouli GS: MWM 25.972; **c)** ♂, Mali, Ouronina, 80 km SW Bamako GS: MWM 35.255; **d)** ♀, Mali, Ouronina, 80 km SW Bamako GS: MWM 35.254.

***Rigema amharica* László & Schintlmeister, sp. n.**
(Figs 3, 4, 9)
http://zoobank.org/urn:lsid:zoobank.org:act:01EAD62E-29C8-41CE-AC9E-B6FB443A3FF6

Holotype. ♂, [Ethiopia] "Abyssinia: / Codjeb River. [7°15'N, 36°48'E] / Kaffa. / [handwritten] 24.v.1905. / Ph. C. Zaphiro. / 1906–78" // QR code label with unique id.: NHMUK010292225, GS: NHMUK014331098 (NHMUK).

Paratypes (8 ♂♂, 1 ♀ in total). **Ethiopia**. 1 ♂, with the same data as the holotype; 1 ♂, same site and collector, 28.v.1905, GS: NHMUK014331089; 1 ♂, same site and collector, 25.v.1905; 1 ♂, same site and collector, 23.v.1905; 1 ♂, same site and collector, 26.v.1905; 1 ♂, Dulla [7°09'N, 36°38'E], Kaffa, 5000 ft, 13.vi.1905, leg. Ph. C. Zaphiro; 1 ♂, Sadetcha, Goma [6°46'N, 36°00'E], 5100 ft, 12.v.1905, leg. Ph. C. Zaphiro; 1 ♂, Charada Forest [07°25'N 36°45'E], Kaffa, 6000 ft., 31.v.1905, leg. Ph. C. Zaphiro; 1 ♀, Abyssinia, 1881, leg. Raffray, GS: NHMUK014333517 (NHMUK).

Diagnosis. Forewing length is 18–19 mm in males and 23 mm in the sole female paratype. *Rigema amharica* **sp. n.**, *R. vittata* and *R. faber* **sp. n.** are externally indistinguishable allopatric species.

Male genitalia. The general ground plan of the male genitalia in *R. amharica* **sp. n.** resembles those of *R. vittata* and *R. faber* **sp. n.**, but the new species is readily distinguished by the considerably longer projections of the bifid socii, a markedly narrower and more elongate valva, and a shorter apical flap of the valva. Additionally, the broader, almost semi-circular saccular lobe arises postmedially from the valval plate at the ventral third, and a well-developed triangular digitus is present (whereas it is vestigial or absent in the related taxa). The phallus of the new species features a significantly more dilated, bifid coecum and a substantially shorter carinal process than its congeners. Furthermore, the vesica of *R. amharica* **sp. n.** bears a longitudinally arranged group of moderately long, spine-like cornuti, whereas *R. vittata* and *R. faber* **sp. n.** possess deciduous, caltrop-like cornuti.

Female genitalia. The interspecific differences are even more pronounced in the female genitalia. Compared to *R. vittata* and *R. faber* **sp. n.**, *R. amharica* **sp. n.** possesses a considerably shorter and broader eighth abdominal segment and a narrow, curved, distally convex postvaginal plate that lacks a medial notch. The ductus bursae is approximately four times longer and lacks a heavily sclerotised antrum. Additionally, the invaginations at the distal end of the corpus bursae are shorter and wider. The signum is absent.

Etymology. The specific epithet is a reference to the Amharic language, the official language of Ethiopia serving as a bridge language for the numerous ethnic groups of the country.

Distribution. This species is exclusively known from southwestern Ethiopia.

***Rigema faber* László & Schintlmeister, sp. n.**
(Figs 5, 6, 9)
http://zoobank.org/urn:lsid:zoobank.org:act:4F9BE939-FB31-4FB6-A4F9-728119FCB4E7

Holotype. ♂, "ZAMBIA 1340m / Jiwundu Swamp / S11°51'54"; E25°33'20" / 20–22.x.[20]14 Light Trap / leg. Smith, Takano & Oram" // ANHRT:2018.12, unique id.: ANHRTUK 00073367, GS: ANHRT00245 (LG 4578) (ANHRT).

Paratypes (40 ♂♂, 14 ♀♀ in total). **DRC**. 1 ♀, Dungu [3°37'N, 28°55'E], Upper Uele distr., July, GS: NHMUK014333513 (NHMUK). **Kenya**. 17 ♂♂, 3 ♀♀, Suna [1°05'S, 34°27'E], S. Kavirondo, iii.1931, v.1931, xi.1931, xii.1931, i.1932, iii.1932, leg. W Feather, GS: NHMUK014331250 (♀), NHMUK014331091 (♂); 2 ♂♂, same site, iv.1922, leg, Van Someren; 1 ♂, 1 ♀, same site and collector, iv.1932; 1 ♂, Hoey's Bridge [1°36'S, 34°03'E], leg. Capt. Pitman; 1 ♂, Mt. Elgon [1°05'N, 34°40'E], iv.1925, leg. G.W. Jeffery; 2 ♂♂, 1 ♀, Nakuru [0°14'S, 36°04'E], 6.v.1942, 31.v.1946, 20.iv.1947, leg. A. Townsend (NHMUK); 1 ♂, Shimba Hills [4°15'S, 31°34'E], 20.xi.1973, leg. Dr. Politzar (CGM). **Malawi**. 1 ♀, Lilongwe [13°57'S, 33°51'E], Agoniland, 3.i.1910, leg. Andrews (NHMUK). **Tanzania**. 1 ♂, Banagi Hill, Musoma, [1°31'S, 33°48'E], leg. Capt. M. S. Moore, GS: NHMUK014331087; 1 ♀, Chunya District, Chunya, 2650 ft., [8°34'S, 33°26'E], 1947, leg. G. Swynnerton GS: NHMUK014331249; 5 ♂♂, Old Shinyanga [3°34'S, 33°24'E], 2.xii.1951, 28.xii.1951, 26.ii.1952, 6.iii.1952, 22.iv.1952, leg. E. Burtt, GS: NHMUK014331096; 1 ♀, Kalambo River [8°35'S, 31°35'E], South end of Tanganyika; 1 ♂, Kasulu [4°34'S, 30°6'E], 15.iv.1989, leg. A. Bjornstad (NHMUK); 1 ♀, Mpanda, Sibwesa [6°30'S, 30°45'E],

iii.1972 (CGM). **Uganda**. 1 ♀, Murchison Falls National Park, Para Lodge [2°17'S, 39°23'E], 13.vii.1971, leg. P. Bursch (MHNG). **Zambia**. 3 ♂♂, from the same locality as the holotype, 29.x.–4.xi.2018, MV Light Trap, leg. Aristophanous, M., Dérozier, V., László, G., Oram, D., GS: ANHRT 1620; 1 ♂, Mayukuyuku, Kafue N.P., 1080m, 14°54'55"S, 26°03'47"E, 21–26.xi.2013, leg. Smith, Takano & Oram; 1 ♀, Kabwe, Kasanka N.P., 1187m, 12°32'28"S, 30°12'42"E, 30.xi–1.xii.2012, leg. Smith, R. & Takano, H., GS: ANHRT 00246; 1 ♀, Kasanka River Pontoon, Kasanka N.P., 1191m, 12°34'23"S, 30°14'05"E, 2–4.xii.2012, leg. Smith, R. & Takano, H., GS: ANHRT 01619; 1 ♀, Ntumbachushi Falls, Ngona River, Luapula Prov., 09°51'12'S, 28°56'40"E, 3–4.xi.2014, leg. Smith, Takano & Oram; 2 ♂♂, Muchinga Prov., Mama Muwowo's Lodge, 10°32'40"S, 33°26'05"E, 1230m, 6–7.xii.2023, actinic and MV light trap, László, G., Morgan, L., Volynkin, A. leg. (ANHRT); 2 ♂♂, Mbala [8°51'S, 31°23'E], 15–20.ii.1974, 16.iii.1975, Locust Control Centre (NHMUK).

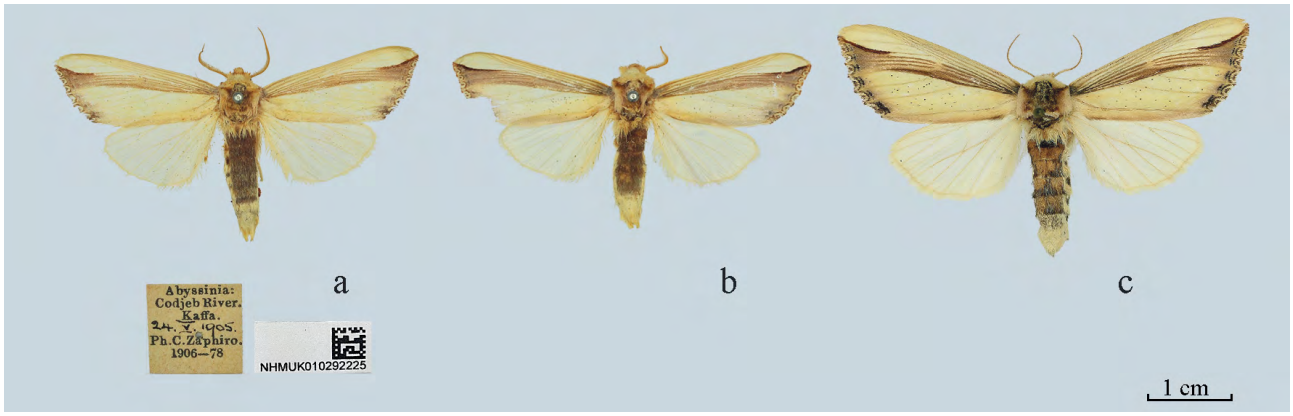


Figure 3. *Rigema amharica* **sp. n.**, adults (all in coll NHMUK). **a)** ♂, Ethiopia, Kaffa, Gojeb River, holotype and associated labels; **b)** ♂, Ethiopia, Kaffa, Gojeb River, paratype; **c)** ♀, Ethiopia, paratype.

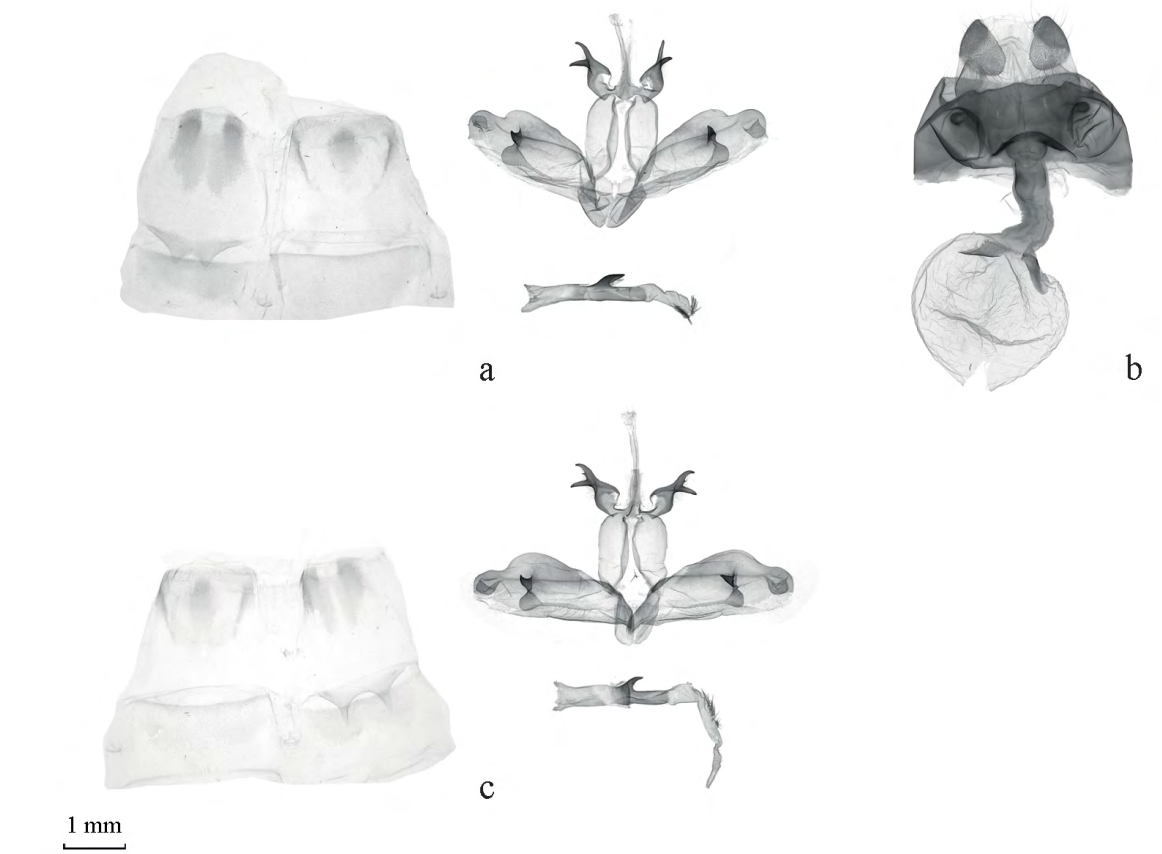


Figure 4. *Rigema amharica* **sp. n.**, genitalia (all in NHMUK). **a)** ♂, Ethiopia, Kaffa, Gojeb River, GS: NHMUK014331098, holotype; **b)** ♂, Ethiopia, Kaffa, Gojeb River, GS: NHMUK014331089, paratype; **c)** ♀, Ethiopia, GS: NHMUK014333517, paratype.

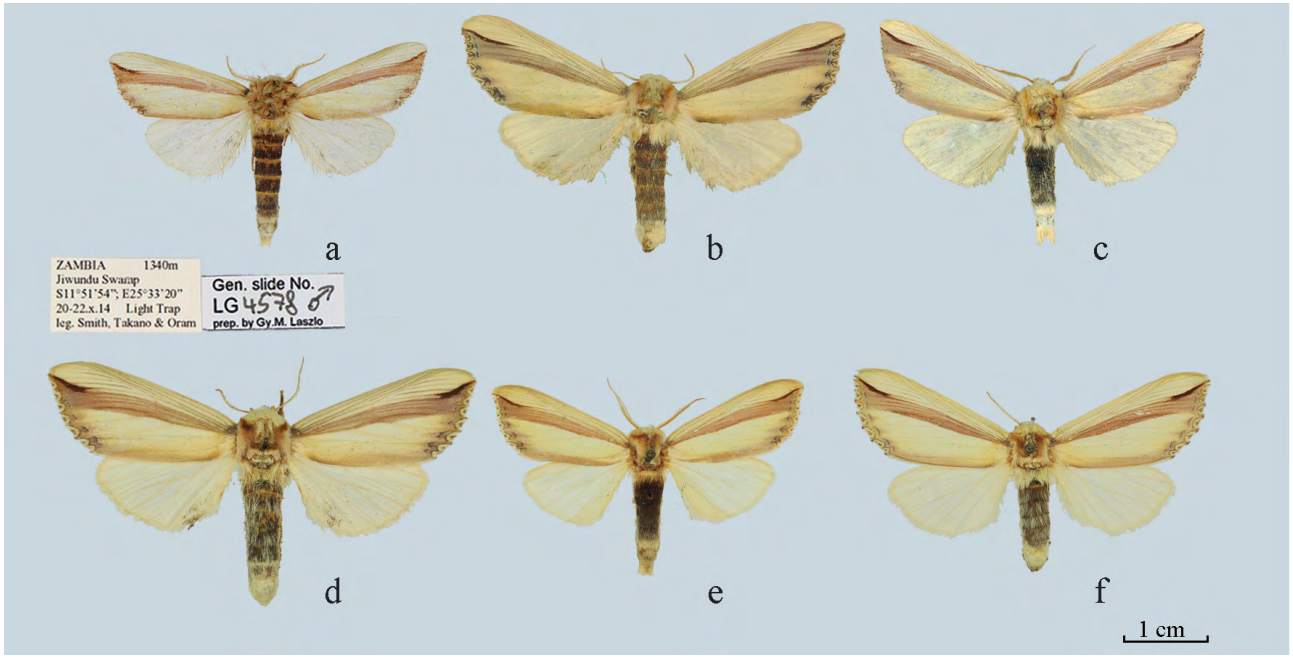


Figure 5. *Rigema faber* **sp. n.**, adults. **a)** ♂, Zambia, Jiwundu Swamp, holotype and associated labels (ANHRT); **b)** ♀, Zambia, Kabwe, Kasanka N.P., paratype (ANHRT); **c)** ♂, Zambia, Jiwundu Swamp, paratype (ANHRT); **d)** ♀, Tanzania, Chunya District, Chunya, paratype (NHMUK); **e)** ♂, Kenya, Suna, S. Kavirondo, paratype (NHMUK); **f)** ♀, Kenya, Suna, S. Kavirondo, paratype (NHMUK).

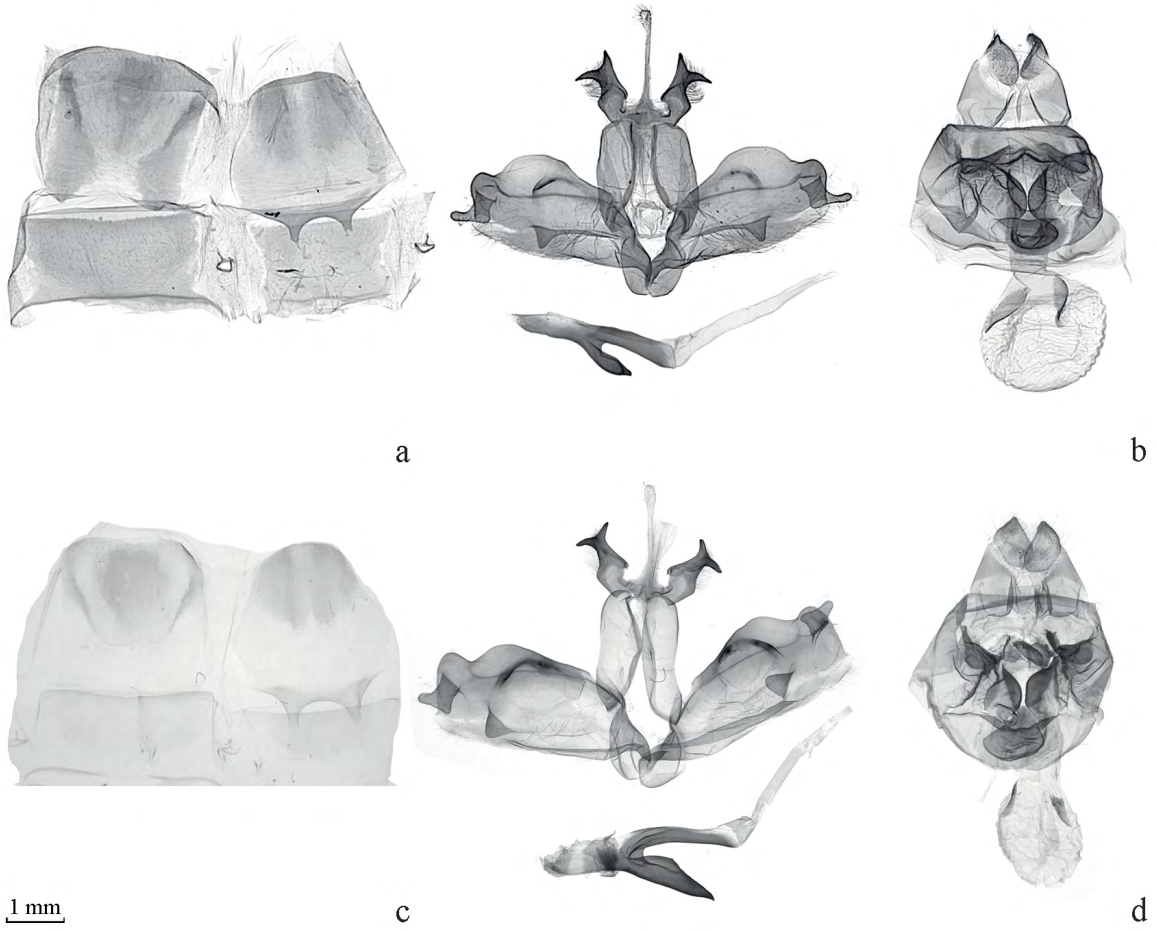


Figure 6. *Rigema faber* **sp. n.**, genitalia. **a)** ♂, Zambia, Jiwundu Swamp, holotype, GS: ANHRT000245 (LG 4578) (ANHRT); **b)** ♀, Zambia, Kabwe, Kasanka N.P., paratype, GS: ANHRT000246 (ANHRT); **c)** ♂, Tanzania, Banagi Hill, paratype, GS: NHMUK014331087 (NHMUK); **d)** ♀, Kenya, Suna, S. Kavirondo, paratype, GS: NHMUK014331250 (NHMUK).

Diagnosis. Forewing length is 16–18 mm in males and 19–23 mm in females. *Rigema faber* **sp. n.**, *R. vittata*, and *R. amharica* **sp. n.** are externally indistinguishable species. However, their allopatric distributions enable unambiguous identification.

Male genitalia. The male genitalia of *R. faber* **sp. n.** resemble those of *R. vittata* in the swollen costa of the valva and the bifurcate shape of the socii. However, *R. faber* **sp. n.** differs in having a noticeably more elongate valva, and an apically tapered, finger-like distal process of the valva, whereas this process is quadrangular and block-like in *R. vittata*. The triangular saccular process arises from the valval plate at its ventral third via a narrow ridge connected to the valval base in *R. faber* **sp. n.**, whereas it projects directly from the ventral margin of the sacculus in *R. vittata*. The phallus of the holotype bears a substantially shorter ventral carinal process than that of *R. vittata*, though a male *R. faber* **sp. n.** specimen from Tanzania displays a relatively long carinal projection but it is still ca. 20% shorter than that of *R. vittata*.

Female genitalia. The female genitalia of *R. faber* **sp. n.** differ from those of *R. vittata* in the morphology of the vaginal plate, which is markedly more deeply notched. Additionally, the antrum is broadly rounded anteriorly (pointed in *R. vittata*) and the sclerotised evaginations at the distal end of the corpus bursae are longer and broader than in *R. vittata*. Both species share a similarly short, broad ductus bursae and a corpus bursae lacking a signum.

Etymology. The specific epithet "*faber*" is derived from the Latin noun meaning "*smith*" and this new species is named this way in honour of Richard Smith, Chairman of the Board of Trustees of the African Natural History Research Trust, an eminent promoter of entomological research in Africa.

Distribution. *Rigema faber* **sp. n.** displays an eastern African distribution with confirmed records from the northeastern DRC, Kenya, Malawi, Tanzania, Uganda, and Zambia.

Rigema haasi (Saalmüller, 1884)

(Figs 7, 8, 9)

Phalera haasi Saalmüller, 1884, *Lepidopteren von Madagascar. Erste Abtheilung: Rhopalocera, Heterocera: Sphinges et Bombyces* p. 245; pl. 5: 54.

Type material examined. **Holotype** of *Phalera haasi*: ♂, [pink label] "Origin." // [with handwritten] "Betsileo [Fianarantsoa, 21°27'S, 47°05'E] / Madagasc." // [with handwritten] "Phalera / Haasi Saalm. / Mad. ♂" // [with handwritten] "Haasi / Saalm." (MfN).

Remark. The original description of this species is based on a single male specimen, with "Mad. (Bets.)" cited as the type locality. Accordingly, the specimen is confirmed as the holotype.

Additional material examined. **Madagascar**. 1 ♂, 1 ♀, Plateaux de l'Imerina, Tananarive, Parc de Tsimbazaza [18°56'S, 47°31'E], 1200m, 5.xii. and 13.xii.1951, leg. P. Viette (MNHN); 1 ♂, Prov. Fianarantsoa, Ifanadiana district, Ranomafana, 14.iii.2019, leg. V. Golovizin (CRF); 2 ♂♂, 2 ♀♀, Andasibe, 24 km E Moramanga, 18°57'S, 48°24'E, 11.xii.–16.xii.2000, 900m, leg. S. Murzin, GS: GU 89-84, GU 89-85; 1 ♂, Fianarantsoa, Ranomafana, 21°14'S, 47°26'E, 900m, 5–15.i.2001, leg. S. Murzin; 1 ♂, 100 km E Antananarivo, Andesibe-Perinet [18°56'S, 48°25'E], 1000m, 21.xii.2001, leg. I. Pljutch (CAS); 1 ♂, 2 ♀, Ambohitantely Special Reserve, 1530m, 18°11'51"S, 47°17'03"E, 24–29.xi.2011, leg. M. Tryzna, GS: ANHRT 00234 (LG 4587) ♂, ANHRT 00235 (LG 4588) ♀; 1 ♂, Ambohitantely Special Reserve, 1633m, 18°11'44.2"S, 47°17'15.5"E, 4–7.ii.2017, leg. M. Tryzna; 2 ♀♀, Toliara Prov., Zombitse-Vohibasia N.P. Isoky forest margin, 22°41.012'S, 44°51.835'E, 692m, 18–21.i.2014, M. Tryzna leg.; 1 ♀, Andasibe NP., Analamazaotra Aventure circ., 947m, 18°56'40.6"S, 48°25'26.7"E, primary forest, 22–29.i.2019, M. Tryzna leg.; 1 ♂, 1 ♀, Ambohitantely Special Reserve, 24–29.xi.2011, 1530m, 18°11'51"S, 47°17'03"E, leg. M. Tryzna, GS: LG 4587, LG 4588 (ANHRT); long series of both sexes, Nanisana [18°53'S, 47°92'E], near Tananarivo, xii.1931, i–ii.1932, leg. Mme N. d'Olsoufieff; 9 ♂♂, 3 ♀♀, Station Perinet [Andasibe, 18°56'S, 48°24'E, 149 km E of Tananarivo, xii.1932, ii.1935, leg. Mme N. d'Olsoufieff; 1 ♀, Tananarivi; 17 ♂♂, 2 ♀♀, Mananjara [Antananarivo, Tananarivo], xi.1918, leg. M. Le Moult; 2 ♂♂, Sakaramy [12°26'S, 49°15'E], 16.ii.1917, leg. G. Melou; 5 ♂♂, Imerina [19°05'S, 47°33'E], 1892, leg. R.P. Camboue; 1 ♂, 4 ♀♀, Ambinanindrano [20°41'S, 47°34'E], 50 km W of Mahanoro, x.1911, x.1912, vi.1913, leg. G.K. Kestell-Cornish; 1 ♀, Ambinanindrano, 60 km E of Mahanoro, 1912, leg. G.K. Kestell-Cornish; 1 ♂, Diego Suarez [Antsinarana, 12°18'S, 49°17'E], 4.iii.1917, leg. G. Melou; 1 ♂,

1 ♀, Ankarampotsy [21°28'S, 47°05'E], near Fianarantsoa, col de Tantamaly, xii.1933, leg. R. Catala; 1 ♂, Tamatave [Toamasina, 18°09'S, 49°22'E], leg. Perrot; 1 ♀, Sahambavy [21°26'S, 47°17'E], nr. Fianarantsoa, 1010–1180m, i.1934, leg. R. Catala (NHMUK).

Diagnosis. Forewing length is 18–23 mm in males and 22–26 mm in females. *Rigema haasi* resembles *R. ornata* but can be distinguished by its distinct wing colouration. In *R. haasi*, the longitudinal band of the forewing is distinctly brownish (rather than pinkish-brown in *R. ornata*), the violet-brown apical streak is slightly longer and more contrasting and the anal margin features a darker brownish stripe extending to the tornus. The hindwings are paler whitish-yellow instead of deep yellow in *R. ornata*.

Male genitalia. The male genitalia of *Rigema haasi* can be distinguished from those of *R. ornata* by the reduced costal projection and the significantly larger, quadrangular saccular lobe of the valva which is rounded-triangular in *R. ornata*. Additionally, the phallus of *R. haasi* bears a single, relatively long, thorn-like medio-lateral process and a minute, button-like protuberance on the opposite side; in contrast, *R. ornata* features two thinner, almost equally long, more distally positioned carinal projections.

Female genitalia. The ostium bursae is markedly wider in *Rigema haasi*, leading into a significantly larger, more heavily sclerotised, T-shaped antrum and a slightly shorter, thicker ductus bursae compared to those of *R. ornata*. Furthermore, the triangular sclerotisations at the distal region of the corpus bursae are noticeably larger in *R. haasi* than in *R. ornata*. The signum bursae is absent.

Distribution. This species is endemic to Madagascar, being the only *Rigema* species known from the island.

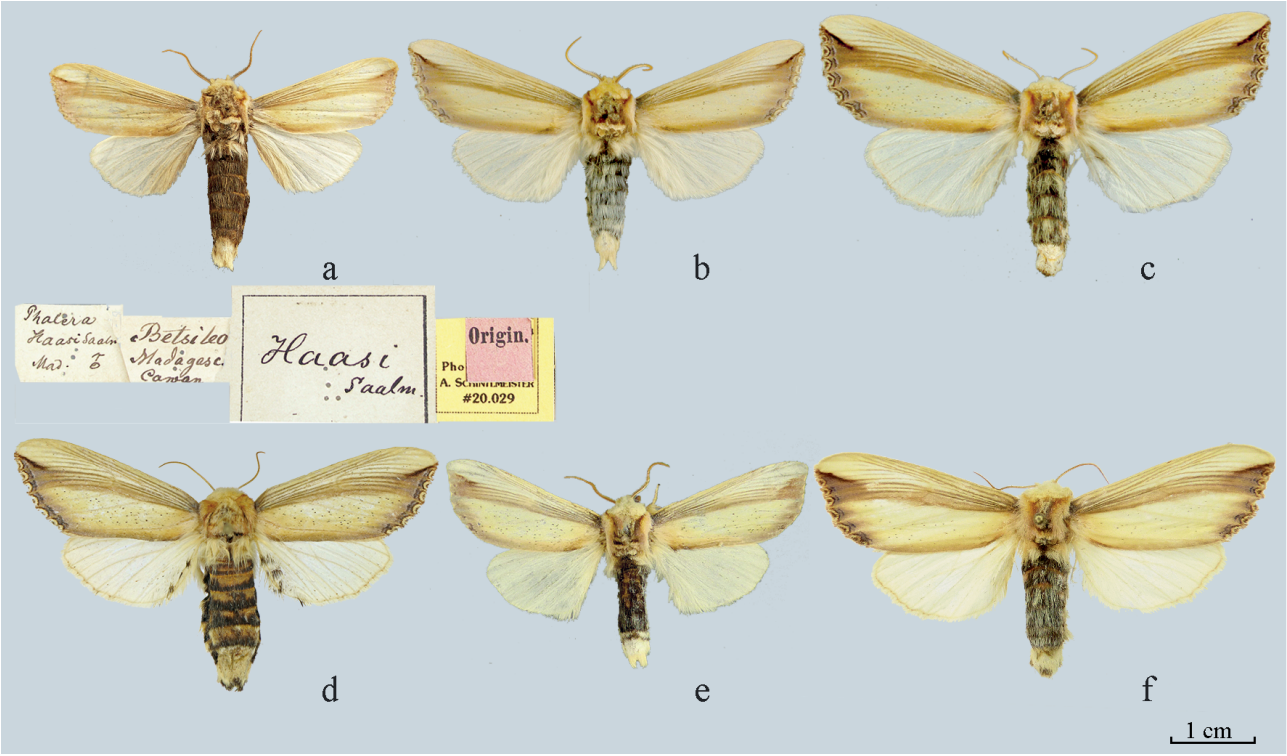


Figure 7. *Rigema haasi,* adults. **a)** ♂, Madagascar, Fianarantsoa, holotype and associated labels (MfN); **b)** ♂, Madagascar, Antananarivo (MNHN); **c)** ♀, Madagascar, Antananarivo (MNHN); **d)** ♀, Madagascar, Ambohitantely Special Reserve (ANHRT); **e)** ♂, Madagascar, Fianarantsoa, Ranomafana (MWM/ZSM); **f)** ♀, Madagascar, 24 km E Moramanga, Andasibe (MWM/ZSM).

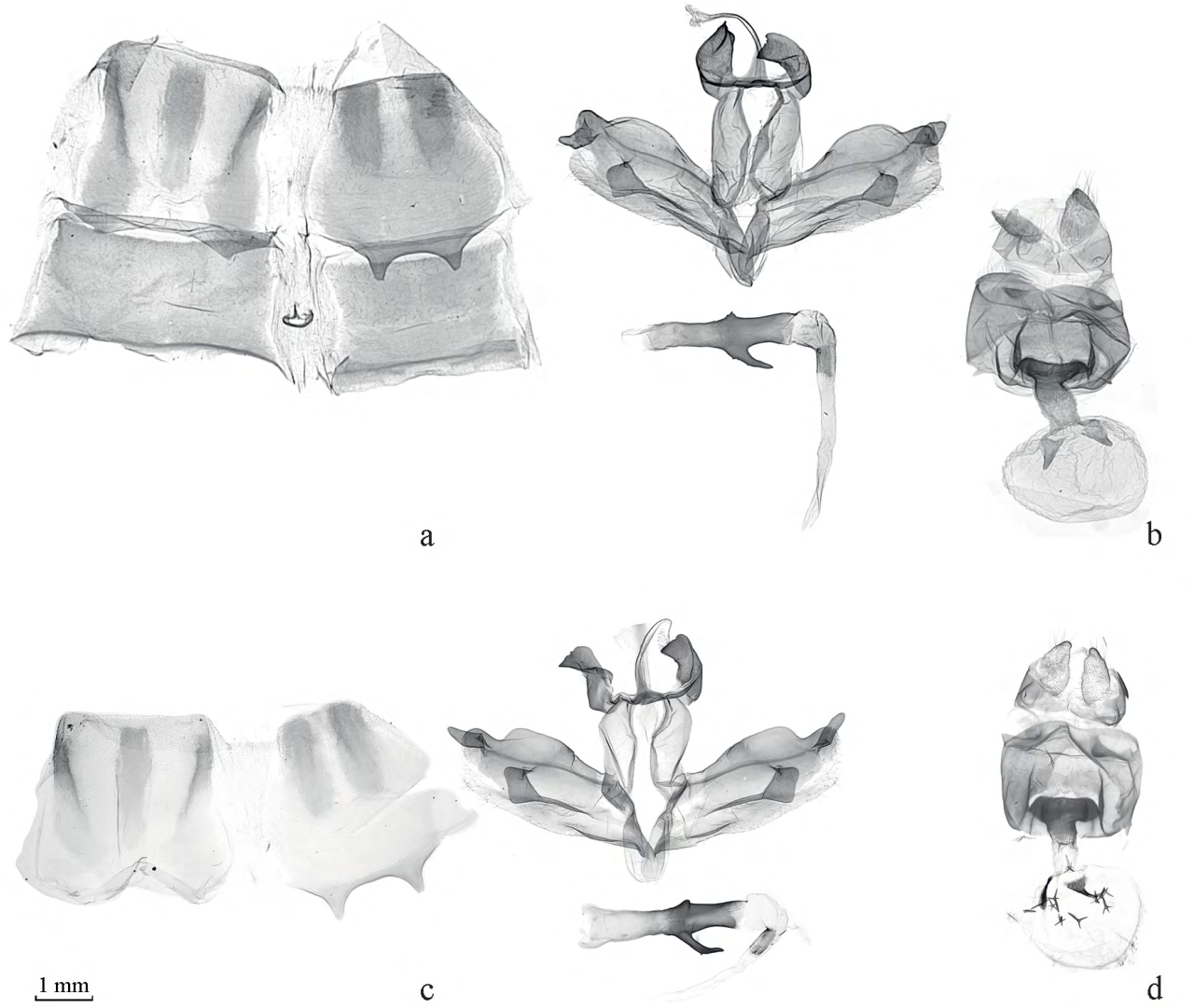


Figure 8. *Rigema haasi,* genitalia. **a)** ♂, Madagascar, Ambohitantely Special Reserve, GS: LG 4587 (ANHRT); **b)** ♀, Madagascar, Ambohitantely Special Reserve, GS: LG 4588 (ANHRT); **c)** ♂, Madagascar, 24 km E Moramanga, Andasibe, GS: GU 89-84 (MWM/ZSM); **d)** ♀, Madagascar, 24 km E Moramanga, Andasibe, GS: GU 89-85 (MWM/ZSM).

Rigema ornata Walker, 1865

(Figs 10, 11, 14)

Rigema ornata Walker, 1865, *List of specimens of Lepidopterous Insects in the Collection of the British Museum* **32**: 437.
= *Rigema quisola* Strand, 1912, *Fauna exotica* **1** (14): 54.

Type material examined. **Lectotype** of *Rigema ornata* Walker, 1865 (hereby designated): ♀, [RSA], [circular label, with handwritten] "Pt / Natal" // "ORNATA" (NHMUK). **Holotype** of *Rigema quisola* Strand, 1912: ♀, [red label] "Type" // [blue label] "Angola / Quisoll [= Quissol, 9°35'S, 16°30'E] / 23 km v. Malange / Kaml. S.V." // "44116" // [with partially handwritten] "Rigema / quisola ♀ / Strand. Det." // [with handwritten] "Rigema / quisola / n. sp." (MfN).

Remarks. **(1)** The original description of *R. quisola* refers to a single female specimen collected from Angola, therefore the specimen is confirmed as the holotype. **(2) Designation of lectotype**. *Rigema ornata* was originally described from two males collected in South Africa, Port Natal. Within the holdings of NHMUK, a single syntype has been located; however, this specimen proved to be a female. This female syntype is designated here as the lectotype. The lectotype and its labels are illustrated in Fig. 10a; a lectotype label was added subsequently.

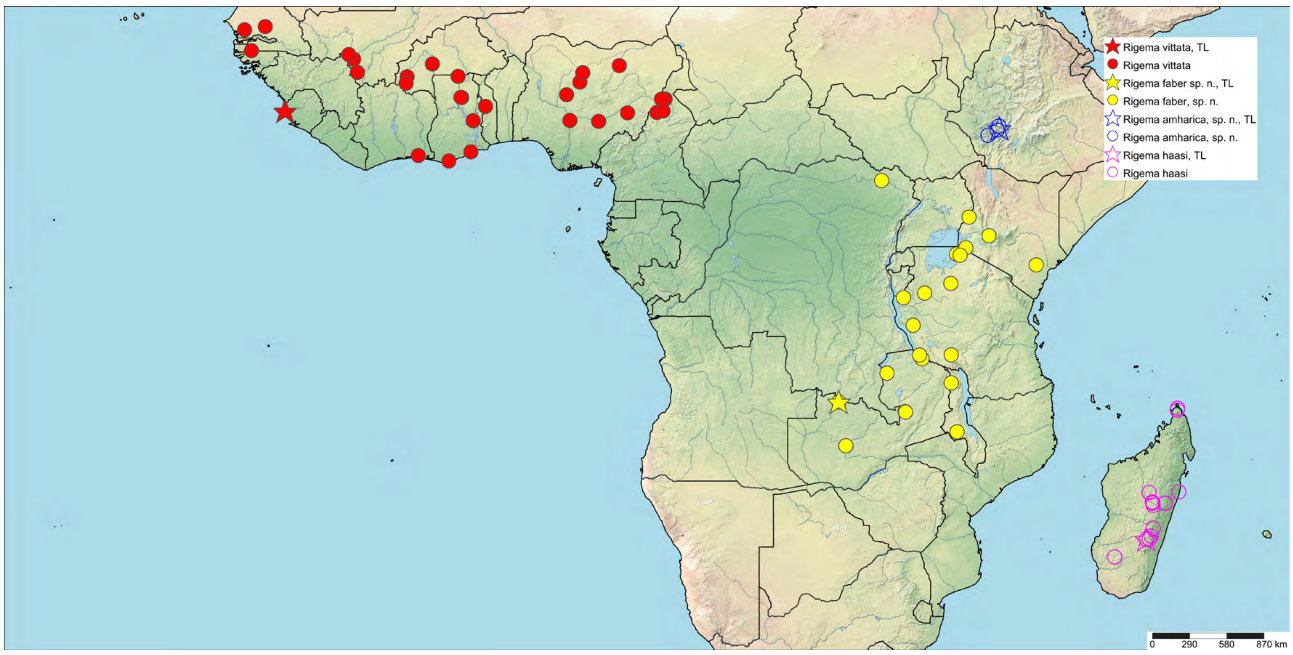


Figure 9. Distribution of *Rigema vittata*, *R. faber* **sp. n.**, *R. amharica* **sp. n.**, and *R. haasi*.

Additional material examined. **Angola**. 1 ♂, prov. Cuanza Sul, 26 km E Cassongue, 11°52.257'S, 15°09.320'E, 1650m, 28.iii.2014, leg. Ott & Sulak; 2 ♂♂, Prov. Huambo, between Cacula and Benguela, 14°49.302'S, 14°13.690'E, 1447m, 22.iii.2014, leg. Sulak, Naumann & Ott, GS: MWM 35.253; 1 ♂, N'Dalla Tando [9°18'S, 14°55'E], 2709 feet, 20.xi.1908, leg. Dr. W.S. Ansorge, GS: LG 5234 (ANHRT); 1 ♂, prov. Benguela, btw. Cutembo & Caluquembe, 14 km SE Cutembo, 13°47.905'S, 14°01.928'E, 1047m, 23.iii.2014, leg. Naumann, Ott & Sulak; 1 ♂, 1 ♀, prov. Huambo, 2km S Canalnque, 12°52.213'S, 15°28.126'E, 1970m, 27.iii.2014, leg. Naumann, Ott & Sulak, GS: MWM 35.252, MWM 35.254 (MWM/ZSM); 10 ♂♂, 1 ♀, Quirimbo [10°41'S, 14°18'E], 75 km E of P. Amboim, 300m, 7–12.v.1934, leg. Dr. K. Jordan, GS: NHMUK010315323 (♂); 1 ♂, Cachoeiras, 20 mls SW Gabela [10°57'S, 14°38'E], 18–19.iii.1972; 2 ♂♂, Bihe [12°23'S, 17°03'E], leg. Pemberton (NHMUK). **DRC**. 1 ♂, Ht. Katanga, Sakania [12°45'S, 28°33'E], 8.ii.1932 (MHNG); 3 ♂♂, Elisabethville [Lubumbashi 11°44'S, 27°26'E], 20.ii.1953, 14.iii.1953, 11.xii.1953, leg. Ch. Seydel, GS: NHMUK014333523; 1 ♀, Region de M'Pala [6°44'S, 29°29'E], leg. R.P. Guilleme, GS: NHMUK014333524 (NHMUK). **Kenya**. 1 ♂, South Coast, Shimba Hills Lodge, 4°11'33.13"S, 39°25'31.74"E, 5–6.viii.2019, leg. Sz. Sáfián, GS: ANHRT 01618 (ANHRT). 1 ♂, Kabete [1°13'S, 36°41'E], 10. iii.1972, leg. Dr. Politzar; 1 ♀, Buda Forest [4°28'S, 39°24'E], 15.i.–1.ii.1995, leg. Dr. Politzar (CGM). **Lesotho**. 1 ♀, Basutold, Likhoele [29°49'S, 27°18'E], leg. Dierlin, paratype (SAMC). **Malawi**. 1 ♂, Zomba [15°23'S, 35°20'E], Nyasaland, leg. H. Barlow (USNM). **Mozambique**. 1 ♂, Prov. Gaza, between Massangena and Chitobe, Duame, 21°27'01"S, 33°10'28"E, 150m, 17.ii.2016, leg. H. Sulak. S. Naumann & E. Ott; 1 ♂, Maputo Special Reserve, Ponta Milibangalala, Dune Grassland, 26°26'58.6"S, 32°55'29.8"E, 15m, 17–21.ii.2018, MV Light Trap, László, G., Mulvaney, J., Smith, L. leg. (ANHRT); 1 ♂, Ibo Island [12°21'S, 40°36'E], GS: NHMUK014333518 (NHMUK). 1 ♀, Ponta do Ouro [26°51'S, 32°89'E], 18–30.xii.2012 (CGM). **Namibia**. 1 ♀, Caprivi reg., Kongola, 17.807933°S, 23.343688°E, 11–12.xi.2012, 1050m, leg. Naumann, Ott & Sulak (CAS). **RSA**. 1 ♀, Blaney C.P. [25°15'S, 27°06'E], 6.x.1943 Clark; 1 ♂, Krüger N.P. Gate, Garden of Protea Hotel [24°59'S, 31°29'E], 300m, 22–23.iii.2014, leg. M. Hluchy & Gy.M. László, GS: LG 4582; 5 ♂♂, Krüger NP, Camp Berg-en-Dal [25°26'S, 31°27'E], 350m, 29–30.xi.2011, leg. M. Hluchy & Gy.M. László; 1 ♂, N. Drakensberg-Region, Royal NP, Hlalanathi [28°40'S, 29°02'E], 1800m, 20–24.i.2002, leg. de Freina; 2 ♂♂, Limpopo Prov., Soutpansberg Mts, 11 km N Louis Trichard, The Ultimate Guest House, 1200m, 22.983415°S, 29.912823°E, 22.xi.2016, leg. H. Sulak, A. Prozorov & R. Yakovlev (ANHRT); 1 ♂, Natal, St. Lucia Sanctuary, 20m, 28°17'S, 32°25'E, 12–13.ii.1989, leg. Oberprieler & Nässig; 1 ♂, Mpumalanga, Hazyview [25°03'S, 31°07'E], 1100m, 15.i.2002, leg. Murzin, GS: GU 89-26 (CAS); 1 ♂, Zululand, Kranzkloof [29°46'S, 30°51'E], 1 ♀, East Pondoland [31°21'S, 29°16'E]; 1 ♂, OFS, Farm Abel 52, 14 km E Parys, 28°54'S, 27°35'E, 7–8.i.1994, leg. M. Krüger; 1 ♀, Pretoria [25°45'S, 28°11'E], 30.ii.07, A.J.T.

Janse (TMSA); 1 ♂, Mpumalanga, 5km SW Lydenburg [25°08'S, 30°25'E], 1550m, 17–21.xii.2009, leg. De Freina GS: MWM 23.096; 4 ♂♂, 2 ♀♀, KwaZulu Natal, südl. Drakensberg-Region, 30 km SSW Underberg, Coleford National Reserve, [30°00'S, 29°17'E], 1750–1900m, 24–29.xii.1999, leg. De Freina, GS: MWM 23.350 MWM 23.351 (MWM/ZSM); 1 ♂, Pullen Farm, 30 km SE Nelspruit [25°41'S, 31°10'E], 24–26.xi.2004, leg. W. Mey (MfN); 1 ♂, 1 ♀, Prov. Limpopo, Waterberg mountain, Moonriver, Bush Bungalow, 24°13'S, 28°23'E, 1520m, 27–29.xi.2014, leg. R. & S. Fiebig (CRF); long series of both sexes from the following localities: Modderfontein [26°05'S, 28°09'E], Transvaal; Malvern [26°10'S, 28°03'E], Natal; Durban [29°51'S, 30°58'E]; Umtata [31°36'S, 28°46'E], Pondoland; Estcourt [29°02'S, 29°54'E], Natal; Umkomaas [30°12'S, 30°46'E], Natal; Verulam [29°39'S, 31°02'E], Natal; Katberg [32°29'S, 26°39'E], E. Cape; Karkloof 29°18'S, 30°14'E], Natal; Cathedral Peak [28°56'S, 29°08'E], Drakensberg; Piet Retief [27°00'S, 30°49'E], Transvaal; Pretoria [25°37'S, 28°15'E]; Pietermaritzburg [29°36'S, 30°20'E]; Mooi River [29°13'S, 29°59'E]; Howick [29°28'S, 30°13'E], Natal; Libode [31°31'S, 29°00'E], W. Pondoland; Newcastle [27°43'S, 30°02'E], Natal; Himeville [29°44'S, 29°31'E]; Barberton [25°47'S, 31°02'E]; Port St Johns [31°38'S, 29°33'E], Pondoland (NHMUK). **Tanzania**. 1 ♂, Dar es Salaam [6°45'S, 39°13'E], GS: NHMUK014333522 (NHMUK). **Zambia**. 18 ♂♂, Kapishya Hot Springs, Shiwa N'gandu Estate, 11°10'13"S, 31°36'00"E, 1437m, xii.2014, i–iii.2016, i–iii.2017, i.2015, iii. 2015, ex M. T. Harvey coll.; 3 ♂♂, same site, 22. xi.–8.xii.2015, leg. Oram, D., Smith, R., Takano, H.; 4 ♂♂, Kalungu, north of Isoka, King's Highway Rest Camp, 9°40'52"S, 32°42'50"E, 1280m, 5–8.iii.2017, 11.iii.2017, 12–13.xii.2023, actinic and MV light trap, collectors: László, G., Miles, W., Morgan, L., Oram, D., Smith, L., Volynkin A. leg.; 6 ♂♂, 4 ♀♀, Muchinga Prov., Benyanga village, 10°40'41"S, 33°27'45"E, 1250m, 7–12.xii.2023, actinic, LepiLED and MV light trap, László, G., Morgan, L., Volynkin, A. leg.; 2 ♂♂, 1 ♀, Muchinga Prov., Mama Muwowo's Lodge, 10°32'40"S, 33°26'05"E, 1230m, 6–7.xii.2023, actinic and MV light trap, László, G., Morgan, L., Volynkin, A. leg.; 2 ♂♂, Muchinga Province, 30 km N of Mpika, Danger Hill, 11°37'38"S, 31°33'56"E, 1684m, 13–15.xii.2023 MV light trap, László, G., Morgan, L., Volynkin, A. leg.; 2 ♂♂, 1 ♀, Senka Hill, Mukulizi Forest Reserve, Muchinga Province, 09°05'43"S, 32°05'06"E, 1566m, 1–6.v.2019, MV Light Trap, Dérozier, V., László, G., Miles, W. leg., GS: LG 5218 ♂, LG 5219 ♀; 1 ♂, 1 ♀, Changwena Falls, N. Swaka F.R., Central prov., 13°22'48"S, 29°33'18"E, 1456m, 27–30.i.2019, MV Light Trap, Dérozier, V., Mulvaney, L., Takano, H. leg.; 1 ♂, Muchinga Province, Jombo village, 10°27'01"S, 33°14'30"E, 1400m, 30.xi.–5.xii.2023, MV light trap, Bashford, M., Collins, A., László, G., Morgan, L., Volynkin, A. leg.; 1 ♂, Camp near Kanyama, (Miombo/Riverine/Dambo mosaic), 11°25'36"S, 24°40'00"E, 1375m, 4–7. xii.2019, actinic light trap, Bashford, M., Miles, W., Mulvaney, L. leg.; 1 ♂, Ntumbachushi Falls, Ngona River, Luapula Prov., 9°51'12"S, 28°56'41"E, 1166m, 3–4.xi.2014, Light Trap, leg. Smith, Takano & Oram; 1 ♀, Chilambwe Falls, Kafubu River, 9°50'13"S; 30°43'35"E, 1420m, 8–9.xi.2014, Light Trap, leg. Smith, Takano & Oram, GS: ANHRT 00233 (LG 4593); 1 ♂, same site, 8–12.ii.2019, leg. Dérozier, V., Mulvaney, L., Smith, R., Takano, H.; 4 ♂♂, 1396m, Chitunta Plain (Miombo/Dambo mosaic), 11°29'12"S, 24°24'18"E, 29.xi.–4.xii.2019, 11–17.vi.2021, 10–16.xii.2020, actinic, LepiLED and MV light trap, Bashford, M., Chizuwa, D., Choongo, W., Miles, W., Mulvaney, L.; 2 ♂♂, Ikelenge, Hillwood, 11°16'02"S, 24°18'59"E, 1400m, 30.x.–3.xi.2017, MV Light Trap, Carter, M., Lloyd, A., Miles, W., Oram, D., Smith, R. leg.; 1 ♂, 1 ♀, Nkwali, S. Luangwa GMA, 13°07'03"S, 31°44'16"E, 529m, 10–18.xi.2012, Light Trap, leg. Smith, R. & Takano, H.; 2 ♂♂, Kambishi, Jiwundu, 11°54'39"S, 25°29'05"E, 1340m, 18–19.x.2014, Light Trap, leg. Smith, Takano & Oram, GS: ANHRT 00230 (LG 4584); 1 ♂, Lyangu, Liuva Plain NP, 14°46'51"S, 22°34'44"E, 12–15.xi.2013, light trap, leg. Smith, Takano & Oram; 2 ♂♂, Mayukuyuku, Kafue NP, 14°54'55"S, 26°03'47"E, 1080m, 21–26.xi.2013, Light Trap, leg. Smith, Takano & Oram, GS: ANHRT 00229 (LG 4583); 1 ♂, Mutinondo Wilderness Area, Mpika, Northern Prov., 12°27'06"S, 31°17'30"E, 1460m, 14–17.ii.2019, LepiLED light trap, Derozier, V., Mulvaney, L., Takano, H. leg.; 1 ♂, Kasanka River Pontoon, Kasanka N.P. 12°34'23"S, 30°14'05"E, 1191m, 2–4.xii.2012, Light Trap, leg. Smith, R & Takano, H., GS: ANHRT 00231 (LG 4585); 1 ♀, Fibwe Mushitu, Kasanka NP, 12°35'15"S, 30°14'52"E, 1191m, 2–4.xii.2012, actinic light trap, leg. Smith, R. & Takano, H., GS: ANHRT 00232 (LG 4586); 1 ♂, Ndanda, E. Mongu, 15°04'44"S, 23°45'59"E, 1090m, 10–11.xi.2013, Light Trap, leg. Smith, Takano & Oram; 2 ♂♂, Jiwundu Swamp, 11°51'54"S, 25°33'20"E, 1340m, 25–30.x.2017, MV Light Trap, Carter, M., Lloyd, A., Miles, W., Oram, D., Smith, R. leg.; 16 ♂♂, Bruce-Miller Farm Choma, 16°38'12"S, 27°01'30"E, 1179m, 28.ii.–8.iii.2019, MV Light Trap, Derozier, V., Imakando, M., Miles, W., Mulvaney, L. leg.; 1 ♀, Kafue NP, 2 km W Grenzbereich, 1207m, 14°53.75'S, 25°27.35'E, 2.i.2011, leg. Beck, R. & Wanninger, R. (ANHRT); 4 ♂♂, 3 ♀♀, Gimson, N. Rhodesia, GS: NHMUK014333525 (♂); 1 ♀, Mumbwa

[14°59'S, 27°04'E], 25.xii.1957, leg. F.C. Dening (NHMUK). **Zimbabwe**. 1 ♀, Salisbury [17°50'S, 31°03'E], 9.ii.63, leg. A.J. Duke, GS: TM 17.028 (TMSA); 2 ♂♂, 1 ♀, Mashonaland, leg. H.B. Dobbie, GS: NHMUK014333521 (♀); 3 ♂♂, Salisbury, xi.1900, 1902, leg. G.A.K. Marshall, GS: NHMUK014333520; 1 ♂, Bromley, leg. Sir C. Morris; 1 ♂, 1 ♀, Umtali [18°57'S, 32°38'E], leg. G.A.K. Marshall (NHMUK).

Diagnosis. Forewing length in males ranges from 16–24 mm, and in females from 20–24 mm. The forewing exhibits a conspicuous violet-brown sheen in the submarginal area; the ground colour and pattern are generally paler than in *R. orientalis* and *R. witti* **sp. n.**, including the submarginal region. The anal margin of the forewing is accentuated by a relatively broad brownish-pink shade. Sexual dimorphism is limited and expressed primarily through the broader forewings of females.

Male genitalia. The configuration of the uncus, socii, and valvae shows some variability; however, the species is readily distinguished by the phallus, which bears a pair of robust, curved, pointed medio-lateral processes of approximately equal length, a character unique within the entire genus.

Female genitalia. The female copulatory organ is characterised by a broad ostium bursae with a widely sclerotised margin, a short, quadrangular antrum, and a robust, strongly sclerotised ductus bursae that is curved anteriorly. The corpus bursae contains a relatively small, pointed, claw-like pair of posterior sclerotised plates, and an inconspicuous, small signum bursae.

Distribution. *Rigema ornata* is widely distributed in eastern and southern Africa with confirmed records from Angola, DRC, Kenya, Lesotho, Malawi, Mozambique, Namibia, RSA, Tanzania, Zambia and Zimbabwe.

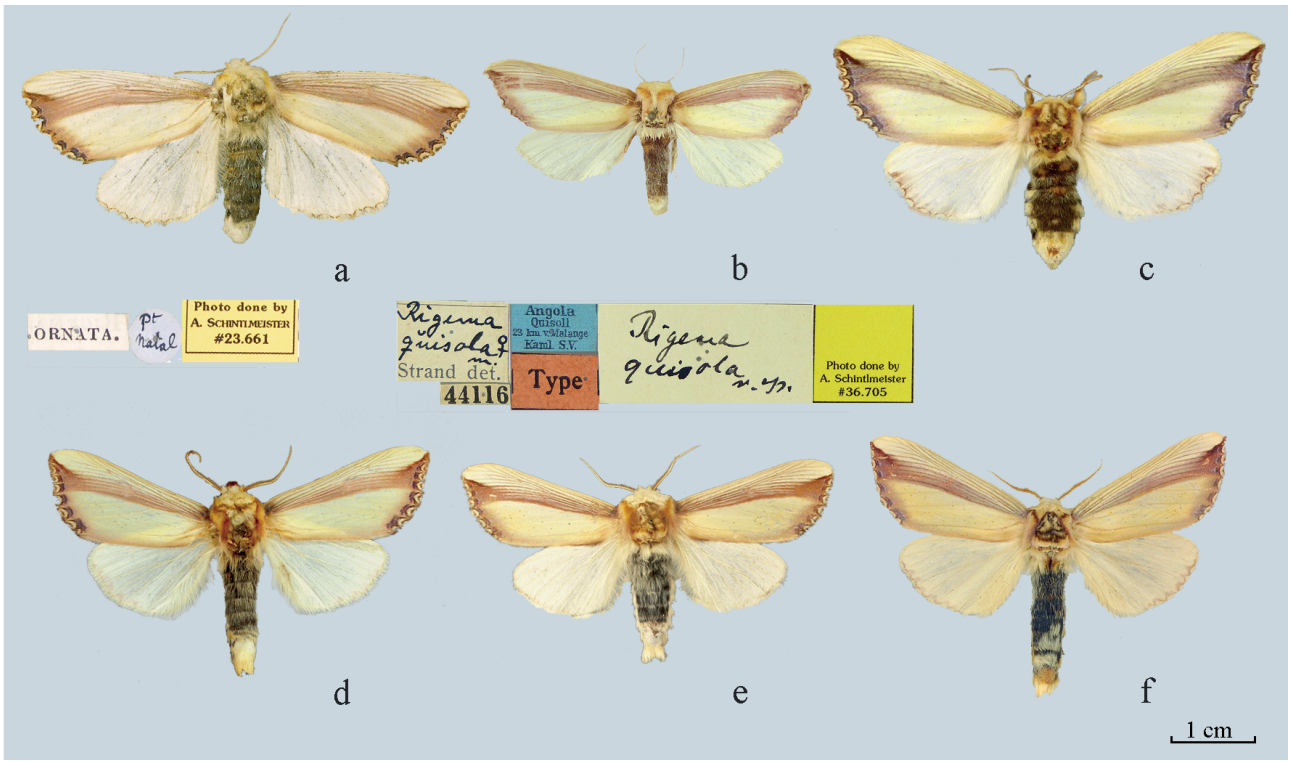


Figure 10. *Rigema ornata,* adults. **a)** ♀, RSA, Durban, lectotype and associated labels (NHMUK); **b)** ♀, Angola, Malanje, holotype of *Rigema quisola* Strand, 1912 and associated labels (MfN); **c)** ♀, Zimbabwe, Harare (TMSA); **d)** ♂, RSA, KwaZulu Natal, Coleford National reserve (MWM/ZSM); **e)** ♂, RSA, Freestate, 14 km E Parys (TMSA); **f)** ♂, Zambia, Muchinga, Mukulizi Forest (ANHRT).

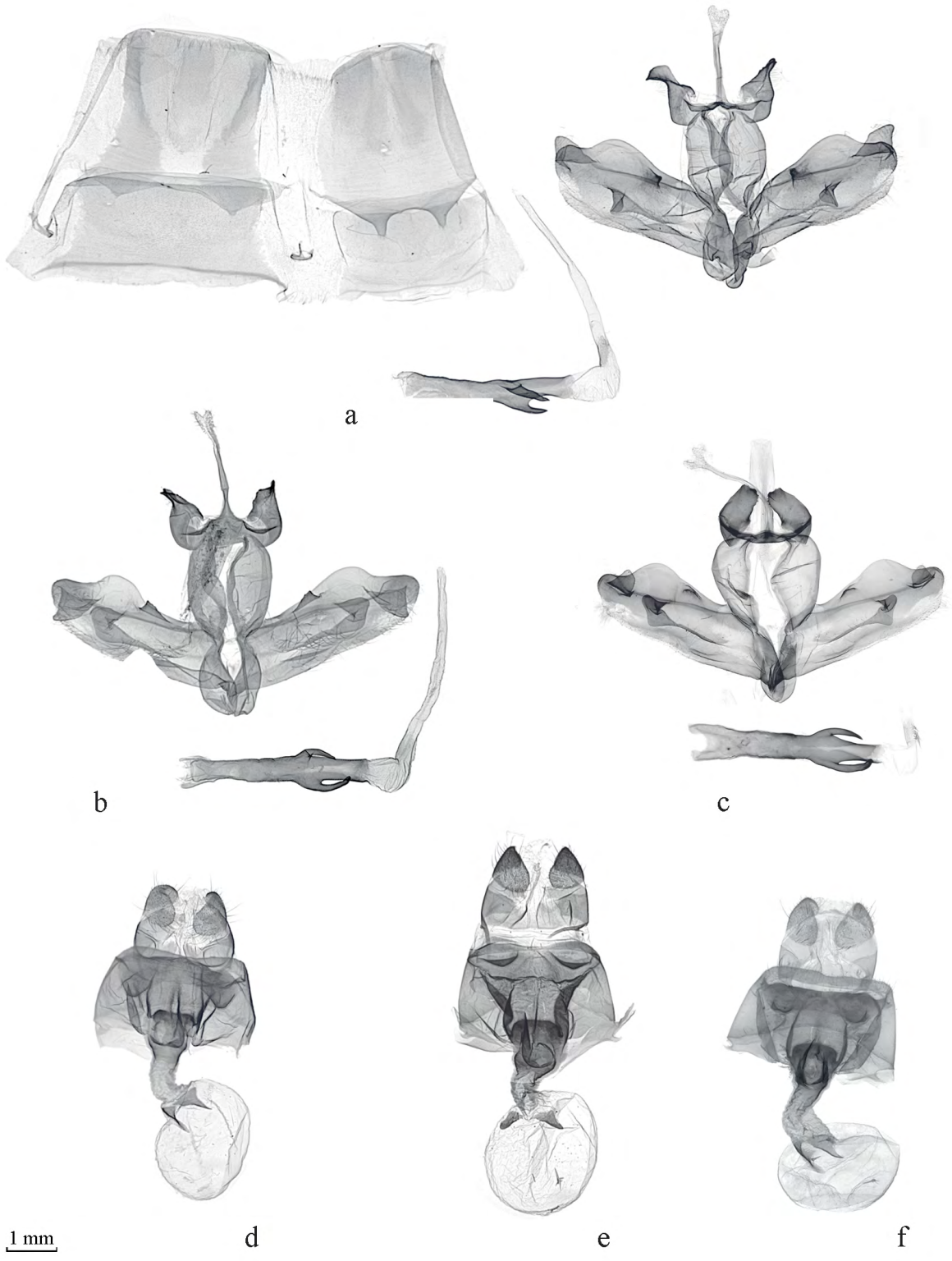


Figure 11. *Rigema ornata,* genitalia. **a)** ♂, Angola, Huambo, 2 km S Calanque, GS: MWM 35.254 (MWM/ZSM); **b)** ♂, Zambia, Kasanka N.P., GS: LG 4585 (ANHRT); **c)** ♂, RSA, Hazyview, 1100m, GS: GU 89-26 (CAS); **d)** ♀, Angola, Huambo, btw. Cacula and Benguela, GS: MWM 35.253 (CAS); **e)** ♂, Zambia, Kasanka N.P., GS: LG 4585 (ANHRT); **f)** ♀, Zimbabwe, Harare, GS: TM 17.028 (TMSA).

***Rigema witti* Schintlmeister & László, sp. n.**
(Figs 12, 13, 14)
http://zoobank.org/urn:lsid:zoobank.org:act:2770D36C-89B3-4B8A-97DB-BB3865508F5E

Holotype. ♂, "[Tanzania] TANZANIE : Iringa Region, / Kipengere Mts., Lugenge / Moorland, 2060m, 9°24. / 864' S, 034°34.822' E, 10- / I-2006 (local collector) ex / coll. Ph. Darge" // GS: MWM 35.249 (CAS).

Paratypes (92 ♂♂, 21 ♀♀ in total). **DRC**. 1 ♂, Masisi [1°24'S, 28°49'E], Oso-Lowa watershed, N.W. Kivu, 4000 ft., forest with some grass, ii.1924, wet season, leg. T.A. Barns (NHMUK). **Kenya**. 13 ♂♂, Suna, S. Kavirondo [1°05'S, 34°28'E], iii.1931, xi.1931, xii.1931, iii.1932, iv.1932, leg. W. Feather, GS: NHMUK014333514; 2 ♂♂, same locality, iv.1932, leg. Van Someren; 6 ♂♂, Hoey's Bridge [= Moi's Bridge, 1°36'S, 34°03'E], leg. Capt. Pitman, GS: NHMUK014331097, NHMUK014331099; 10 ♂♂, Kitale [1°01'N, 35°00'E], iv.–v.1935, leg. G.W. Jeffery, GS: NHMUK014331090, NHMUK014331094; 5 ♂♂, same locality and collector, vi.–vii.1934; 1 ♂, same locality and collector, iv.1927; 1 ♂, same locality and collector, 23.iii.1930; 2 ♂♂, same locality and collector, without date; 1 ♂, same locality, 28.iii.1925, without collector; 1 ♂, same locality, 18.iii.1925, without collector; 1 ♂, Athi ya Mawe [= Mto Mawe Bridge, 1°28'S, 37°00'E], 14.iv.1899, leg. C.S. Betton, GS: NHMUK014331093; 1 ♂, 1 ♀, Mt. Elgon [1°06'N, 33°29'E], v.1934, leg. T.H.E. Jackson, GS: NHMUK014331092; 1 ♂, same site and collector, 1926; 2 ♂♂, Mt. Elgon [1°03'N, 34°45'E], iv.1925, leg. G.W. Jeffery, GS: NHMUK014331095; 1 ♂, Nakuru 0°18'S, 36°06'E, leg. H.A. Bodeker; 2 ♂♂, Eb Urru [0°37'S, 36°15'E], 18.v.1900, 1.vi.1900, leg. C.S. Betton; 1 ♂, Kibwezi [2°24'S, 37°58'E], ii.1936, leg. G.W. Geoffrey; 1 ♀, Jombeni [0°26'S, 36°58'E], 4000 ft., x.1911, leg. A.B. Percival; 1 ♀, Athi Plains [1°25'S, 36°54'E], leg. R. Ford; 4 ♂♂, Nairobi [1°17'S, 36°49'E], 10.iv.1905, leg. F.J. Jackson GS: NHMUK014331100; 1 ♂, same site and collector, 5.iv.1905; 2 ♂♂, 3 ♀♀, same site and collector, 2.iv.1905; 3 ♂♂, 1 ♀, same site and collector, 9.iv.1905; 1 ♂, same site and collector, 12.iv.1905; 3 ♂♂, same site and collector, 14.iv.1905; 2 ♂♂, same site and collector, 11.iv.1905; 2 ♂♂, same site and collector, 24.iii.1905, 25.iii.1905; 1 ♂, same site and collector, 26.iii.1905; 1 ♂, same site and collector, 27.iii.1905; 3 ♂♂, same site and collector, 28.iii.1905; 1 ♂, 1 ♀, same site and collector, iii.1905; 1 ♂, same site and collector, 30.iii.1905; 2 ♂♂, 1 ♀, same site, leg. D.M. Hopkins; 1 ♀, same site, iv.1927, leg. D.M. Hopkins; 1 ♀, same site, leg. A.F.J. Gedye; 1 ♀, same site, without date and collector; 1 ♂, Nairobi to Mt. Kenya (NHMUK).

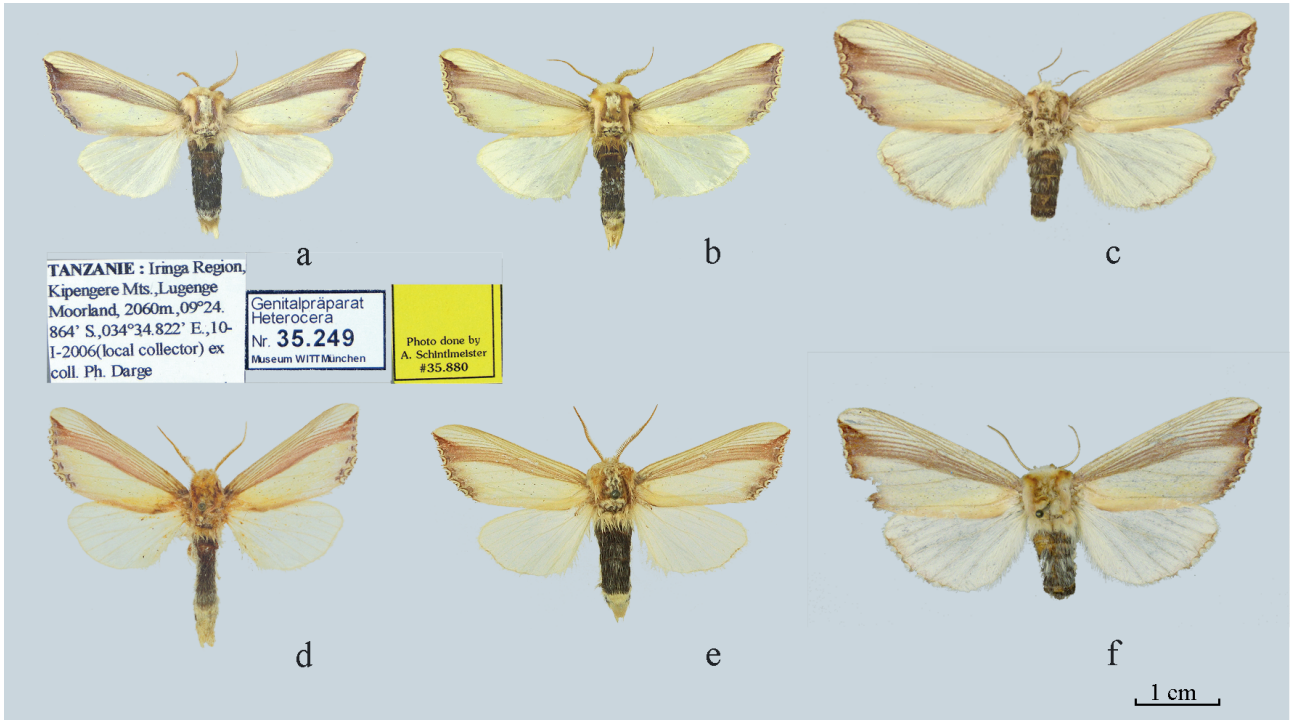


Figure 12. *Rigema witti* **sp. n.**, adults. **a)** ♂, Tanzania, Iringa, Kipengere Mts., holotype (CAS); **b)** ♂, Tanzania, Iringa, Kipengere Mts., paratype (CAS); **c)** ♀, Tanzania, Rukwa, 14 km W Namanyere, paratype (CAS); **d)** ♂, Kenya, Moi's Bridge, paratype (NHMUK); **e)** ♂, Tanzania, Iwawa (NHMUK); **f)** ♀, Zambia, Kafue National Park (CGM).

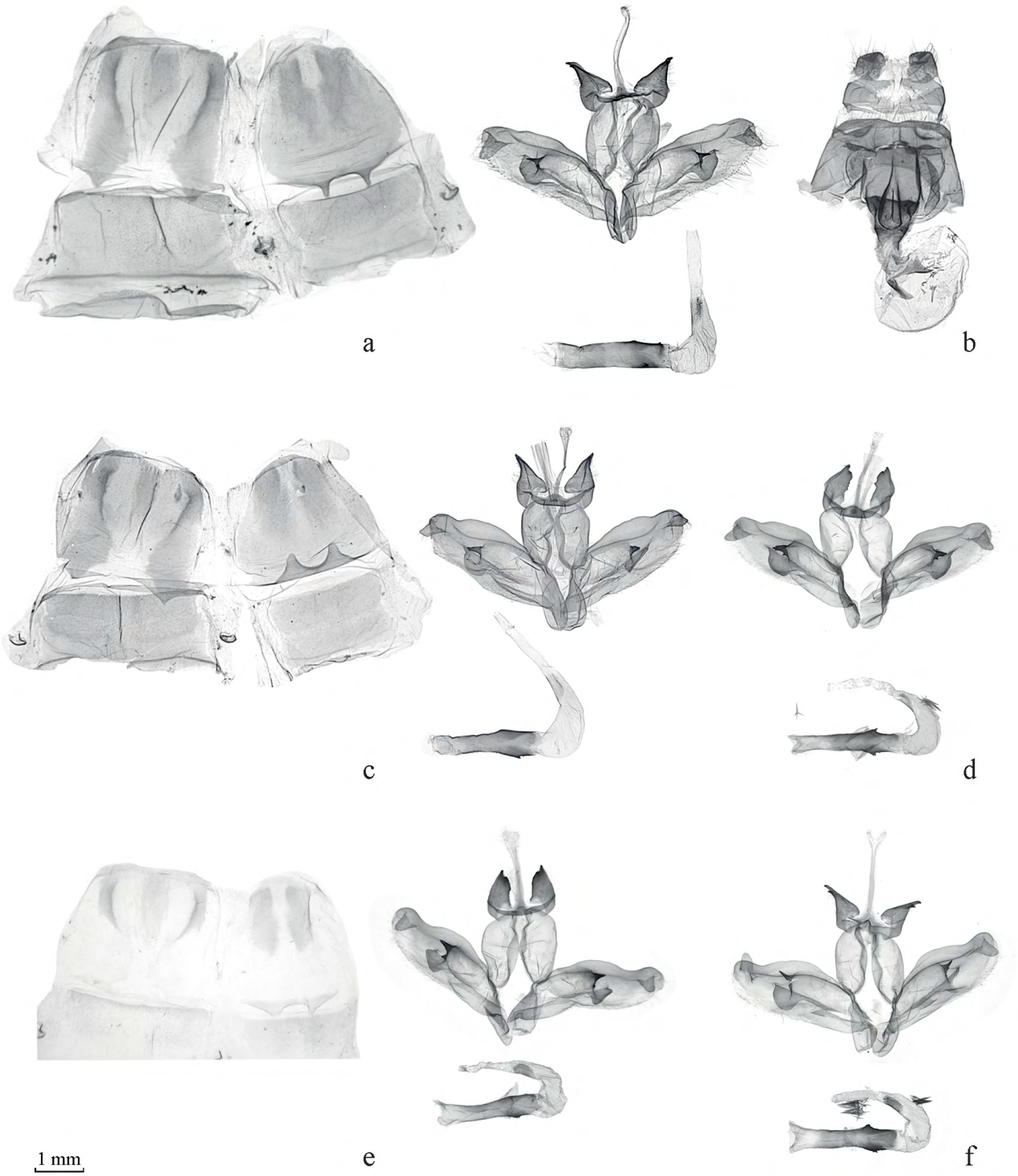


Figure 13. *Rigema witti* **sp. n.**, genitalia. **a)** ♂, Tanzania, Iringa, Kipengere Mts., holotype, GS: MWM 35.249 (CAS); **b)** ♀, Tanzania, Rukwa, 14 km W Namanyere, paratype, GS: MWM 35.251 (CAS); **c)** ♂, Tanzania, Iringa, Kipengere Mts., paratype, GS: MWM 35.250 (CAS); **d)** ♂, Tanzania, Iwawa, GS: NHMUK014331088 (NHMUK); **e)** ♂, Kenya, Hoey's Bridge, GS: NHMUK014331099 (NHMUK); **f)** ♂, Kenya, Mt. Elgon, GS: NHMUK014331095 (NHMUK).

Malawi. 1 ♀, Nyasaland, Port Herald [Nsanje, 16°55'S, 35°16'E], ii.–v.1913, leg. J.B.S. Old, GS: NHMUK 014333519; 1 ♀, N. Nyasa [9°40'S, 33°51'E], leg. J.B. Davey; 1 ♀, Kasangazi, near Bandawe [11°53'S, 34°09'E], 3000 ft above L. Nyassa, leg. Dr. Prentice (NHMUK). **Tanzania**. 1 ♀, Rukwa region, 14km W Namanyere, 1290m, 7°27.289'S, 30°54.498'E, 14.xi.2005, leg. Ph. Darge, GS: MWM 35.251 (MWM/ZSM); 1 ♂, same data (CGM); 1 ♂, Iringa Region, Kipengere Mts., Uwemba, 2130 m, 9°29.073'S, 34°46.880'E, 10.xii.2005, leg. Ph. Darge, GS: MWM

35.250; 1 ♂, Chadolo Forest, Njombe [9°22'S, 34°48'E], iii.2005, leg. local collector (CAS); 3 ♂♂, same site and collector, 20.i.2005 (CGM); 1 ♂, Mikumi N.P. Campsite [7°21'S, 37°08'E], 3460m, 14.x.2004, leg Darge (CGM); 1 ♀, Tanga, 3°17.242'N 39°3.994'E, 19.v.2010, leg. W. Struulaart & K. Usurano van der Meerhi (CAS); 1 ♀, Njassa-See, [= Lake Malawi], Mango [9°31'S, 33°57'E], 7.xii.1958, leg. P. Fischer (ZSM); 1 ♂, Iwawa, 8000 ft., 9°25'S, 34°35'E, 26.i.1952, leg. W. Peters, GS: NHMUK014331088; 1 ♂, 1 ♀, Tabora [5°03'S, 32°49'E], leg. R.P. Hauttecoeur, GS: NHMUK014333515 (♀); 1 ♂, Njombe [9°22'S, 34°48'E], 6000–6500 ft, 18.i.1952, leg. Dr. W. Peters; 1 ♂, Kilosa [6°49'S, 36°59'E], 13.xii.1925, leg. N.C.E. Miller; 1 ♂, Mbeya [8°54'S, 33°27'E], 28.xi.1950, leg. H.R. Kettlewell; 1 ♂, Arusha District, Ngorongoro Crater, Interior at 5800 ft., Edge of forest at east side [3°09'S, 35°39'E], iii.1921, leg. T.A. Barns; Chunya District, Chunya [8°32'S, 33°26'E], 2650m, 9.ii.1947, leg. G. Swynnerton; 1 ♂, Kilwa [5°32'S, 37°32'E], 12.ii.1900, leg. Reimer; 1 ♀, W. Kilimanjaro, Ngare-Nairobi [3°03'S, 37°03'E], 4–5,000 ft, ii.–iii.1937, leg. R. Cooper, GS: NHMUK014333516; 1 ♀, Mt. Meru [3°15'S, 36°41'E], Kenya distr., 5600 ft, xi.1920, leg. W.N. van Someren (NHMUK).

Diagnosis. Forewing length in males is 18–20 mm, and in females 24–25 mm. *Rigema witti* **sp. n.** is superficially similar to *R. ornata* but is distinctly smaller. The forewing bears a noticeably broader and darker brownish-violet longitudinal stripe, and the veins in the costal area are more sharply defined by darker brown scaling. The fringe consists of yellow semilunar elements bordered by pale violet-brown; in *R. ornata*, the violet sheen of the semilunar elements is distinctly darker. The anal margin of the forewing in *R. witti* **sp. n.** is marked by a much paler strip compared with the allied species, and the hindwings are similarly pale yellow. The female resembles the male but has very short antennal rami and slightly broader forewings.

Male genitalia. The clasping apparatus is characterized by a slender uncus, approximately 20% shorter than that of *R. ornata*, with a much smaller, dilated, reverse-triangular apex. The socii, although somewhat variable in shape as illustrated, are broad at the base with rounded anterior margins, then gradually tapering to an apically pointed, leaf-like form, in contrast to the more flag-shaped socii of *R. ornata*. The valvae of the new species are markedly shorter than those of all other known *Rigema* species and possess a less dilated costal margin. The phallus of *R. witti* **sp. n.** lacks elongate projections; instead, it bears a pair of small, sclerotised spines situated latero-postmedially, whereas the phallus of *R. ornata* is armed with well-developed, acute lateral processes.

Female genitalia. The copulatory organ exhibits a considerably wider ostium bursae, an anteriorly more tapered and more heavily sclerotised funnel-like antrum (more quadrangular in *R. ornata*), and a ductus bursae that is approximately 50% shorter than that of *R. ornata*. The corpus bursae lacks a signum. The overall size of both male and female genitalia in the new species is relatively small and appears to be the smallest within the genus.

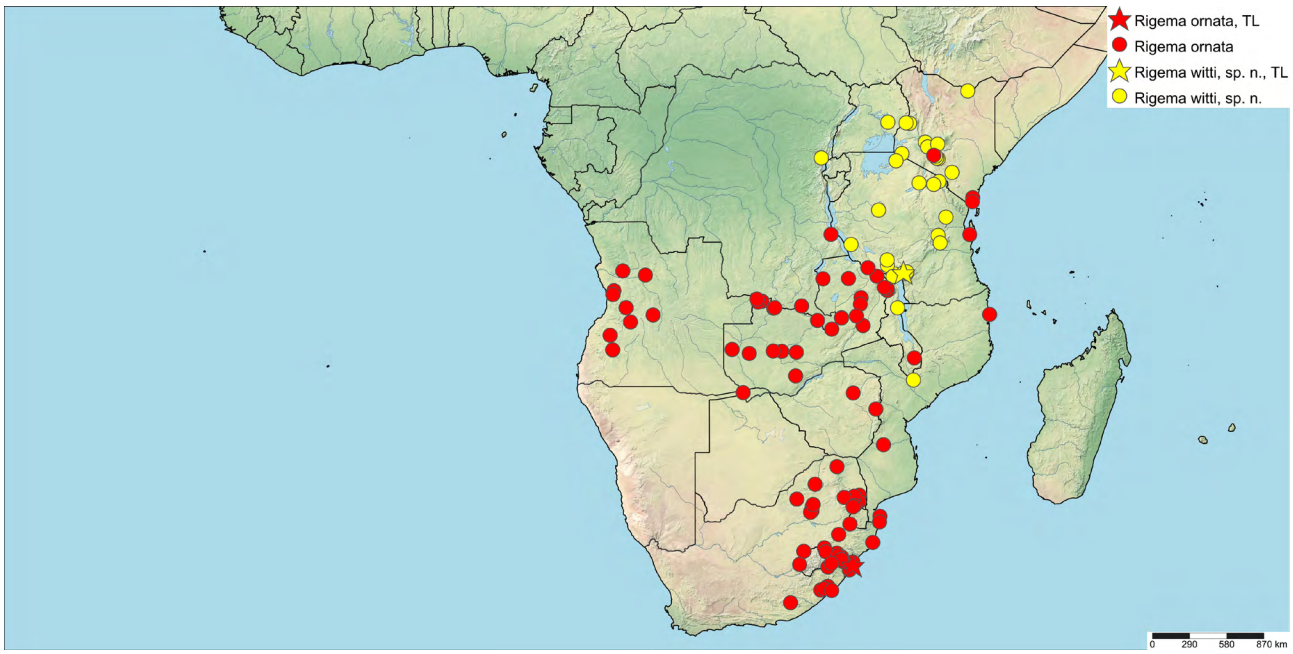


Figure 14. Distribution of *Rigema ornata* and *R. witti* **sp. n.**

Etymology. The new species is dedicated to the memory of the late Thomas J. Witt (born 2 September 1947 in Bad Reichenhall; died 28 January 2019 in Munich), founder of the Museum Witt and one of the most significant patrons of Lepidopterology. The extensive material housed in the MWM (recently transferred to the ZSM) constitutes one of the essential foundations for the authors' studies on African Notodontidae.

Distribution. *Rigema witti* **sp. n.** is known from East Africa with confirmed records from the Kivu region of the DRC, Kenya, Malawi and Tanzania.

Rigema orientalis orientalis Strand, 1912

(Figs 15, 16, 20)

Rigema Woerdeni var. *orientalis* Strand, 1912: *Fauna exotica* **1** (14): 53.
= *Rigema Woerdeni* var. *centralis* Strand, 1912, *Fauna exotica* **1** (14): 50.

Type material examined. **Lectotype** of *Rigema woerdeni* var. *orientalis* (designated by Schintlmeister & Witt (2015)): ♂, [red label] "Type" // [Tanzania] "Ost-Afrika / Dar-es-Salaam [6°49'S, 39°17'E] / ex coll. Fruhstorfer" // [with partially handwritten] "Rigema / Woerdeni / Sn. v. ori- / entalis / Strand det. / ♂ m. (MfN). **Holotype** of *Rigema woerdeni* var. *centralis*: ♀, [red label] "Type" // [blue label] "Centralafrika / 6 ° s. Br. 22-26 ° / ö. L. V. Gr. / P. Pogge" // "41744" // [partially handwritten] "Rigema / woerdeni / v. centra- / lis m. / Strand det." (MfN).

Remarks. **(1)** The original description of *Rigema woerdeni* var. *centralis* explicitly designates the specimen from "Zentralafrika" as the primary type. **(2)** The West African and East African populations of *R. orientalis* exhibit clear and consistent morphological differences (see diagnosis of the following taxon). Owing to these distinct characters, the West African populations are here recognized as a new subspecies.

Additional material examined. **Angola.** 1 ♀, N'Dalla Tando [9°17'S, 14°54'E], 2700 ft, 28.x.1908, leg. Dr W.J. Ansorge (NHMUK). **Burundi**. 1 ♂, Kitega [Gitega, 3°26'S, 29°56'E], 5.xii.1982, leg. Dr. M. Lafontain (RMCA). **Central African Republic**. 2 ♂♂, Fort Crampel [6°59'N, 19°12'E] (NHMUK). **DRC**. 2 ♂♂, Elisabethville [Lubumbashi 11°44'S, 27°26'E], 5.xii.1953, 19.xii.1933, leg Ch. Seydel (RMCA); 3 ♀♀, Kafakumba [9°40'S, 23°45'E], Katanga, xii.1928, ii.1927, 19.ii.1926 (NHMUK); 1 ♂, Luena [9°26'S, 25°47'E], Shaba, 9.xi.1986, GS: MWM 35.243 (CAS). **Ethiopia**. 2 ♂♂, Oromiya, btw. Leku and Wendo, env. Abosto, 1790m, 6°44.950'N, 38°26.612'E, 15–19.iv.2010, leg. H. Sulak, GS: MWM 35.246 (CAS); 1 ♀, Charada Forest [7°17'N, 36°23'E], Kaffa, 6000 ft, 31.v.1905, leg. Ph.C. Zaphiro (NHMUK). **Kenya**. Long series of both sexes, Suna, S. Kavirondo [1°05'S, 34°28'E], iii.1931, xi.1931, xii.1931, ii.1932, iii.1932, iv.1932, leg. W. Feather, GS: NHMUK010315324 (♂), NHMUK010315325 (♀); 10 ♂♂, 1 ♀, same site, iv.1932, leg. Van Someren; 7 ♂♂, Nairobi [1°21'S, 36°47'E]; 1 ♂, Nairobi, 11.iv.1905, leg. F.J. Jackson; 1 ♀, Nairobi, 19.iv.1927, leg. D.M. Hopkins; 1 ♀, Nairobi, 21.iv.1916, leg. W.A. Lamborn; 1 ♀, Nairobi, 14.vi.1919, leg. Van Someren; 5 ♂♂, Kitale [1°01'N, 35°00'E], iv.1925, 9.iv.1926, iv.–v.1935, leg. G.W. Jeffery; 1 ♀, Kitale, 24.v.1928, leg. G.W. Jeffery; 1 ♀, Mt. Elgon [1°03'N, 34°45'E], 1926, leg. T.H.E. Jackson; 1 ♂, Mt. Elgon, iv.1932, leg. T.H.E. Jackson; 1 ♂, Trans Nzoia, vii.1932, leg. T.H.E. Jackson (NHMUK). **Malawi**. 1 ♂, Zomba [15°23'S, 35°21'E]; 1 ♂ Zomba, i.1925, leg. H. Barlow; 1 ♀, Zomba, xi.–xii.1923, leg. H. Barlow; 1 ♂, Lenibe [Limbe=Blantyre 15°47'S, 35°02'E], i–ii.1926, leg. H. Barlow; 1 ♂, 1 ♀, Mlanje [16°01'S, 35°31'E], ii.1923, leg. H. Barlow; 1 ♂, 2 ♀♀, SW of Lake Chilwa [15°24'S, 35°33'E], 14–15.i.1914, leg. S.A. Neave; 1 ♂, Mt. Mlanje, 20.xii.1913, leg. S.A. Neave; 1 ♂, Lilongwe [13°58'S, 33°48'E], Agoniland, 29.i.1910, leg. Andrews; 1 ♀, same site and collector, 10.ii.1910 (NHMUK). **Mozambique**. 2 ♀♀, Ibo Island [12°21'S, 40°36'E] (NHMUK). **Namibia**. 1 ♂, Caprivi region, Kongola, 17.807993°S, 23.343688°E, 11–12. xi.2012, 1050m, leg. Elk Ott & H. Sulak (CAS). **Republic of Congo**. 8 ♂♂, Odzala-Kokoua National Park, Lobo Research Camp, 00°35'04"N, 14°53'12"E, 390m, 12–19.iv.2024, actinic, LepiLED and MV light trap, Bashford, M., László, G., Talani, M., Yaba Ngouma, S. leg., GS: LG 6470; 4 ♂♂, same site, 20–27.ix.2024, LepiLED and MV light trap, Bashford, M., László, G., Volynkin, A., Yaba Ngouma, S.; 2 ♂♂, same site, 22–30.xi.2024, MV light trap, Bashford, M., Elliott, I., Kirk-Spriggs, A. leg. (ANHRT). **South Sudan**. 1 ♂, East Equatorial State, Akotos prov., Lolibai Mts. [13°55'N, 32°52'E], 1300m, 15.viii.–10.ix.2010, leg. Vladimir Gurkho, GS: MWM 35.245 (MWM/ZSM); 4 ♀♀, White Nile, Lat. 10° to 11°, ix.1917, leg. Capt. Yardley; 2 ♀♀, Tembura [5°36'N, 27°28'E], xii.1922, Acq. Janson; 1 ♀, Wau [7°42'N, 28°00'E], Bahr-el-Ghazal, 1918 (NHMUK); 1 ♀, 400m, UNMISS Bentiu, 9°19'43"N, 29°47'18"E, 29.viii.2017, T.C. Nicholson-Roberts (ANHRT). **Sudan**. 2 ♂♂, 1 ♀, Prov. Blue

Nil, Tozi [10°50'N, 30°45'E], 12.viii.1959, 8.viii.1960, 5.viii.1968, leg. H. Schmutterer, GS: ZSM 01-02 (ZSM); 1 ♀, Khartoum [15°45'N, 32°27'E], leg. E.H. Armstrong (NHMUK). **Tanzania**. 1 ♂, Iringa, Mbya District, Utengule Village, 7°58'29"S, 33°17'30"E, 2290m, 1–31.i.2014, leg. W. Kilumile; 1 ♀, Kigoma [4°51'S, 29°40'E], 29.i.1972, leg. Kielland (ZSM);1 ♂, Iringa Region, Iyayi savanna, 1400m, 8°51.379'S, 34°31.200'E, 9.ii.2008, GS: MWM 22.758, leg. Ph. Darge; 1 ♂, Ruvuma Region, SE. Magingo, 1030m, 10°02.258'S, 35°38.945'E, 26.iii.2006, leg. Ph. Darge, GS: MWM 23.352; 1 ♂, 1 ♀, Iringa Region, Kipengere Range, Lugenge Forest, 2210m, 9°26.44'S, 34°35.906'E, 19.ii.2006, leg. local collector, GS: MWM 23.353, MWM 35.247 (MWM/ZSM); 1 ♂, Arusha District [3°23'S, 36°42'E], leg. Lieut. M.S. Moore; 1 ♀, Mikindani [10°17'S, 40°07'E], i.–v.1907, leg. Reimer (NHMUK). **Uganda**. 1 ♀, Mukono [0°22'N, 32°44'E], 6.x.1937; 1 ♀, Dufile [3°32'N, 31°57'E], Lado Enclave, 4.x.1912; 1 ♂, Ruwenzori Range, Bwamba Pass [0°40'N, 30°08'E], west side, 5500–7500 ft, xii.1934–i.1935, leg. F.W. Edwards; 1 ♀, Entebbe [0°04'N, 32°28'E], 4000 ft, 1.x.1911 (NHMUK). **Zambia**. 1 ♀, Solwezi [12°10'S, 26°23'E], 1.i.1918, leg. H.C. Dillman (NHMUK); 13 ♂♂, Kapishya Hot Springs, Shiwa N'gandu Estate, 11°10'13"S, 31°36'00"E, 1437m, xii.2014, i.–iii.2016, i.2015, iii. 2015, ex M. T. Harvey coll., GS: LG 5223, ANHRT 00236 (LG 4589); 4 ♂♂, same site, 22.xi.–8.xii.2015, leg. Oram, D., Smith, R., Takano, H.; 3 ♂♂, 1 ♀, Jiwundu Swamp, 11°51'54"S, 25°33'20"E, 1340m, 21–24.xi.2014, Light Trap, leg. Smith, R. & Takano, H., GS: ANHRT 00239 (LG 4592) ♀; 5 ♂♂, 1 ♀, Kambishi School, 11°54'42"S, 25°28'50"E, 1346m, 10–13.xi.2017 MV Light Trap, Carter, M., Lloyd, A., Miles, W., Oram, D., Smith, R. leg.; 1 ♂, Hillwood, Ikelenge, 11°16'02"S, 24°18'59"E, 1400m, 21–28.x.2013, Light Trap, leg. Smith, R., Takano, H., Chmurova, L. & Smith, L., GS: ANHRT 00237 (LG 4594); 3 ♂♂, Hillwood, Ikelenge (Miombo/Riverine forest mosaic), 11°16'02"S, 24°18'59”E, 1400m, 7–10.xii.2019, 23–30.xi.2019, actinic and MV light trap, Bashford, M., Miles, W., Mulvaney, L. leg.; 8 ♂♂, 1♀, Chitunta Plain (Miombo/Dambo mosaic), 11°29'12"S, 24°24'18"E, 1396m, 29.xi.–4.xii.2019, actinic, LepiLED and MV light trap, Bashford, M., Miles, W., Mulvaney, L. leg., GS: LG 5220 ♂; 1 ♂♂, same site, 11–17.vi.2021, Chizuwa, D. & Choongo, W. leg; 7 ♂♂, 1 ♀, same site and collectors, 10–16.xii.2020; 5 ♂♂, Zambezi Rapids (Miombo/Riverine forest mosaic), 11°7'30"S, 24°11'6"E, 1205m, 4–9.xi.2018, MV Light Trap, Aristophanous, M., Dérozier, V., László, G., Oram, D. leg.; 3 ♂♂, Lukwakwa, West Lunga NP, (Crytosepalum forest/Dambo), 12°39'40"S, 24°26'13"E, 1147m, 9–15.xi.2018, MV and LepiLED light trap, Aristophanous, M., Dérozier, V., László, G., Oram, D. leg.; 2 ♂♂, Muchinga Province, 30 km N of Mpika, Danger Hill, 11°37'38"S, 31°33'56"E, 1684m, 13–15.xii.2023, MV light trap, László, G., Morgan, L., Volynkin, A. leg.; 2 ♂♂, Chilambwe Falls, Kafubu River, 9°50'13"S, 30°43'35"E, 1420m, 8–12.ii.2019, MV light trap, Dérozier, V., Mulvaney, L., Smith, R., Takano, H. leg.; 4 ♂♂, Kalungu, north of Isoka, 9°40'52"S, 32°42'50"E, 1280m, 5–8.iii.2017, MV, Oram, D., Miles, W., Smith, L. leg.; 1 ♂, Nkwaji, Mwinilunga 11°36'22"S, 24°33'17"E, 1316m, 29.x.–3.xi.2013, Light Trap leg. Smith, R., Takano, H., Chmurova, L., Smith, L.; 1 ♂, same site, 3–10. xii.2020, Chizuwa, D., Choongo, W. leg.; 1 ♂, Mayukuyuku, Kafue NP, 14°54'55"S, 26°03'47"E, 1080m, 21–26. xi.2013, Light Trap, leg. Smith, Takano & Oram (ANHRT). **Zimbabwe**. 1 ♂, Mashonaland, leg. H.B. Dobbie; 1 ♀, Salisbury [17°50'S, 31°03'E], 1902, leg. G.A.K. Marshall; 1 ♂, Umtali [18°57'S, 32°38'E], leg. G.A.K. Marshall; 1 ♂, Vumba, Umtalia, i.1936, leg. J.E. Drysdale (NHMUK).

Diagnosis. Forewing length of males is 23–30 mm; that of females is 25–30 mm. *Rigema orientalis* resembles *R. witti* **sp. n.** but is distinctly larger. The brownish-violet field in the submarginal area of the forewing is broader and more clearly defined, and the anal margin of the forewing lacks the fuscous shading present in the latter species.

Male genitalia. The male genitalia of *R. orientalis* are readily separable from those of its congeners by the conspicuously long, slender, and apically pointed socii. The valva is more elongate than in the preceding species, and the editum bears a markedly smaller, triangular process, the shape of which shows slight intraspecific variation. The phallus is slightly constricted medially and carries a small, acute carinal spine.

Female genitalia. The female genitalia are characterized by a shorter and broader eighth tergite, which is more trapezoidal and more deeply notched proximally than in the previously discussed species. The ostium bursae is moderately wide with a straight, sclerotised margin, and the antrum is distinctly shorter and less heavily sclerotised than in *R. witti* **sp. n.** and *R. ornata*. The ductus bursae is moderately thick, membranous, and considerably longer than in the former species. The paired distal sclerotised plates of the corpus bursae are shorter than in most congeners, similar in size to those of *R. ornata* but less sharply pointed. In contrast to the aforementioned species, *R. orientalis* possesses a strongly sclerotised, elongate-elliptical signum bursae situated near the proximal end of the corpus bursae.

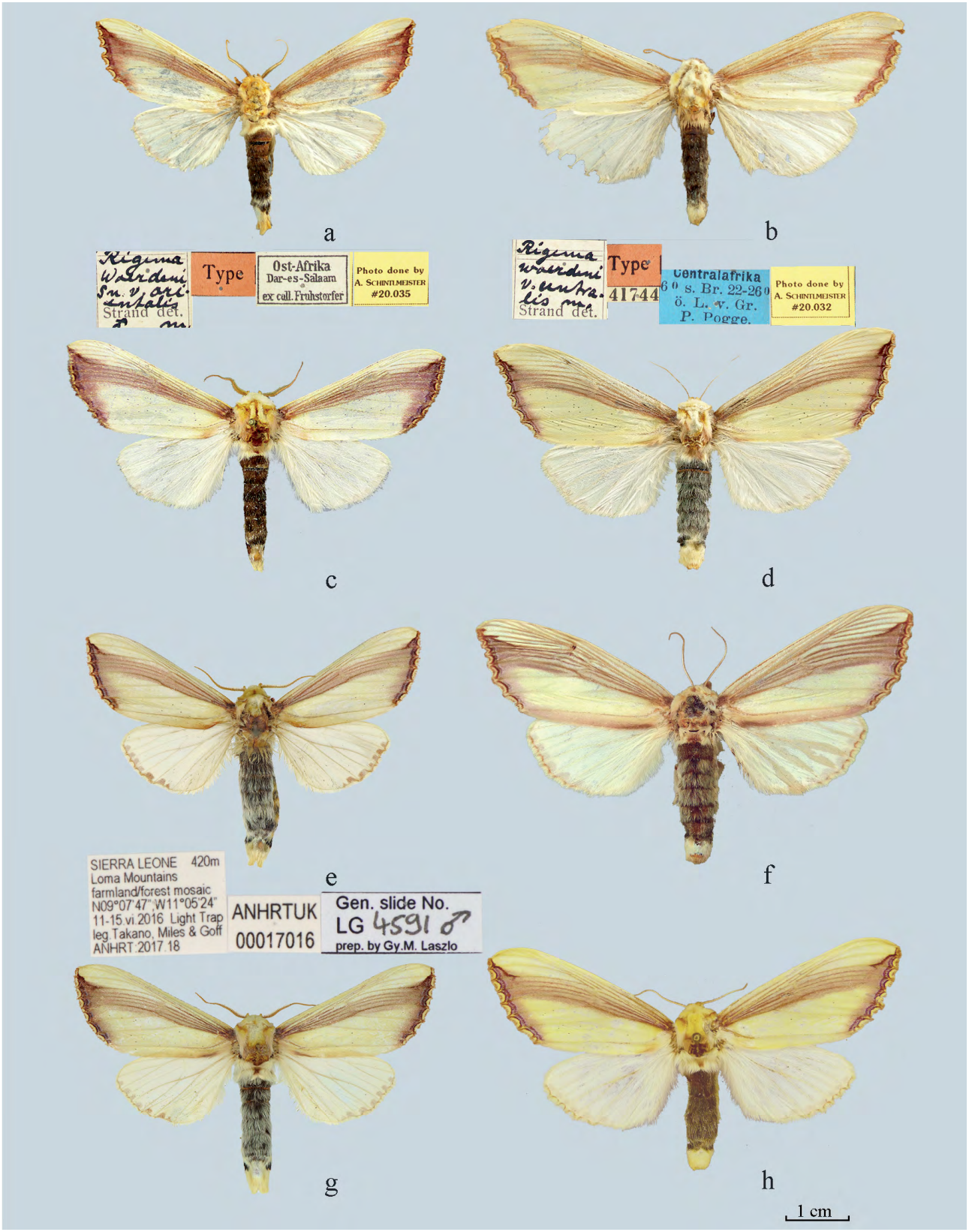


Figure 15. *Rigema orientalis* ssp., adults. **a–d**: *Rigema orientalis orientalis*. **a)** ♂, Tanzania, Dar-es-Salaam, lectotype and associated labels (MfN); **b)** ♀, DR Congo, 6°S, 22–26°E, holotype of *Rigema woerdeni centralis* and associated labels (MfN); **c)** ♂, Tanzania, Ruvuma Region, Magingo savane (MWM/ZSM); **d)** ♀, South Sudan, East Equaria State, Akotos, Lolibai Mts. (MWM/ZSM). **e–h**: *Rigema orientalis strandi* **ssp. n. e)** ♂, Sierra Leone, Loma Mts., holotype and associated labels (ANHRT); **f)** ♀, Burkina Faso, Bobo-Dioulasso, paratype (MWM/ZSM); **g)** ♂, Ivory Coast, Mt. Tonkui Peak, paratype (ANHRT); **h)** ♀, Ivory Coast, Comoé N.P., Kakpin, paratype (CAS).

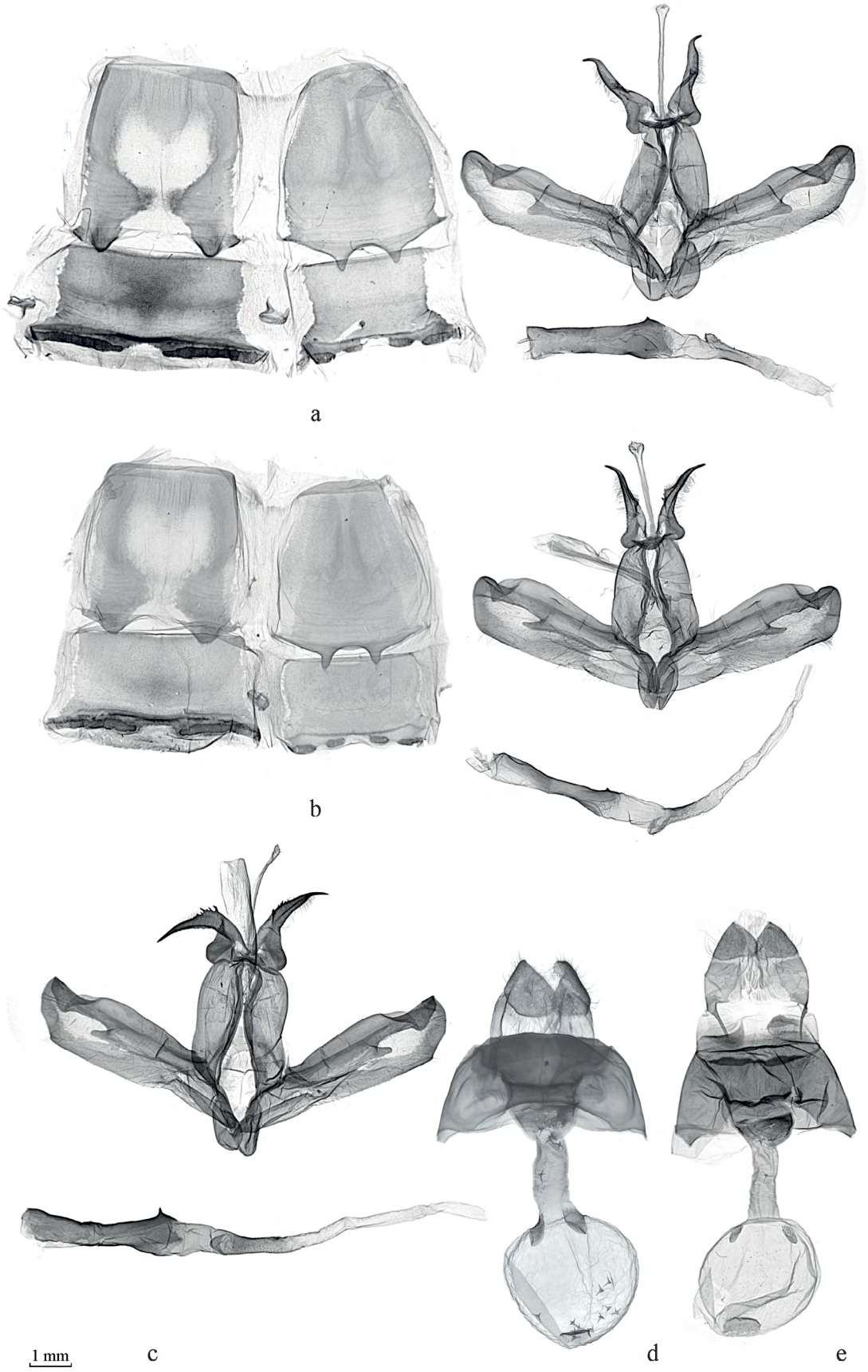


Figure 16. *Rigema orientalis orientalis,* genitalia. **a)** ♂, Tanzania, Iringa, Kipengere Mts., GS: MWM 35.247 (MWM/ZSM); **b)** ♂, DR Congo, Shaba, Luena, GS: MWM 35.243 (MWM/ZSM); **c)** ♂, South Sudan, East Equaria State, Akotos, Lolibai Mts., GS: MWM 35.245 (MWM/ZSM); **d)** ♀, Tanzania, Iringa Region, Lugenge Forest, GS: MWM 23.353 (MWM/ZSM); **e)** ♀, Zambia, Jiwundu Swamp, GS: LG 4592 (ANHRT).

Distribution. *Rigema orientalis orientalis* is distributed in central-, eastern- and southern central Africa with confirmed records from Angola, Burundi, the Central African Republic, the DRC, Ethiopia, Kenya, Malawi, Mozambique, Namibia, the Republic of Congo, South Sudan, Sudan, Tanzania, Uganda, Zambia, and Zimbabwe.

***Rigema orientalis strandi* Schintlmeister & László, ssp. n.**

(Figs 15, 17, 20)

http://zoobank.org/urn:lsid:zoobank.org:act:B66B1236-A20B-4E95-8A4D-4D404EB4C73D

Holotype. ♂, "SIERRA LEONE 420m / Loma Mountains / farmland/forest mosaic / N09°07'47", W11°05'24" / 11–15.vi.2016 Light Trap / leg. Takano, Miles & Goff / ANHRT:2017.18" // unique id.: ANHRTUK 00017016, GS: ANHRT00240 (LG 4591)(ANHRT).

Paratypes (161 ♂♂, 68 ♀♀ in total). **Burkina Faso**. 1 ♀, Dori, 14°04'N, 0°02'E, 285m, 23–27.viii.2013, leg. local collectors, GS: LG 5225 (ANHRT); 2 ♀♀, Bobo Dioulasso [10°52'N, 4°40'W], 29.viii.1982, 7.vii.1984, leg. Dr. Politzar, GS: MWM 35.248 (CAS); 1 ♂, Folonzo am Fluß, Comoe [10°25'N, 4°44'W], 9.ix.1985, leg. Dr. Politzar, GS: MWM 22.776; 1 ♂, Pama, 11°15'N, 0°42'W, viii.2005, leg. P. Moretto (MWM/ZSM). **Ghana**. 5 ♂♂, 1 ♀, Navaro [Navrongo, 10°53'N, 1°05'W], vii.1923, leg. A.W. Cardinall; 2 ♀♀, Navaro, leg. A.W. Cardinall; 1 ♂, 3 ♀♀, Kete-Krachi [7°47'N, 0°03'W], leg. A.W. Cardinall; 1 ♀, Accra [5°32'N, 0°16'W], v.1920, leg. Dr. A. Ingram (NHMUK). **Guinea**. 1 ♀, Guinee francaise, Boffa [10°11'N, 14°02'W], 1922, ex de Fleury (NHMUK); 3 ♂♂, Guineé Forestiére, Bossou Forest and Institut de Recherche Environmentale de Bossou (Lowland Forest-Farmland), 07°38'32"N, 08°30'30"W, 690m, 24–30.vi.2019, MV Light Trap, Dérozier, V., Suah Dore, J., Koivagui, S., Miles, W., Sáfián, S., Warner, R. leg.; 1 ♂, 619 km ESE of Conakry, Nzerekore Region, Prefecture de Lola, Ziela env., 540–600m, x.2017, 7°42'N, 8°21'W, local collectors leg. (ANHRT). **Ivory Coast**. 2 ♂♂, Mt. Tonkoui Peak, 07°27'15"N, 07°38'13"W, 1171m, 12–18.vii.2015, Light Trap, leg. Aristophanous, M., Moretto, P. & Ruzzier, E., GS: ANHRT 00241 (LG 4576); 1 ♂, Denguele Classified Forest (sudanian forest), 09°30'0.6"N, 07°40'51.1"W, 479m, 6–14.vi.2018, LepiLED Light Trap, Aristophanous, M., Miles, W., Moretto, P., Outtara, Y. leg.; 1 ♂, Gbando Village, (Sudanian forest with Gallery forest), 9°34'17.1"N, 6°41'1.1"W, 417m, 15–22.vi.2018, actinic Light Trap, Aristophanous, M., Miles, W., Moretto, P., Outtara, Y. leg.; 1 ♂, Touba, Biémasso, 8°4'19.9"N, 7°35'05.6"W, 441m, 10–11.vii.2013, leg. P. Moretto (ANHRT). **Liberia**. 1 ♀, Gbarpa, Yarwein-Mehnsohnneh District, 500m, 7.49222°N, 8.58145°W, 8–14.xi.2022, leg. Z.F. Fric (CAS). **Mali**. 5 ♂♂, 2 ♀♀ Mandingu Mts., SW Sandama [12°25'N, 8°45'W], 550–650m, iv.2009, leg. Team of G.C. Müller (CAS); 100 ♂♂, 30 ♀♀, same site and collectors, iv.2009, v.2011 (CGM); 1 ♂, Kangaba distr., 25 km NW Kangaba [11°48'N, 8°35'W], 100 km SW Bamako, ix.2008, leg. Team of G.C. Müller, GS: GU 60-95 (CAS); 1 ♂, Yanfolila, 11°11'N, 08°09'W, 6.viii.1986, leg. M. Matthews; 1 ♀, Mourdiah, 14°28'N, 07°28'W, 23.viii.1985, leg. M. Matthews (NHMUK). **Niger**. 1 ♀, Zinder [13°48'N, 8°59'E], 22.viii.1965, leg. G. Popov; 1 ♀, Beylinde, 16.viii.1976, leg. G. Popov; 2 ♀♀, Niamey [13°30'N, 2°06'E], 25.viii.1976, leg. G. Popov (NHMUK). N**igeria**. 2 ♂♂, Kaduna [10°30'N, 7°26'E], 24.v.1971, 26.viii.1971, leg. Dr. Politzar, GS: MWM 35.244 (MWM/ZSM); 1 ♂, Mokwa [9°14'N, 5°19'E], 24.ix.1971, leg. Dr. Politzar (ZSM); 1 ♂, Ibadan [7°26'N, 3°52'E], 4.x.1935, leg. Haig; 1 ♂, Yankari [9°45'N, 10°30'E], 9.vi.1979, leg. R.G.T.St. Leger; 3 ♂♂, 1 ♀, Samaru [11°10'N, 7°37'E], 1–2.vi.1970, 1–8.viii.1970, 7–14.vii.1970, leg. P.H. Ward; 1 ♀, Abinsi [7°45'N, 8°45'E], River Benue, 5.xi.1912; 1 ♀, Lokoja [7°46'N, 6°44'E], x.1904, leg. D. Cator; 1 ♀, 100 miles N of Lokoja [9°10'N, 7°00'E], leg. D. Cator; 1 ♀, Bauchi Prov., Panyam [9°25'N, 9°13'E], 1910, leg. G.T. Fox; 1 ♀, Ilorin [8°32'N, 4°33'E], 11.ix.1912, leg. J.W.S. Macfie; 1 ♂, Zaria [11°07'N, 7°44'E], Samaru, 10.viii.1967, leg. J.C. Deeming; 1 ♀, Nassanawa Prov., Keana [8°09'N, 8°48'E], iv.1922, leg. Dr. K. Komm (NHMUK). **Senegal**. 2 ♂♂, 1 ♀, 5 miles W Diouguel [14°23'N, 14°36'W], natural riverine forest / grass and bushland, early to mid July 1985, leg. H. Friend (CAS); 2 ♀♀, Sedhiou [12°42'N, 15°33'W], 5–12.vii.1917, leg. H. Castell (NHMUK). **Sierra Leone**. 1 ♂, 1 ♀, with the same data as the holotype; 1 ♂, Mansonia village at the foothills of Loma Mts, 9°07'47"N, 11°05'06"W, 420m, 6.vi.2016, Light Trap, leg. Takano, Miles & Goff (ANHRT); 1 ♂, Musala [9°45'N, 11°34'W], 5–23.viii.1963, leg. N. Wilding; 1 ♀, Sierra Leone, leg. Major Bainbridge; 2 ♀♀, Batkanu [9°04'N, 12°24'W], 80 miles inland, E of Freetown, leg. Fitz Gerald (NHMUK). **Togo**. 16 ♂♂, 4 ♀♀, Fazao-Malfakassa NP., Mare aux crocodiles campsite (Sudanian savannah/dry forest), 8°44'58.8"N, 0°48'51.8"E, 505m, 26.viii.–7.ix.2018, MV Light Trap, Aristophanous, M., Geiser, M., Moretto, P., Sanbena, B. leg., GS: LG 5221; 1 ♀, same site and collectors, 27–

31.viii.2018, LepiLED light trap; 2 ♂♂, same site and collectors, 5–7.ix.2018, LepiLED light trap; 5 ♂♂, Fazao-Malfakassa NP, Point de vue campsite (Sudanian savannah), 8°48'50"N, 0°49'3.2"E, 415m, 16–23.viii.2018, actinic, LepiLED and MV light trap, Aristophanous, M., Geiser, M., Moretto, P., Sanbena, B. leg., GS: LG 5222 (ANHRT).

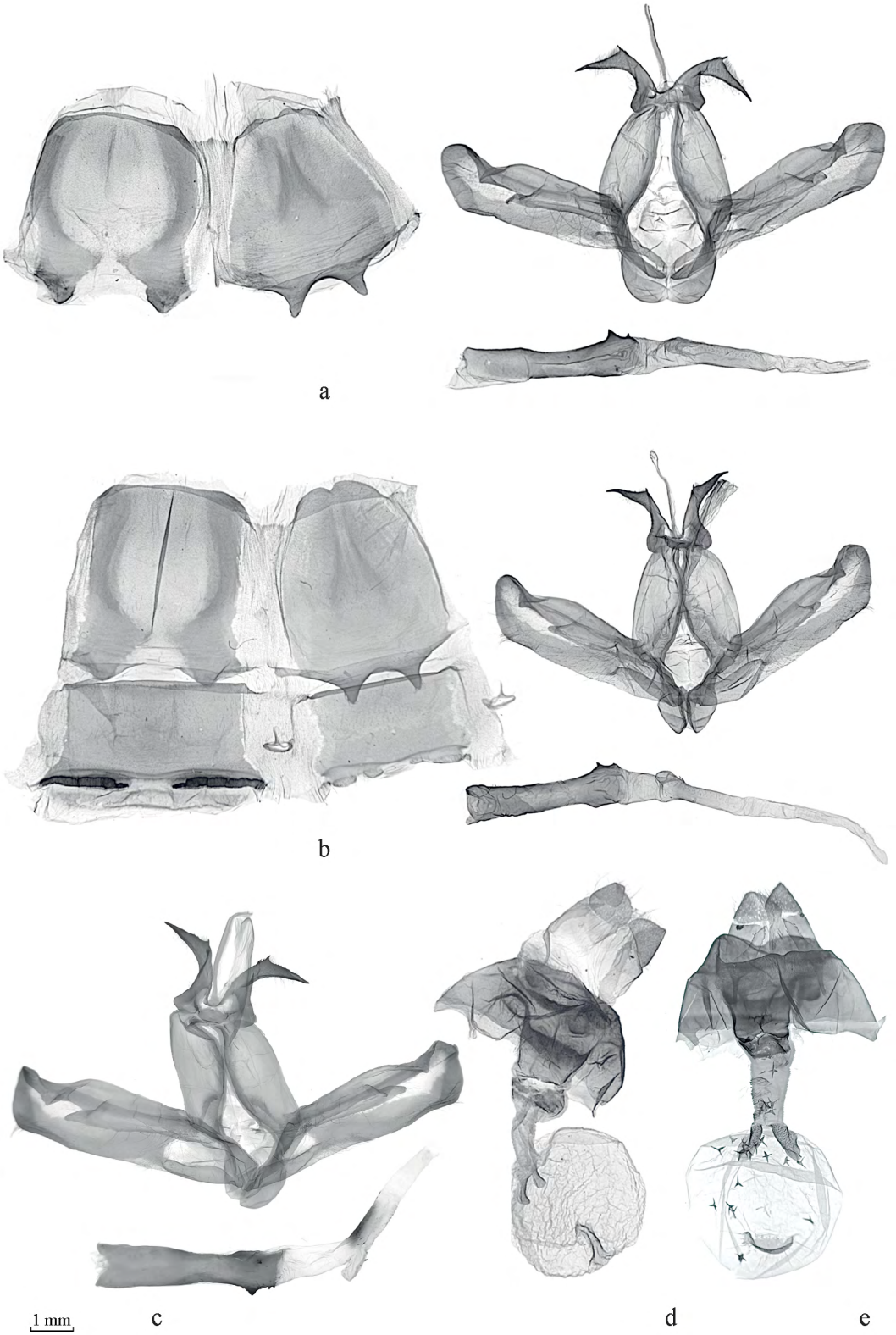


Figure 17. *Rigema orientalis strandi* **ssp. n.**, genitalia. **a)** ♂, Sierra Leone, Loma Mts., holotype, GS: ANHRT00240 (LG 4591) (ANHRT); **b)** ♂, Nigeria, Kaduna, paratype, GS: MWM 35.244 (MWM/ZSM); **c)** ♂, Togo, Fazao-Malfakassa NP, paratype, GS: LG 5222 (ANHRT); **d)** ♀, Burkina Faso, Bobo-Dioulasso, paratype, GS: MWM 35.248 (MWM/ZSM); **e)** ♀, Burkina Faso, Dori, paratype, GS: LG 5225 (ANHRT).

Diagnosis. Forewing length in males is 23–27 mm, and in females 28–34 mm. The external appearance of *R. orientalis strandi* **ssp. n.** generally matches that of the nominotypical subspecies, but most specimens exhibit a pale yet distinct violet-brown shadow along the anal margin of the forewing and a brownish terminal band on the hindwings.

Male genitalia. The male genitalia of the new subspecies differ clearly from those of *R. orientalis orientalis* in the following features. The uncus is considerably slenderer, with a less swollen apex. The socii are strongly curved medially, forming an angle of approximately 70°–90°, and their distal margins are right-angled; in the nominotypical subspecies, the socii are nearly straight or only slightly curved (<40°) and have smoothly rounded distal margins. The phallus of *R. orientalis strandi* **ssp. n.** bears two short, adjacent carinal teeth, whereas *R. orientalis orientalis* possesses only a single, somewhat smaller carinal process.

Female genitalia. In the female genitalia, the new subspecies is characterized by markedly larger sclerotised evaginations at the distal end of the corpus bursae compared with *R. orientalis orientalis*. The sclerotised signum bursae is present but variable in shape.

Etymology. The new subspecies is named in honour of the Norwegian zoologist Embrik Strand (born 2 June 1876 in Ål; died 3 November 1947 in Riga), a renowned arachnologist who described more than 1,500 species and also made significant contributions to the study of Lepidoptera and Hymenoptera. During his tenure as curator at the Museum für Naturkunde in Berlin (1907–1922), he published two papers on *Rigema*.

Distribution. *Rigema orientalis strandi* **ssp. n.** is restricted in distribution to West Africa and identified from Burkina Faso, Ghana, Guinea, Ivory Coast, Liberia, Mali, Niger, Nigeria, Senegal, Sierra Leone and Togo.

Rigema morettoi Schintlmeister & László, sp. n.

(Figs 18, 19, 20)

http://zoobank.org/urn:lsid:zoobank.org:act:88075EBE-1795-4767-AD52-47AE45F65525

Holotype. ♂, "TOGO 505m / Fazao-Malfakassa NP., / Mare aux crocodiles campsite / (Sudanian savannah/dry forest) / 8°44'58.8"N, 0°48'51.8"E / 26.viii.–7.ix.2018 MV Light Trap / Aristophanous, M., Geiser, M., / Moretto, P., Sanbena, B. leg. / ANHRT:2018.31" // unique id.: ANHRTUK 00047386, GS: ANHRT00397(ANHRT).

Paratypes (45 ♂♂, 4 ♀♀ in total). **Burkina Faso**. 1 ♂, Pama, 11°15'N, 0°42'W, viii.2005, leg. P. Moretto, GS: 89-87 (MWM/ZSM); 2 ♂♂, Boromo, 11°45'N, 2°56'W, viii.2005, leg. P. Moretto, GS: GU 89-92 (MWM/ZSM and CAS). **Mali**. 1 ♂, 80 km SW Bamako, Ouronina 12°05'N, 8°23'W, 395m, viii.2014 (CAS). **Senegal**. 2 ♂♂, 1 ♀, 5 miles W Diouguel [14°23'N, 14°36'W], natural riverine forest / grass and bushland, vii.1985, leg. H. Friend (CAS). **Togo.** 25 ♂♂, 2 ♀♀ with the same data as the holotype, GS: ANHRT00398; 6 ♂♂, Fazao-Malfakassa NP., 415m, Point de vue campside, 8°48'50"S, 0°49'03.2"E 16–23.viii.2018, leg. M. Aristophanous, M. Geiser, P. Moretto, B. Sanbena (ANHRT). **Zambia**. 1 ♂, Kapishya Hot Springs, Shiwa N'gandu Estate, 1437m, 11°10'13"S, 31°36'00"E, xii.2014, leg. R. Smith & H. Takano, GS: ANHRT00238 (LG 4595); 1 ♀, same site, i.2015, GS: LG 5224; 2 ♂♂, Chilambwe Falls, Kafubu River, 09°50'13"S, 30°43'35"E, 1420m, 8–12.ii.2019, MV light trap, Dérozier, V., Mulvaney, L., Takano, H. leg.; 2 ♂♂, Chitunta Plain (Miombo/Dambo mosaic), 1396m, 11°29'12"S, 24°24'18"E, 29.xi.–4.xii.2019, MV Light Trap, Bashford, M., Miles, W., Mulvaney, L. leg., ANHRT: 2019.25, GS: LG 5220; 3 ♂♂, same site, 11–17.vi.2021, Chizuwa, D., Choongo, W. leg. (ANHRT).

Diagnosis. Forewing length in males is 22–28 mm, in females 29–32 mm. *Rigema morettoi* **sp. n.** closely resembles *R. orientalis* but is distinguished by the presence of a brownish-filled basal field on the forewing anal margin, a feature absent in *R. orientalis*. The hindwings of the new species are yellowish in males and brownish-tinged in females, whereas those of *R. orientalis* are typically yellowish white.

Male genitalia. The ground plan of the male genitalia resembles those of *R. orientalis* but differ in several consistent characters: the uncus is thicker and lacks the dilated tip characteristic of *R. orientalis orientalis*; the socii are basally much broader, shorter, and stouter than in *R. orientalis orientalis*; and compared to *R. orientalis strandi*, the socii do not have a conspicuously angled dorsal margin. The valva of the new species is approximately 10% shorter and considerably broader than in *R. orientalis*, and bears a large, semicircular, roughly rugose plate extending along the proximal half of the dilated costa and editum, a character unique within *Rigema*. The straight tubular phallus is about 20% longer than that of *R. orientalis*, is not constricted postmedially, and lacks carinal

projections; in contrast, the phallus of *R. orientalis* bears one or two small but heavily sclerotised carinal spines. The everted endophallus possesses a small, sac-like diverticulum, similar to that of *R. orientalis*.

Female genitalia. In the female genitalia, *R. morettoi* **sp. n.** is characterized by a considerably narrower ostium bursae, a somewhat thinner and longer ductus bursae lacking a swollen distal section, and a markedly smaller, pointed triangular pair of distal sclerotised plates of the corpus bursae. The signum bursae is narrow and chevron-shaped.

According to current knowledge, the new species occurs sympatrically with *R. orientalis orientalis* in Zambia and with *R. orientalis strandi* in Togo, Senegal, and Mali. Although the short brownish basal patch on the forewing anal margin is helpful for identifying *R. morettoi* **sp. n.**, reliable separation of the two species requires dissection of the genitalia.

Etymology. This species is dedicated to Philippe Moretto, a distinguished researcher of West African insect fauna and one of the collectors of the new taxon.

Distribution. *Rigema morettoi* **sp. n.** has confirmed records from Burkina Faso, Mali, Senegal, Togo and Zambia.

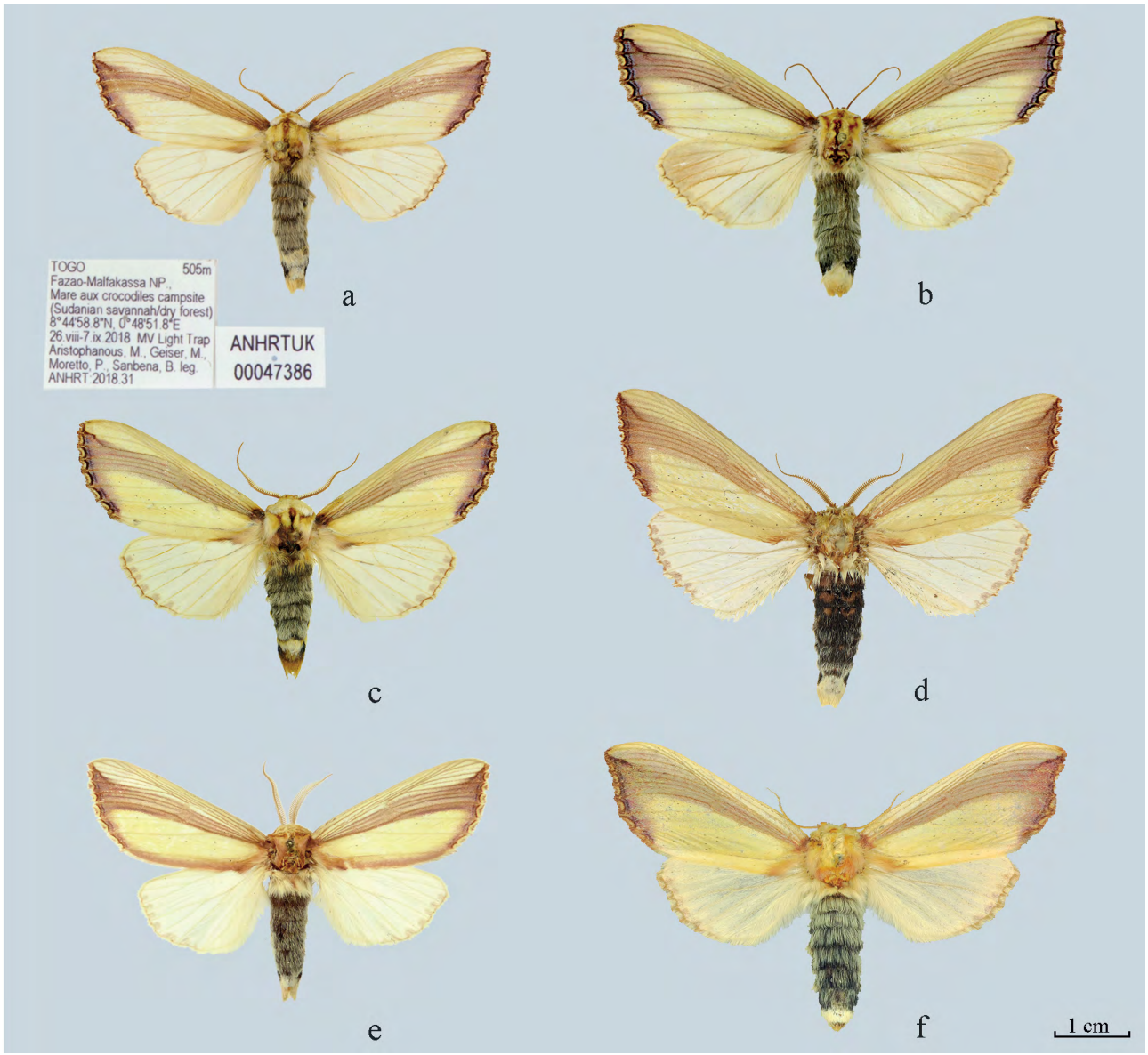


Figure 18. *Rigema morettoi* **sp. n.**, adults. **a)** ♂, Togo, Fazao-Malfakassa NP, holotype and associated labels (ANHRT); **b)** ♀, Togo, Fazao-Malfakassa NP, paratype (ANHRT); **c)** ♂, Togo, Fazao-Malfakassa NP, paratype (ANHRT); **d)** ♂, Zambia, Shiwa N'gandu, paratype (ANHRT); **e)** ♂, Burkina Faso, Boromo paratype (MWM/ZSM); **f)** ♀, Zambia, Shiwa N'gandu, paratype (ANHRT).

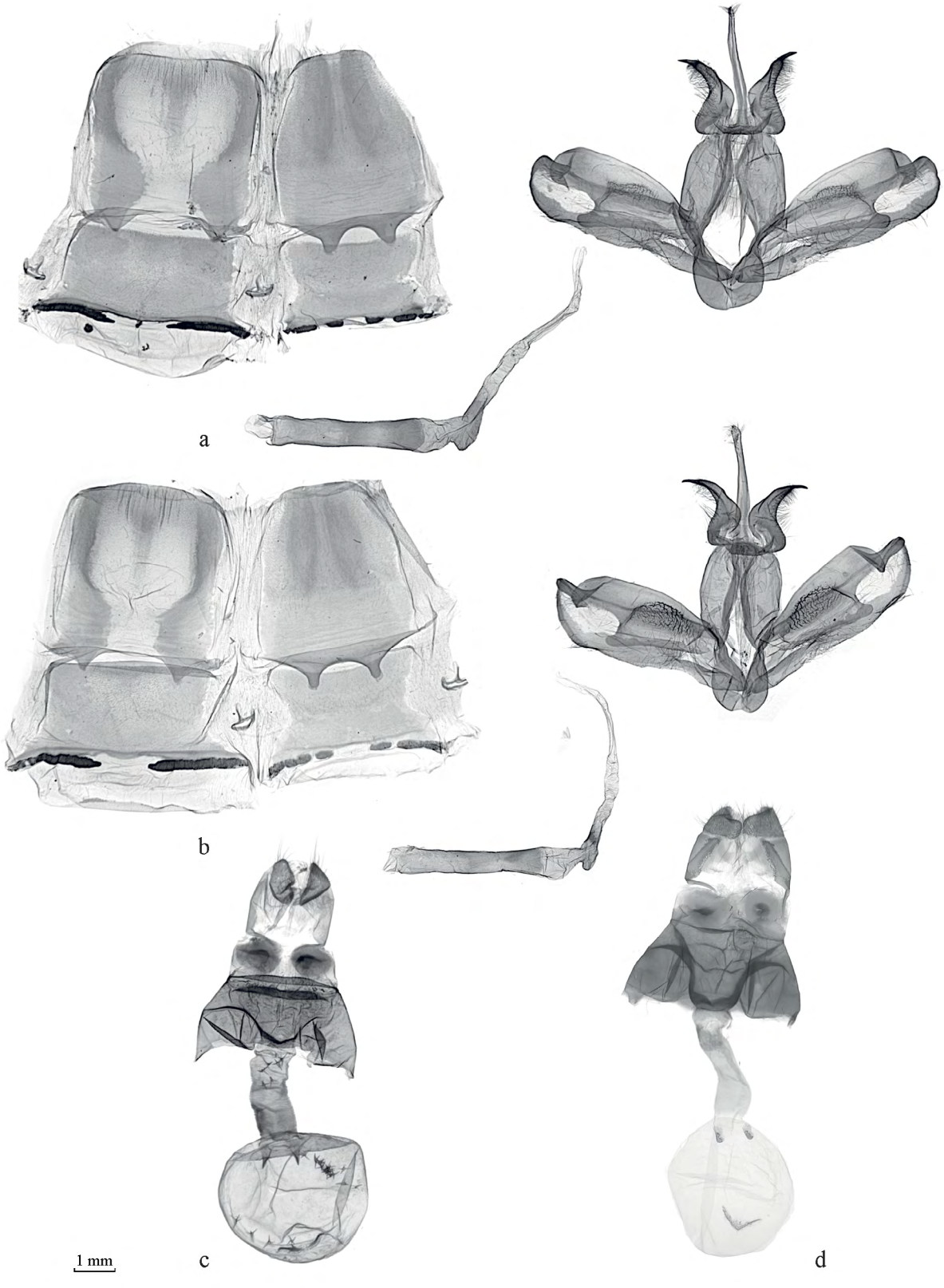


Figure 19. *Rigema morettoi* **sp. n.**, genitalia (all in ANHRT). **a)** ♂, Togo, Fazao-Malfakassa NP, holotype, GS: ANHRT00397; **b)** ♂, Zambia, Kapishya Hot Springs, paratype, GS: LG 5224; **c)** ♀, Togo, Fazao-Malfakassa NP, paratype, GS: ANHRT00398; **d)** ♀, Zambia, Kapishya Hot Springs, paratype, GS: LG 5224.

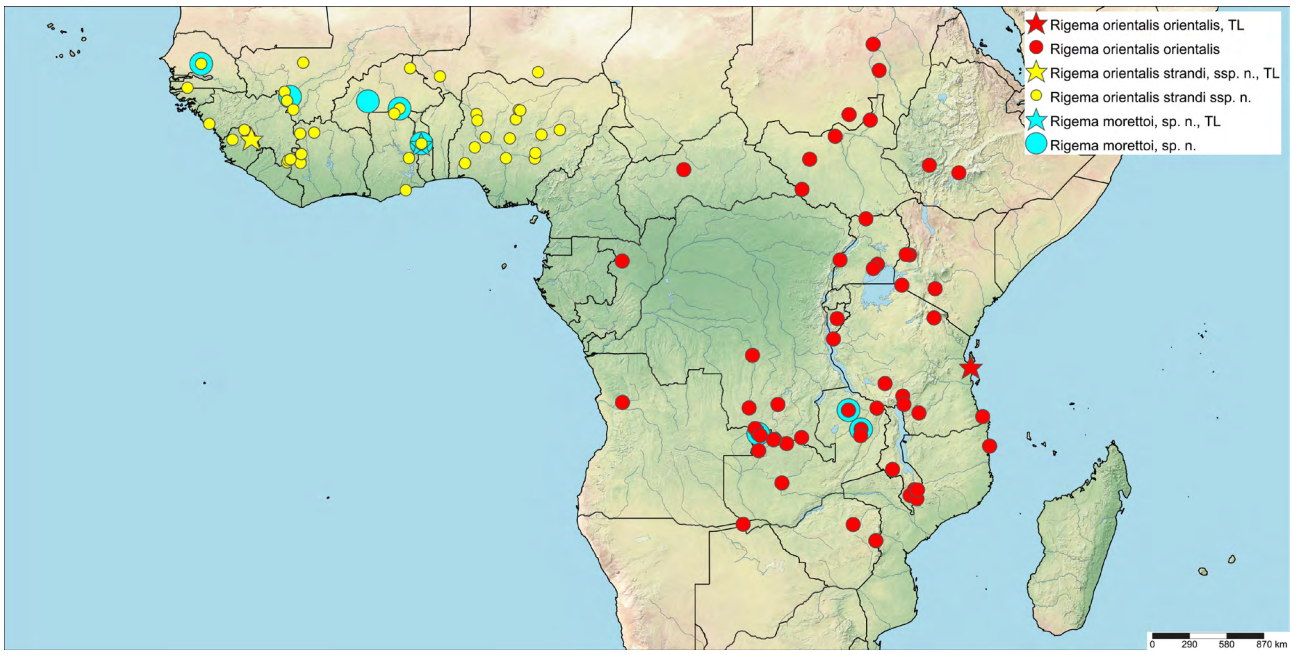


Figure 20. Distribution of *Rigema orientalis orientalis*, *R. orientalis strandi* **ssp. n.**, and *R. morettoi* **sp. n.**

Rigema ochriventris Strand, 1912

(Figs 21, 22, 25)

Rigema ochriventris Strand, 1912, *Fauna exotica* **1** (14): 50, 54.

Type material examined. **Holotype** of *Rigema ochriventris*:♀, [red label] ”Type” // [with handwritten] ”Uganda? / O. Neumann / 1895” // ”41746” // [partially handwritten] ”Rigema / ochriven- / tris m. ♀ / Strand det.” (MfN).

Remark. The original description of *R. ochriventris* refers to a single female specimen from “Uganda?”, therefore the specimen is confirmed as the holotype.

Additional material examined. **Ethiopia**. 1 ♂, Dangila [= Dangla, 11°15'N, 36°50'E], 6,700’, 40 mls S. of L. Tana, 29.viii.1926, leg. R.E. Cheeseman, GS: NHMUK014331217 (NHMUK). **Kenya**. 1 ♂, Kitale [1°01'N, 35°00'E], 17.iv.1925 (NHMUK). **South Sudan**. 14 ♂♂, 1 ♀, East Equatorial State, Akotos prov., Lolibai Mts. [13°55'N, 32°52'E], 1300m, 15.viii.–10.ix.2010, leg. Vladimir Gurkho, GS: MWM 22.759, MWM 35.209, (MWM, CAS, CGM).

Diagnosis. Forewing length in males: 23–27 mm, in females: 26–31 mm. This species is readily distinguished from its congeners by the warm yellow areas of the forewing and the broad pinkish-brown longitudinal stripe containing numerous fine brownish lines. The anal margin of the forewing is contrasting violet-brown, and the ventral portion of the terminal area bears a conspicuously broad, diffuse violet-brown shade, a combination not observed in other congeners. The hindwings are yellowish-white with a brownish-yellow submarginal line. One of the two Ethiopian males exhibits hindwings tinged with brown.

Male genitalia. The male genitalia are characterised by robust, elongate-triangular socii terminating in an acute spine. The elongate-quadrangular valva bears a swollen costa with an enlarged, elongate editum; the apical flap of the valva is markedly smaller than in other congeners. The phallus is elongate and tubular, possessing a single short carinal spine. The three dissected males differ in the shape of the uncus and in phallus length, as illustrated.

Female genitalia. The female copulatory organ of this species is distinguished by a broad U-shaped ostium bursae and a moderately wide, quadrangular antrum. The distal invaginations of the corpus bursae are relatively large and sub-quadrangular, the signum bursae is belt-like.

Distribution. Confirmed records of *R. ochriventris* are from Ethiopia, Kenya and South Sudan. The holotype is labelled “Uganda?”, but no additional specimens from Uganda are currently known.

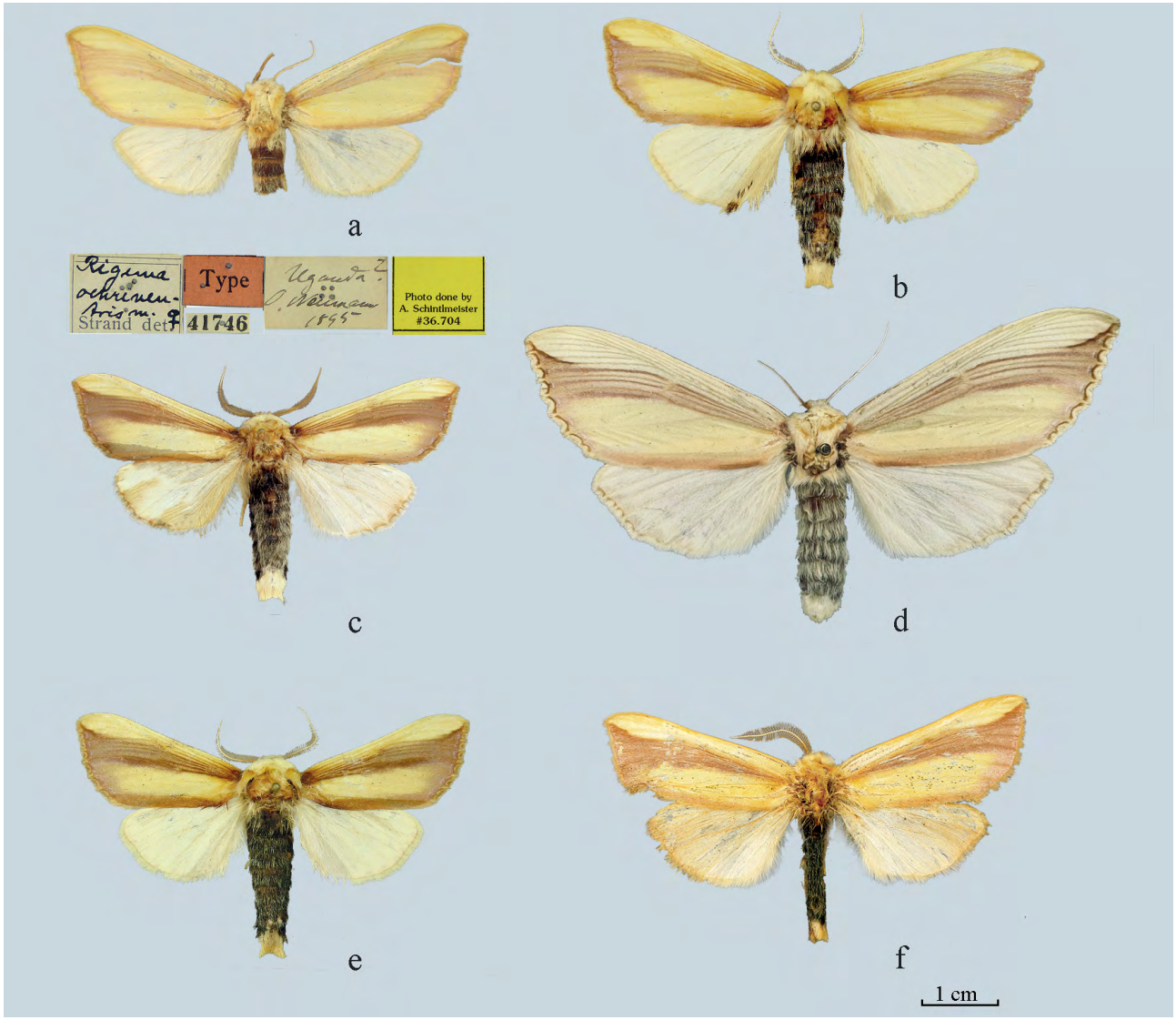


Figure 21. *Rigema ochriventris,* adults. **a)** ♀, Uganda, holotype and associated labels (MfN); **b)** ♂, South Sudan, East Equatoria, Lolibay Mts. (CAS); **c)** ♂, South Sudan, East Equatoria, Lolibay Mts. (CAS); **d)** ♀, Sudan, Blue Nil, Tozi, 22.vii.1960 (CGM); **e)** ♂, South Sudan, East Equatoria, Lolibay Mts. (CGM); **f)** ♂, Ethiopia, Dangila 6700' (NHMUK).

Rigema amphiaraus (Kiriakoff, 1955), comb. n.

(Figs 23–25)

Antheua amphiaraus Kiriakoff, 1955, *Revue de Zoologie et de Botanique Africaines* **52**: 346; fig. 68; pl. 2: 18, 19.

Type material examined. **Holotype** of *Antheua amphiaraus*: ♂, [circular label with red margin] "Holo- / type" // [Ghana] "Gold Coast: / Northern Terr. / Navaro. [= Navrongo, 10°54'N, 1°06'W] / A. W. Cardinall" // [with handwritten] "Rigema / amphiaraus / sp. n. ♂ holotype" (NHMUK).

Remarks. **(1)** Kiriakoff (1955) designated a holotype in the original description of this species. **(2)** The species was originally described in the genus *Antheua*; however, as it shares all diagnostic morphological characters of *Rigema*, it is here transferred to this latter genus.

Additional material examined. **Burkina Faso**. 1 ♂, Yako, 12°58'N, 2°16'W, leg. P. Moretto (CAS). **Ghana**. 1 ♀, Gold Coast, Northern Territory, Navaro 11° N, 1°30' W, vii.1923, GS: NHMUK014331220, leg. A. W. Cardinall (allotype); 1 ♀, same site and collector (NHMUK). **Guinea**. 1 ♂, Kankan [10°23'N, 9°19'W], 8.x.1968 (ZSM). **Mali**. 6 ♂♂, 1 ♀, 80 km SW Bamako, Ouronina 12°05'N, 8°23'W, 395 m, viii. 2014 (CAS, CGM); 3 ♂♂, Mts. Mandingues [12°26'N, 8°45'W], SW Sandama, 550–650m, v.2011 (CGM); 1 ♂, Boromo, 11°45'N, 2°56'W, viii.

2005, leg. P. Moretto, GS: GU 90-02 (CAS). **Nigeria**. 1 ♂, Zaria [11°07'N, 7°44'E], Samaru, 30.vii.1968, leg. J.C. Deeming (NHMUK); 1 ♀, Kaduna [10°30'N, 7°26'E], 25.i.1979, leg. Dr. Politzar (CGM). **Senegal**. 7 ♂♂, 4 ♀♀, 5 miles W Diouguel [14°23'N, 14°36'W], natural riverine forest / grass and bushland, vi.–vii.1985, leg. H. Friend (CAS, CGM).

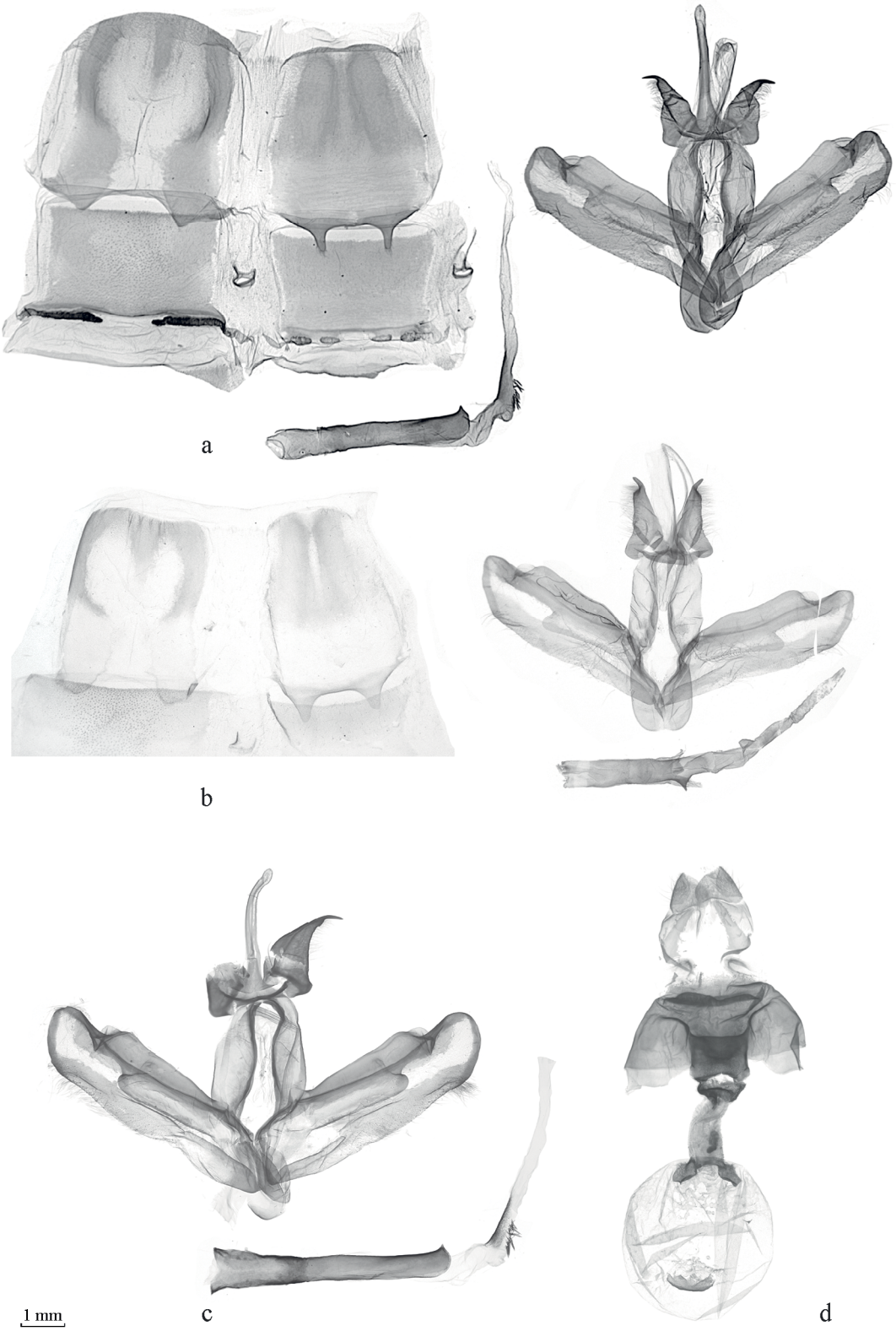


Figure 22. *Rigema ochriventris,* genitalia. **a)** ♂, South Sudan, East Equatoria, Lolibay Mts., GS: MWM 35.209 (CAS); **b)** ♂, Ethiopia, 409 mls. of Tana, Dangila 6700', GS: NHMUK014331217 (NHMUK); **c)** ♂, South Sudan, East Equatoria, Lolibay Mts., GS: MWM 22.759 (MWM/ZSM); **d)** ♀, Sudan, Blue Nil, Tozi, 22.vii.1960, GS: CGM 38.612 (CGM).

Diagnosis. Forewing length 25–27 mm in males and 28–33 mm in females. This species is readily distinguished from all other congeners by the extensive greyish-brown subcostal longitudinal stripe of the forewing, which broadens distally into a wide terminal field; the anal margin is similarly coloured. The hindwings are whitish, occasionally with a faint yellowish tinge; the fringe and anal area are slightly darker.

Male genitalia. The male genitalia closely resemble those of *R. ochriventris* but differ in the considerably longer and slenderer uncus, the distal part of socii are curved, pointing craniad (directed laterad in *R. ochriventris*), and the noticeably longer distal section of the valva. The phallus is straight and bears a minute carinal process, as in the Ethiopian specimen of *R. ochriventris*. The everted endophalli are virtually identical in the two species.

Female genitalia. In the female genitalia, *R. amphiaraus* differs from *R. ochriventris* in having a slightly shorter and broader eighth abdominal segment, a less heavily sclerotised antrum that tapers proximally (it is rather quadrangular in the related species), a thicker and approximately 10% longer ductus bursae, and more elongate distal sclerotised plates of the corpus bursae. The corpus bursae and signum bursae are similar in both shape and size in the two species.

Distribution. This species has confirmed records from Burkina Faso, Ghana, Guinea, Mali, Nigeria, and Senegal.

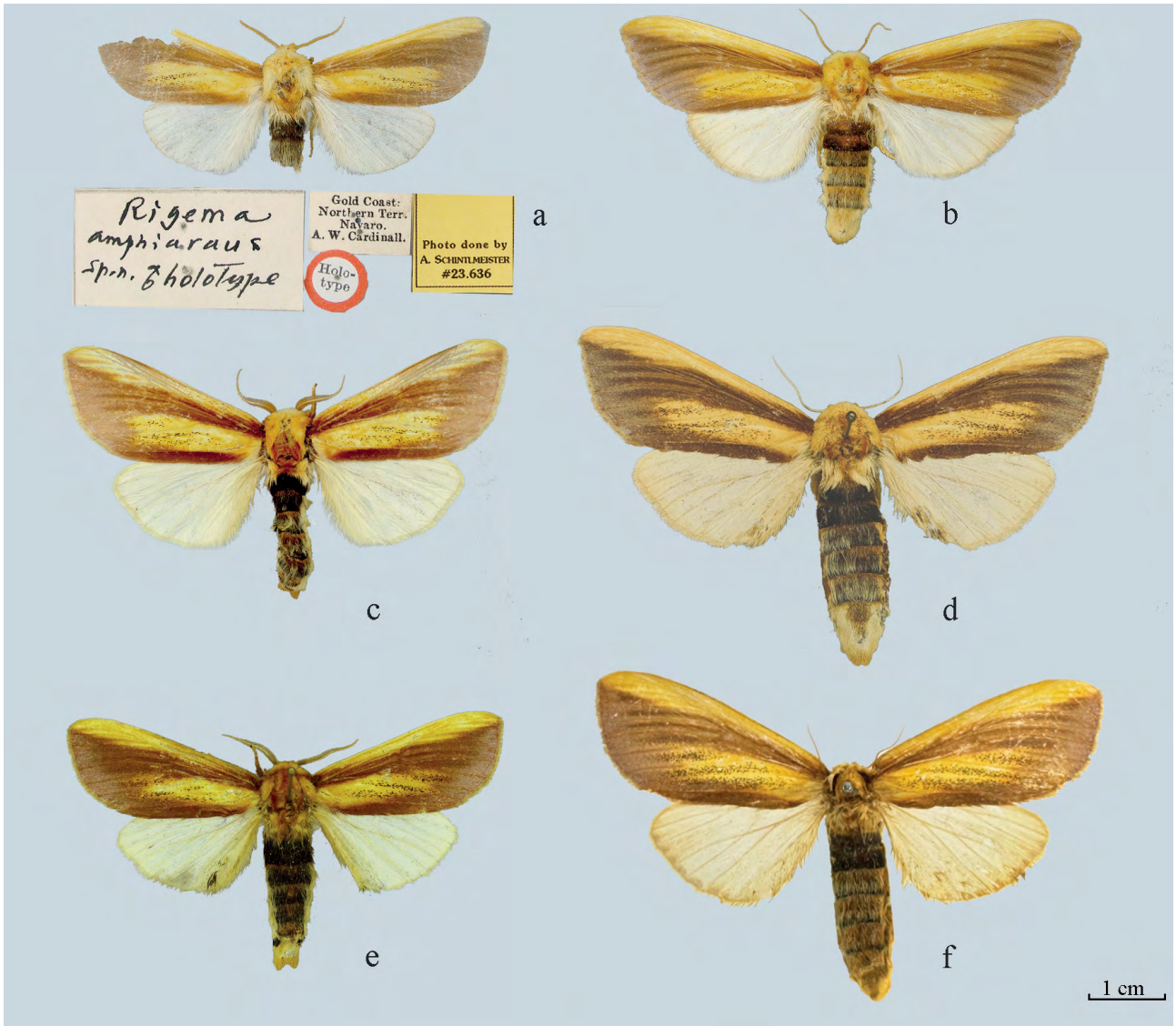


Figure 23. *Rigema amphiaraus,* adults. **a)** ♂, Ghana, Upper East Region, Navrongo, holotype and associated labels (NHMUK); **b)** ♀, Ghana, Upper East Region, Navrongo, paratype (NHMUK); **c)** ♂, Burkina Faso, Yako, (CAS); **d)** ♀, Mali, Ouronina, 80 km SW Bamako (CGM); **e)** ♂, Senegal, Diouguel (CAS); **f)** ♀, Senegal, Diouguel (CGM).

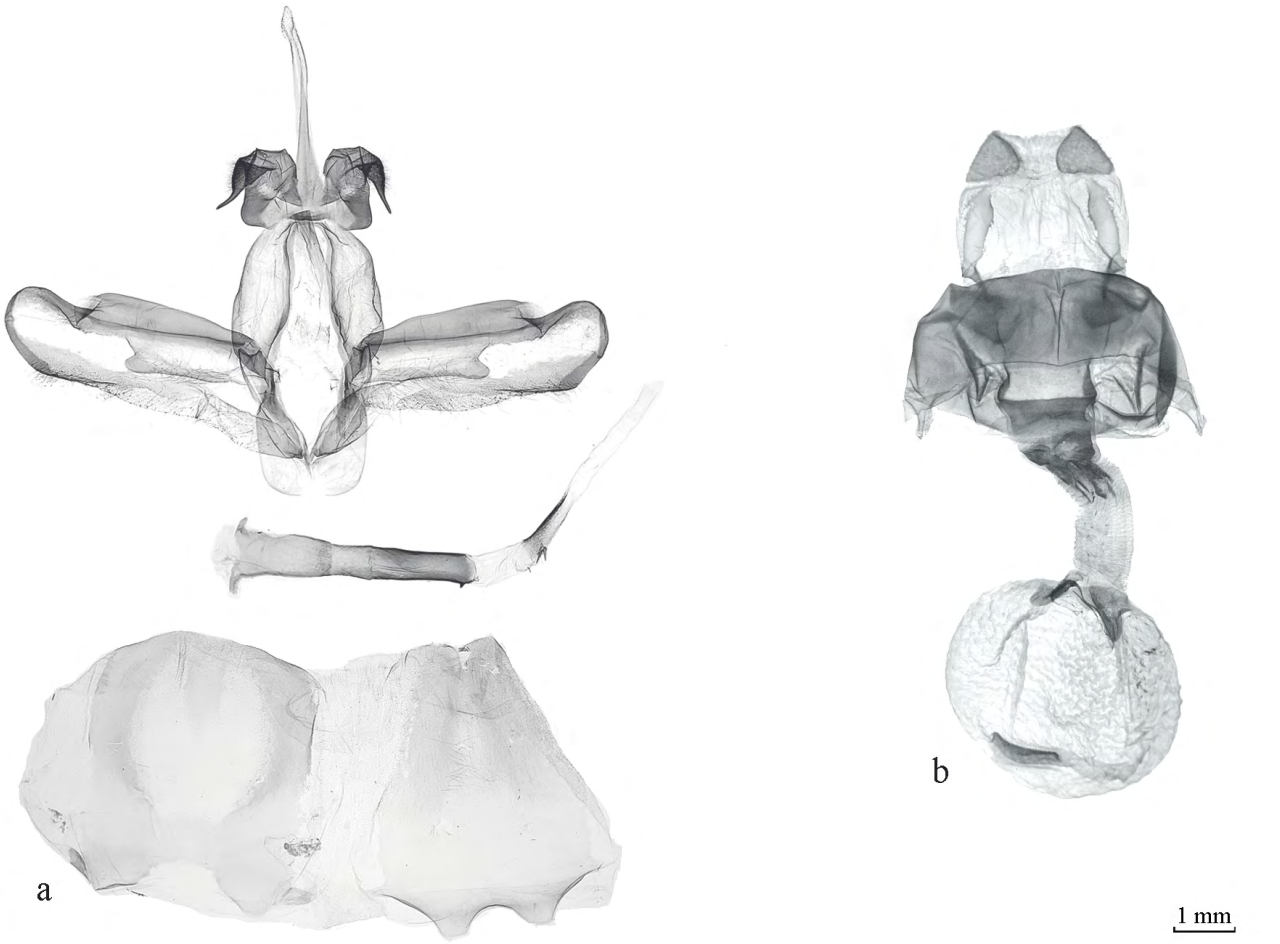


Figure 24. *Rigema amphiaraus,* genitalia. **a)** ♂, Burkina Faso, Boromo, GS: GU 90-02 (MWM/ZSM); **b)** ♀, Ghana, Northen Region, Navrongo, paratype, GS: NHMUK014331220 (NHMUK).

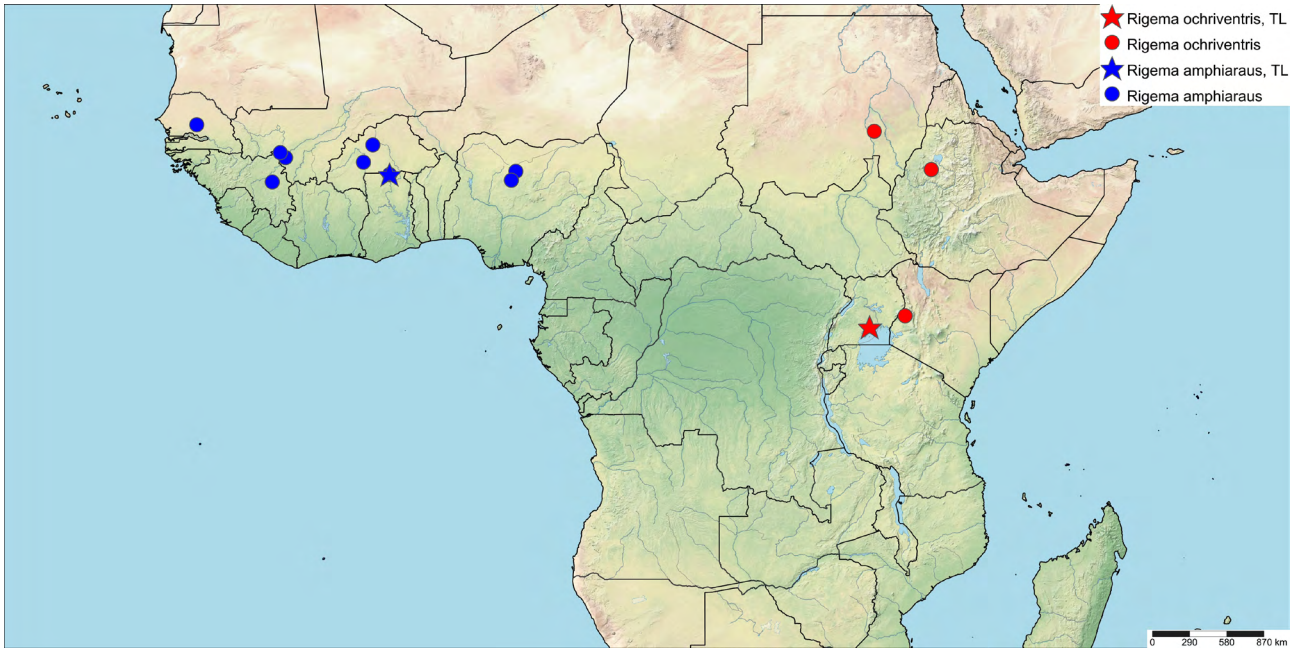


Figure 25. Distribution of *Rigema ochriventris* and *R. amphiaraus*.

***Rigema woerdeni* (Snellen, 1872)**
(Figs 26, 27, 28)

Phalera woerdeni Snellen, 1872, *Tijdschrift voor Entomologie* **15**: 45; pl. 4: 1–3.
= *Rigema Woerdeni* var. *meridionalis* Strand, 1912, *Fauna exotica* **1** (14): 53.

Type material examined. **Holotype** (by monotypy) of *Phalera woerdeni*: ♂, [DRC] [with handwritten] "Afrika / Banana / v. Woerden / ♂ 40" // [with handwritten] "Woerdeni / Snell." (RMNH). **Lectotype** of *Rigema woerdeni* var. *meridionalis* (designated by Schintlmeister & Witt (2015)): ♀, [red label] "Type" // [RSA] [with handwritten] "Natal / Afr. mer." // [partially handwritten] "Rigema / woerdeni / v. meridi- / Strand det. / onalis m ♀ (MfN).

Additional material examined. **Burundi**. 1 ♂, Gitega [03°26'S, 29°55'E], 21.ii.1968, leg. Dr. M. Fontaine; 1 ♀, Usumbura, [03°22'S, 29°21'E], 900m, 8.i.1962, leg. Dr. M. Fontaine (RMCA). **Eswatini**. 1 ♂, Malototja [26°08'S, 31°07'E] 4.ii.1993, GS: TM 17.027, leg. NJ Duke (TMSA). **Ethiopia**. 1 ♀, Kaffa Prov., 5 km E Jima, 1800m, 7°40'N, 36°55'E, 28.iv.2008, leg. Naumann & Schnitzler; 1 ♂, 3 km N Tumi, Mango Camping site, 910m, 4°58'19"N, 36°30'53"E, 8.v.2008, leg. H. Hacker & H.-P. Schreier (CAS). **Kenya**. 1 ♂, Nairobi-Kabete [01°13'S, 36°43'E], 20.v.1972, leg. Dr. Politzar (FLMNH); 1 ♂, Kabete, 8.v.1972, leg. Dr. Politzar; 1 ♂, same site and collector, 14.vi.1974 (CGM); 2 ♂♂, Transmara, Lolgorien, [01°14'S, 34°49'E], 2000m, 1–20.iii.2001, GS: MWM 23.354, MWM 35.242 leg. Dr. Politzar (CAS, MWM/ZSM); 1 ♂, Transmara, 12.ii.–8.iii.2002 leg. Dr. Politzar; 1 ♀, Mau Forest [0°37'S, 35°44'E], 20.i.1993 leg. Dr. Politzar; 1 ♂, South Coast, Om, Marenche Forest, [04°34'S, 39°08'E], 1–20.ix.2001, leg. Dr. Politzar (CAS); 3 ♂♂, 1 ♀, Kitale [1°01'N, 35°00'E], v., vii., viii.1953, leg. C.R. Howard; 3 ♂♂, Nairobi [1°21'S, 36°47'E]; 1 ♀, Masongoleni [2°29'S, 38°03'E], 6.iv.1894, leg. Dr. Ansorge; 1 ♂, Suna [1°05'S, 34°27'E], S. Kavirondo, ii.1932, leg. W. Feather (NHMUK). **Malawi**. 1 ♂, Limbe [15°48'S, 35°04'E], xii.1925, leg. H. Barlow (NHMUK). **RSA**. 1♀, Natal (paralectotype of *meridionalis*) (MfN); 1 ♂, Erfenis Dam NR, [28°31'S, 26°47'E] 1000m, 31.xii.2007, leg. A. Schivko (MWM/ZSM); 1 ♀, Port Durvord, 28°53'S, 31°49'E, 12.xii.1980, leg. D.H. Jacobs; 1 ♀, Durban [29°52'S, 31°01'E] (TMSA); 1 ♂, Soutpansberg, Masovhela Lodge, 22°56'S, 29°53'E, 1030m, 20–22.xi.2014, leg. R & S. Fiebig (CRF); 1 ♀, Transkei [31°38'S, 29°27'E], leg. Miss Barrett; 1 ♂, 2 ♀♀, Durban, Natal; 1 ♀, East Pondoland; 1 ♀, Orange Free State [Bloemfontein, 29°06'S, 26°16'E]; 2 ♂♂, Transvaal, Pretoria [25°45'S, 28°11'E], i.1894, leg. W.L. Distant; 1 ♂, Natal, Stanger [29°20'S, 31°18'E], leg. J. Delvin (NHMUK). **Rwanda**. 2 ♂♂, Kigali [1°55'S, 30°05'E], 1500m, 1.v.1973, x.1972, leg. F. Cuypers (ANHRT). **Tanzania**. 1 ♂, Iringa Region, Iyayi savanna, 1400m, 8°51.379'S, 34°31.2'E, 9.ii.2008, GS: MWM 22.760, leg. Ph. Darge (MWM/ZSM); 1 ♂, Tanzania, Usambara Mts., Yogoi [4°48'S, 38°16'E], 1450m, 23.v. (CGM); 1 ♀, Iringa Region, Kidingala savana, 1754m, 9°08.523'S, 34°37.531'E, 3.i.2011 leg. Ph. Darge (MWM/ZSM); 1 ♂, Amani [5°06'S, 38°38'E], iii.1963; 1 ♀, Amani, iv.1965; 1 ♂, 1 ♀, Mwanza [2°31'S, 32°55'E], xii.1925–i.1926, leg. Capt. M.S. Moore V.C.; 1 ♂, Banagi Hill [2°18'S, 34°50'E], Musoma, leg. Capt. M.S. Moore; 1 ♂, Mbeya [8°54'S, 33°28'E], 28.xi.1950, leg. H.B. Kettlewell; 1 ♀, Mwengwa [1°15'S, 33°52'E], 13.iii.1914, leg. H.C. Dillman (NHMUK); 1 ♀, Mlangali, Livingstone Mts, 9°46'52"S, 34°31'22"E, 1761m, xii.2012, Light Trap leg. Smith, R. & Takano, H., GS: ANHRT 00243 (LG 4577); 1 ♀, Njombe, Masaulwa, 9°07'S, 34°35'E, 2700m, iii.–iv.2013, local coll. leg. (ANHRT). **Uganda**. 1 ♂, Bwindi Forst, Cuckooland Lodge, 1700m, 01°00.083'S, 29°42.448'E, 27–30.iii.2013, leg. R. Fiebig & D. Stadie (CRF); 1 ♂, Kalinzu Forest, Ankole Tea Est., 1500m, 0°25'01" N, 30°05'16" E, 21.iii.2023, leg. Schintlmeister (CAS); 1 ♀, Mukono [0°21'N, 32°45'E], 10.viii.1937. **Zambia**. 26 ♂♂, 1 ♀, Kapishya Hot Springs, Shiwa N'gandu Estate, 11°10'13"S, 31°36'00"E, 1437m, xii.2014, i–iii.2016, i–iii.2017, i.2015, iii. 2015, v.2015, ex M. T. Harvey coll.; 1 ♂, 1 ♀, same site, 22.xi.–8.xii.2015, leg. Oram, D., Smith, R., Takano, H.; 1 ♂, same site and collectors, 17–21.xi.2016; 1 ♂, same site, 14–16.iii.2017, leg. Oram, D., Miles, W., Smith, L.; 5 ♂♂, Jiwundu Swamp, 11°51'54"S, 25°33'20"E, 1340m, 25–30.x.2017, MV Light Trap, Carter, M., Lloyd, A., Miles, W., Oram, D., Smith, R. leg.; 2 ♂♂, same site, 29.x.–4.xi.2018, Aristophanous, M., Dérozier, V., László, G., Oram, D. leg.; 3 ♂♂, Hillwood, Ikelenge (Miombo/Riverine forest mosaic), 11°16'02"S, 24°18'59"E, 1400m, 23–30.xi.2019, 7–10.xii.2019, MV Light Trap, Bashford, M., Miles, W., Mulvaney, L., Smith, R. leg.; 1 ♀, same site, 21–28.x.2013, leg. Smith, R., Takano, H., Chmurova, L., Smith, L.; 1 ♂, Nkwaji, Mwinilunga, 11°36'22"S, 24°33'17"E, 1316m, 29.x.–3.xi.2013, Light Trap, leg. Smith, R., Takano, H., Chmurova, L., Smith, L.; 1 ♂, Changwena Falls, N. Swaka F.R., Copperbelt, 13°22'48"S, 29°33'18"E, 1416m, 27–28.x.2014, Light Trap, leg. Smith, Takano & Oram, GS: ANHRT 00244 (LG 4574); 1 ♂, same site, 27–30.i.2019, Dérozier, V., Mulvaney, L.,

Takano, H. leg.; 1 ♂, Chilambwe Falls, Kafubu River, 09°50'13"S, 30°43'35"E, 1420m, 8–12.ii.2019, MV Light Trap, Dérozier, V., Mulvaney, L., Takano, H. leg.; 1 ♀, same site, 8–9.xi.2014, leg. Smith, R., Takano, H., Oram, D.; 1 ♂, Kalungu, north of Isoka, 9°40'52"S, 32°42'50"E, 1280m, 5–8.iii.2017, MV, Oram, D., Miles, W., Smith, L. leg.; 3 ♂♂, Bruce-Miller Farm Choma, 16°38'12"S, 27°01'30"E, 1179m, 28.ii.–8.iii.2019, MV Light Trap, Dérozier, V., Imakando, M., Miles, W., Mulvaney, L. leg.; 1 ♂, Muchinga Province, Jombo village, 10°27'01"S, 33°14'30"E, 1400m, 30.xi.–05.xii.2023, actinic light trap, Bashford, M., Collins, A., László, G., Morgan, L., Volynkin, A. leg.; 2 ♂♂, Chitunta Plain (Miombo/Dambo mosaic), 11°29'12"S, 24°24'18"E, 1396m, 11–17.vi.2021, MV light trap, Chizuwa, D., Choongo, W. leg.; 1 ♀, Lukwakwa, West Lunga NP (Cryptosepalum forest/Dambo), 12°39'40"S, 24°26'13"E, 1147m, 9–15.xi.2018, MV Light Trap, Aristophanous, M., Dérozier, V., László, G., Oram, D. leg.; 1 ♀, Mayukuyuku, Kafue NP, 14°54'55"S, 26°03'47"E, 1080m, 21–26.xi.2013, Light Trap leg. Smith, Takano & Oram, GS: ANHRT 00242 (LG 4575) (ANHRT); 1 ♀, Kashitu [13°44'S, 28°38'E], i.1915, leg. H.C. Dollman; 1 ♀, Gimson, 1908 (NHMUK). **Zimbabwe**. 1 ♂, Melsetter [19°49'S, 25°52'E], 21.xi.1968, leg. A.J. Duke (TMSA); 1 ♂, Umtali, leg. G.A.K. Marshall (NHMUK).

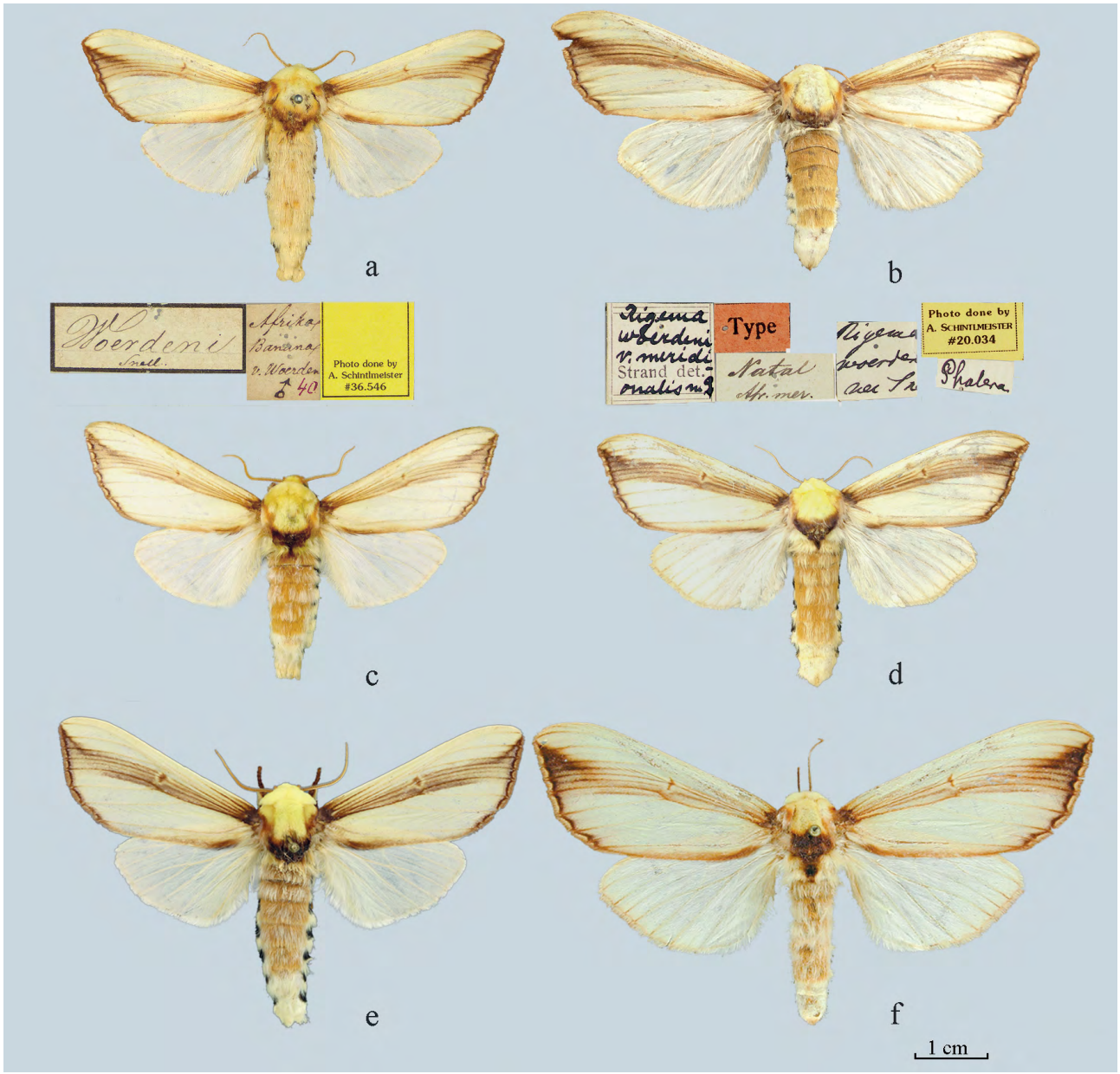


Figure 26. *Rigema woerdeni,* adults. **a)** ♂, DR Congo, holotype and associated labels (RMNH); **b)** ♀, RSA, Natal, lectotype of *Rigema woerdeni meridionalis* Strand, 1912 and associated labels (MfN); **c)** ♂, Eswatini, Malolotja, (TMSA); **d)** ♀, RSA, Port Dureford (TMSA); **e)** ♂, Uganda, Bwindi NP (CRF); **f)** ♀, Burundi, Gitega (RMCA).

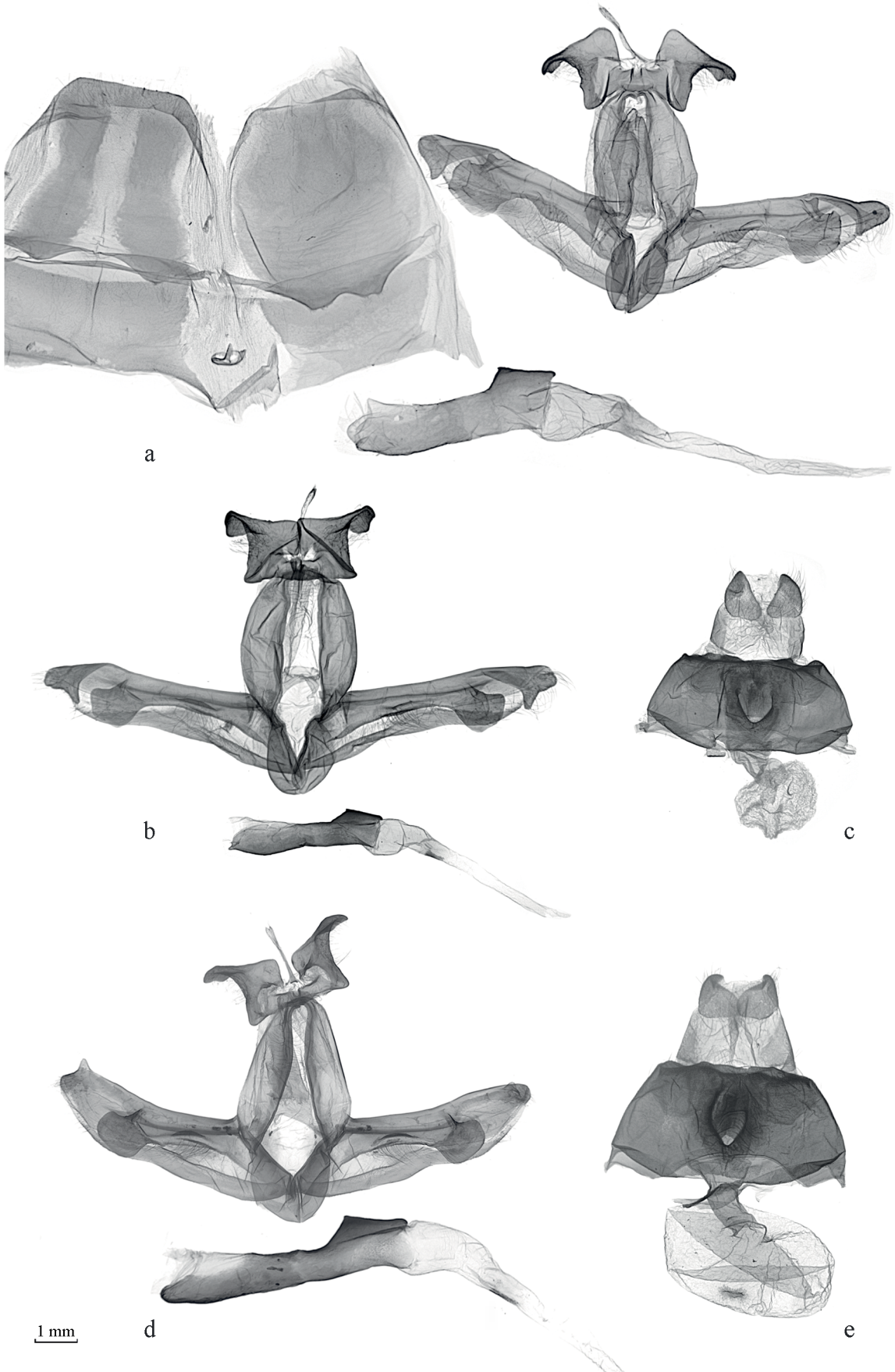


Figure 27. *Rigema woerdeni,* genitalia. **a)** ♂, Kenya, Transmara, Lolgierien, GS: MWM 35.242 (MWM/ZSM); **b)** ♂, Zambia, Changwena Falls, GS: LG 4574 (ANHRT); **c)** ♀, Zambia, Kafue NP, GS: LG 4575 (ANHRT); **d)** ♂, Eswatini, Mololotja, GS: TM 17.027 (TMSA); **e)** ♀, Tanzania, Livingstone Mts., GS: LG 4577 (ANHRT).

Diagnosis. Forewing length 23–31 mm in males and 30–36 mm in females. *Rigema woerdeni* is the largest species in the genus and can be readily distinguished by its pale-yellow forewing ground colour, the comparatively weakly contrasting subcostal streak, and the very narrow dark shading along the termen and anal margin. The presence of a conspicuous brown discal spot on the forewing appears to be unique within the genus.

Male genitalia. The male genitalia are characterized by large, robust, flag-like socii, which exhibit some variation in shape. The uncus is conspicuously short and slender, while the valva is narrow and lacks dilation of the costal margin. Although the phallus is somewhat variable in shape, the large carinal crest with an elongate triangular base is unique within *Rigema*.

Female genitalia. The female genitalia are distinguished by a long, broad eighth tergite and a remarkably small ostium surrounded by an ovoid antemedial plate. The antrum is short, weakly sclerotised, and infundibuliform. The ductus bursae is very short. The distal sclerotised plates of the corpus bursae are rounded, substantially smaller, and less heavily sclerotised than in other species of *Rigema*. The signum bursae is small, dash-shaped, and weakly sclerotised.

Distribution. *Rigema woerdeni* is confirmed from Burundi, the DRC, Eswatini, Ethiopia, Kenya, Malawi, RSA, Rwanda, Tanzania, Uganda, Zambia, and Zimbabwe. The type locality of *R. woerdeni* is located far from the main range of the species, which implies that the type specimen may have been incorrectly labelled approximately 150 years ago. Alternatively, since the species has not been recorded in Angola, the substantial gap between northwest Zambia and Banana may result from insufficient sampling.

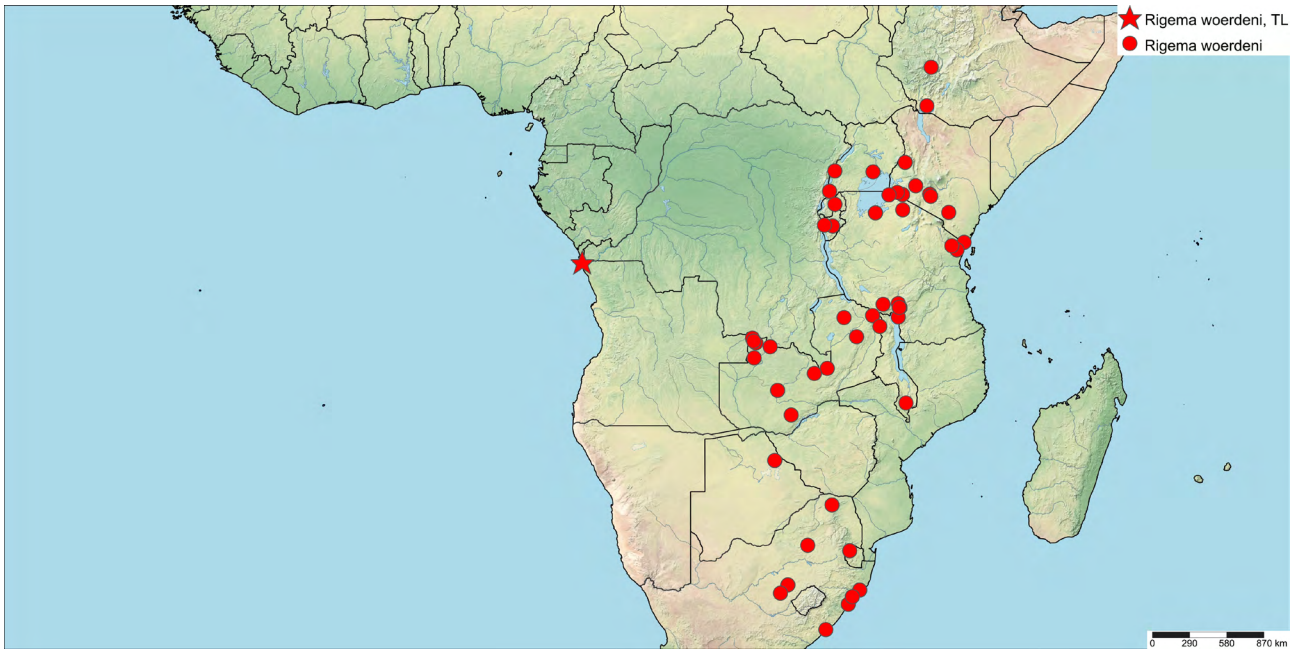


Figure 28. Distribution of *Rigema woerdeni.*

Rigema combusta (Walker, 1855)

(Figs 29, 30)

Anticyra combusta Walker, 1855, *List of specimens of Lepidopterous Insects in the Collection of the British Museum* **5**: 1092.
= *Dinara lineolata* Walker, 1856, *List of specimens of Lepidopterous Insects in the Collection of the British Museum* **7**: 1700.

Type material examined. **Lectotype** of *Anticyra combusta* Walker, 1865: ♂, [Philippines] [circular label with handwritten] "Phil. / Islds." // "1. ANTICYRA COMBUSTA" // QR code label with unique id.: NHMUK016480278 (NHMUK). **Holotype** (by monotypy) of *Dinara lineolata*: ♂, [India] [with handwritten] "Ind" // "Type." // [with handwritten] "A Walker's / type of / Dinara / lineolata" (OUMNH).

Remark. *Rigema combusta* was originally described from two syntypes, one originating from the Philippine Islands and the other from "New Ireland?". Subsequently, Swinhoe (1892) designated the specimen from the

Philippine Islands as the "Type", thereby effectively selecting it as the lectotype of the species. In the supplementary holdings of NHMUK, a male specimen from the Philippine Islands has been located bearing labels characteristic of Walker type material. This specimen is here regarded as the lectotype of *R. combusta* (Fig. 29a).

Additional material examined. More than 300 specimens of both sexes (including 10 with genitalia dissected) from: continental China (provinces of Heilongjiang, Beijing, Shaanxi, Hebei, Zhejiang, Fujian, Guangxi, Yunnan), Taiwan Island, Vietnam, Laos, Thailand, Myanmar, India (states of West Bengal, Sikkim, Uttarakhand, Maharashtra, Kerala, Tamil Nadu, and Odisha), Nepal, The Philippines (islands of Luzon, Marinduque, and Negros), and Indonesia (islands of Sumatra, Java, Bali, Flores, Pantar, Alor, and Timor).

Diagnosis. Forewing length 23–29 mm in males and 26–32 mm in females. *Rigema combusta*, the only Asian representative of the genus, is readily distinguished by the conspicuous, relatively short longitudinal triangular shadow extending across the medial to submarginal area between veins M2 and M3. The remaining wing pattern elements, including the numerous fine brown costal striae and the submarginal band, are similar to those of other congeners. The hindwing colour is variable, ranging from pale brown to dark brown.

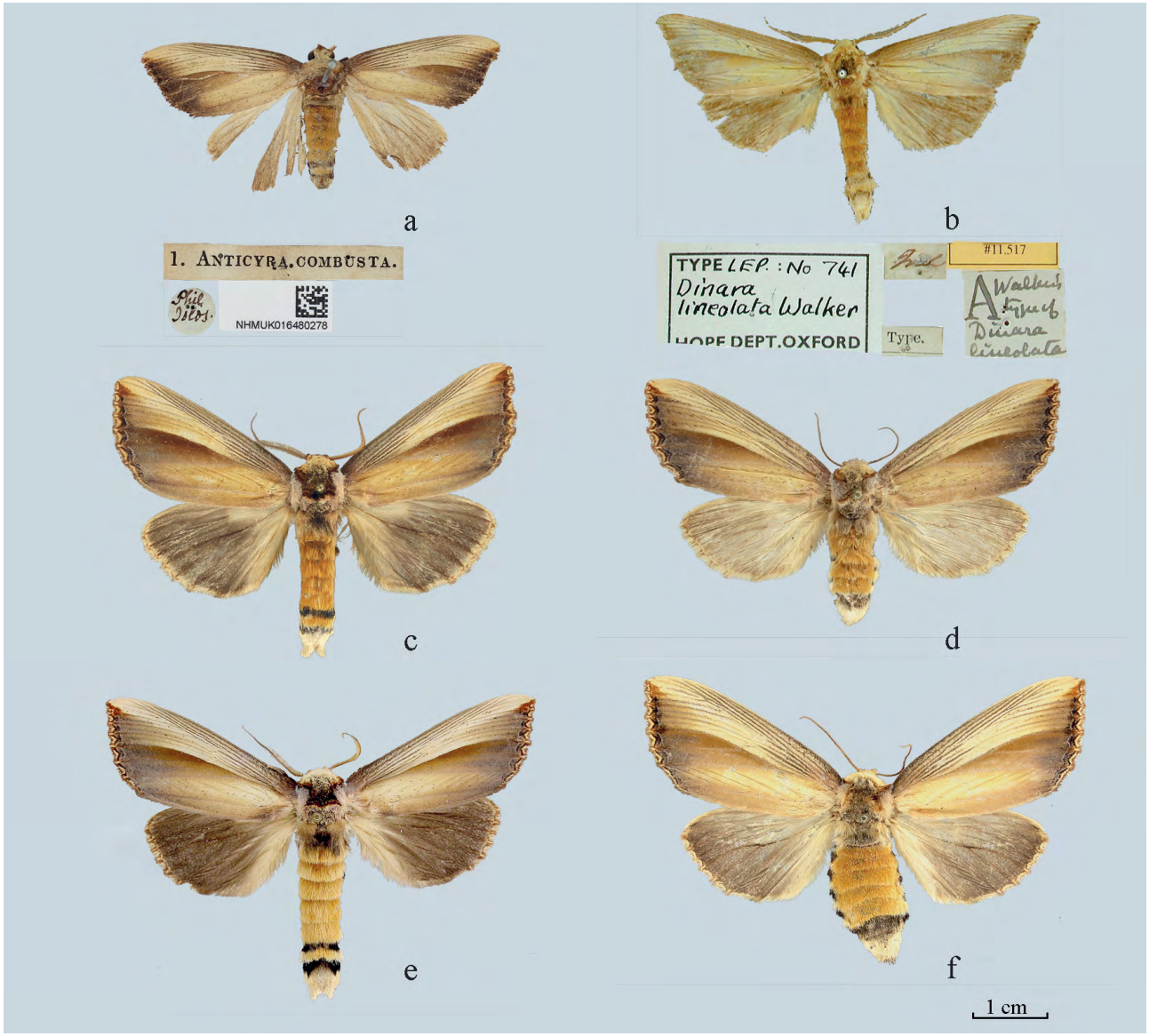


Figure 29. *Rigema combusta,* adults. **a)** ♂, Phillipines, lectotype (NHMUK); **b)** ♂, India, Hindostan, holotype of *Dinara lineolata* Walker, 1856 (OUMNH); **c)** ♂, Indonesia, Java, Cianur (CAS); **d)** ♀, Philippines, Negros (CAS); **e)** ♂, Thailand, Surukhani (CAS); **f)** ♀, China, Shaanxi, Taibaishan (CAS).

Male genitalia. The clasping apparatus is robust. The socii are large and stout, with a triangular apex that varies in shape. The costal plate of the valva is relatively broad, the editum bears a large quadrangular lobe, while the valval apex is provided with a short flap-like process. The phallus is short and stout, bearing a rounded triangular subapical carinal process. The everted endophallus possesses several basal diverticula.

Female genitalia. The copulatory organ is characterized by the sinuous distal margin of the eighth sternite, bearing a medial notch, a very broad ostium that is shallowly concave medially, a broad, somewhat infundibular antrum, and a very short ductus bursae. The distal sclerotised plates of the corpus bursae are large and uniquely shaped within the genus. The signum bursae is elliptical and variable in size.

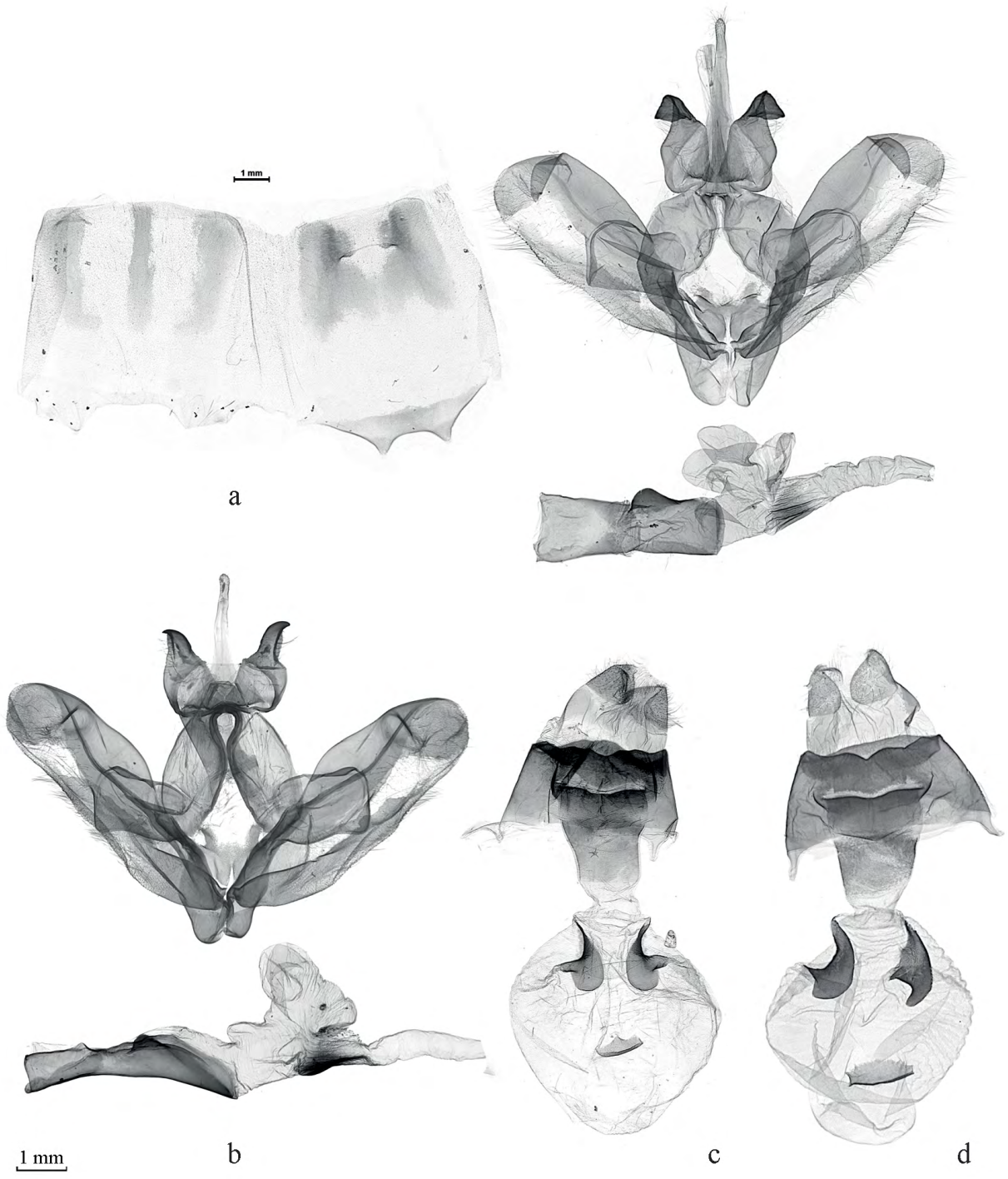


Figure 30. *Rigema combusta,* genitalia. **a)** ♂, Indonesia, N Sumatra, Berastagi, GS: GU 68-61 (CAS); **b)** ♂, Indonesia, Nusa Tenggara Timur, Alor Island, GS: GU 92-78 (CAS); **c)** ♀, Philippines, Negros, Mt. Mandalagan, GS: MV 17938 (NHMW); **d)** ♀, Indonesia, N Sumatra, Aek Tarum, GS: GU 68-62 (CAS).

Discussion

Taxonomic aspects

The present paper represents the second contribution in a series devoted to the taxonomic reassessment of Afrotropical Notodontidae, following the recent revision of the genus *Antheua* Walker, 1855 (Schintlmeister & László 2025). In this current work, we focused on the genus *Rigema* Walker, 1855 and provided a comprehensive evaluation of its species diversity and distribution.

The generic status of *Rigema* remains somewhat ambiguous. Comparative examination of the genital morphology revealed no consistent autapomorphic characters separating *Rigema* from the closely related *Antheua*. Furthermore, recent phylogenetic analyses recovered *Rigema* nested within a clade comprising species of *Antheua* and *Eutimia*, suggesting that these taxa may be congeneric (St Laurent *et al*. 2025). Despite this evidence, we provisionally retain *Rigema* as a valid genus owing to the highly distinctive external appearance of its species, which form a morphologically coherent and readily recognisable group. A broader phylogenetic analysis incorporating additional molecular and morphological data, particularly from all relevant type species, will be required to clarify the generic limits within this subfamily.

Prior to the present study, *Rigema* comprised six valid Afrotropical species, three junior synonyms, and a single species widely distributed in the Indomalayan Region. Examination of extensive material housed in numerous institutional and private collections has substantially increased our understanding of the genus. As a result, four new species and one new subspecies are described herein, and an additional species is transferred from *Antheua* to *Rigema*. Consequently, the number of currently recognized species-group taxa in the Afrotropical Region increases to 13.

The discovery of several previously overlooked taxa highlights the still-incomplete state of knowledge of Afrotropical Notodontidae. In particular, some species can be reliably identified only through detailed examination of the genitalia, as exemplified by *R. orientalis* and *R. morettoi* **sp. n.**, as well as members of the *R. vittata* species complex. It is therefore likely that the known distribution ranges of several taxa will require further refinement as additional material becomes available. Moreover, the existence of undescribed taxa cannot be excluded, especially in eastern Africa, where extensive areas remain insufficiently sampled.

Biogeographical overview

Similarly to species of *Antheua*, representatives of *Rigema* predominantly inhabit dry woodland and savannah habitats, where their larvae are known to feed on various grasses (St Laurent *et al*. 2025). The genus exhibits a largely Afrotropical distribution, with its diversity centre situated in eastern Africa. Within Asia, the genus is represented by a single, widely distributed species, *R. combusta*. This pattern is consistent with the genus *Antheua*, in which *A. servula* (Drury, 1773) is the sole Asian representative.

Among the Afrotropical species, *R. orientalis orientalis* possesses by far the widest distribution. Its range extends from central Sudan southwards to central Zimbabwe and from the Tanzanian coast westwards to the savannah regions of northern Democratic Republic of the Congo and northwestern Angola. *Rigema ornata* and *R. woerdeni* display broadly similar distribution patterns but are centred further south. Neither species extends north southern Ethiopia, while both are widely distributed across southeastern Africa. *Rigema ornata* additionally reaches central and western Angola. In contrast, *R. woerdeni* is known in western Central Africa solely from its type locality at Banana, near the mouth of the Congo River in the Democratic Republic of the Congo. The apparent absence of records from Angola is likely attributable to inadequate sampling, given that the species is relatively common in western Zambia.

Several species exhibit more geographically restricted distributions associated with the East African Rift system. *Rigema faber* **sp. n.** occurs primarily along the Albertine Rift, extending westwards onto the Zambian Plateau and northeastwards into southern Kenya. A comparable pattern is evident in *R. witti* **sp. n.**, whose range follows the Rift Valley and expands into the highlands of Tanzania and Kenya. The most localized East African endemic species appears to be *R. amharica* **sp. n.**, currently known only from the Kaffa region of the Ethiopian Highlands and likely restricted to this area.

Outside mainland Africa, *Rigema haasi* is endemic to Madagascar and represents the only species of the genus known from the island. At the opposite end of the continent, *R. orientalis strandi* **ssp. n.** occupies a disjunct West African range west of the Cameroon Volcanic Line, suggesting a long history of geographic isolation from the nominotypical subspecies.

A notable biogeographical pattern is exhibited by the allopatric sister-species pair *R. ochriventris* and *R. amphiaraus*. The former is confined to northern East Africa, whereas the latter occupies a broad West African range extending from Senegal eastwards to northern-central Nigeria. Their mutually exclusive distributions strongly suggest vicariant speciation, potentially linked to historical fragmentation of savannah habitats across tropical Africa.

Finally, *R. morettoi* **sp. n.** displays a particularly intriguing and apparently disjunct distribution. Most known specimens originate from West Africa, west of the Dahomey Gap, whereas a smaller number of records derive from the Zambian Plateau in southern-central Africa. Whether this unusual pattern reflects genuine disjunction, historical connectivity of suitable habitats, or simply insufficient collecting effort in intervening areas remains uncertain. Additional sampling across the Guinea-Congolian and Zambezian transition zones will be necessary to elucidate the true extent of the species' distribution.

Overall, the distributional patterns observed within *Rigema* indicate a strong association with African savannah and woodland biomes and suggest that historical processes affecting the continuity and fragmentation of these habitats have played a major role in the diversification of the genus. Further field surveys, particularly in eastern and central Africa, are likely to reveal additional range extensions and may uncover further undescribed taxa.

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The authors declare that to the best of their knowledge they conform to the national regulations and meet with the conditions and requirements of International Conventions concerning collecting/export and handling of the specimens presented in this Article.

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