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A review of the genus *Eucraera* Tams, 1930 (Lepidoptera: Lasiocampidae)

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Abstract

The genus *Eucraera* Tams, 1930 is reviewed, two new species are described: *E. nemesida* nov.sp. from Cameroon and *E. witti* nov.sp. from Kenya. The following new synonymy is established: *Eucraera magna* (Aurivillius, 1909) = *Ceratopacha minor* Gaede, 1915 nov.syn.; *Eucraera gemmata* (Distant, 1897) = *Eucraera gemmata asaphes* Tams, 1936 nov.syn. = *Eucraera aphrasta* Tams, 1936 nov.syn. The lectotype for *Lasiocampa salammbo* Vuillot, 1892 from MNHN is designated. External variability of species *E. gemmata* (Distant, 1897) and *E. magna* (Aurivillius, 1909) is discussed here for the first time. Sequences of COI gene are examined for *E. gemmate* (Distant, 1897), *E. salammbo* (Vuillot, 1892) and *E. witti* nov.sp.

Key words: Lepidoptera, Lasiocampidae, *Eucraera*, Africa, taxonomy, new species

Zusammenfassung

Die Gattung *Eucraera* Tams, 1930 wird revidiert und zwei neue Arten beschrieben: *E. nemesida* nov.sp. aus Kamerun und *E. witti* nov.sp. aus Kenia. Folgende neue Synonymien werden errichtet: *Eucraera magna* (Aurivillius, 1909) = *Ceratopacha minor*

Gaede, 1915 nov.syn.; *Eucraera gemmata* (Distant, 1897) = *Eucraera gemmata asaphes* Tams, 1936 nov.syn. = *Eucraera aphrasta* Tams, 1936 nov.syn. Der Lectotypus von *Lasiocampa salammbo* Vuillot, 1892 aus dem MNHN wird designiert. Die externe Variabilität von *E. gemmata* (Distant, 1897) and *E. magna* (Aurivillius, 1909) wird erstmalig beschrieben. Die Sequenzierung des COI gene von *E. gemmata* (Distant, 1897), *E. salammbo* (Vuillot, 1892) und *E. witti* nov.sp. wird beschrieben.

Introduction

Eucraera Tams, 1930 is the small genus ranged in Afrotropical region from Senegal to Republic of South Africa. Originally its species were considered in the genus *Ceratopacha* Aurivillius, 1909 and which included in 1909 type-species *Lasiocampa koellikerii* Dewitz, 1881 (orig. *köllikerii*) and *Ceratopacha magna* Aurivillius, 1909. Later, in 1927, Aurivillius included in the genus four more species: *salammbo* Vuillot, 1892, *gemmata* Distant, 1897, *minor* Gaede, 1915 and *decora* Fawcett, 1915. He divided them into two species groups. The first with smooth fasciae included *C. gemmata*, *C. koellikerii* and *C. salammbo*; the second with serrated fasciae: *C. magna*, *C. minor* and *C. decora*.

In 1930, William Horace Thomas Tams found an homonymy – the name *Ceratopacha* was already used by James Francis Stephens for a genus from the Thyatiridae, therefore Tams proposed *Eucraera* as a replacement name. Six years later he described two new taxa: *Eucraera gemmata asaphes* and *Eucraera aphrasta*. Since 1930 genus was not reviewed.

Eucraera is usually richly presented in collections, but the species are mostly incorrectly determined. Practically all (six out of seven) described species were figured in volume 14 of "Die Großschmetterlinge der Erde (Aurivillius, 1927)". *Eucraera gemmata asaphes* and *Eucraera aphrasta* were also figured in the original description (Tams, 1936: pl. 10, figs 5, 6). Thus, all species were illustrated and accompanied by rather detailed descriptions, but the problem with identification still remains because the external variability of each species and their distributional areas were unknown. The preparation of male and female genitalia did not give any significant results, because the genital armatures are practically indistinguishable in the different species and therefore not useful for specific diagnostic determination.

Shape of fasciae in wing pattern, the pattern and coloration of wings, and distribution of species were used for its identification.

Over 300 specimens from different parts of Africa were studied for the understanding of the diagnostic characters of *Eucraera* species.

The cytochrome *c* oxidase subunit 1 gene (COI, 5', 658 bp) was studied as well for species *E. gemmata*, *E. salammbo* and *E. witti* nov.sp. Final trees are figured here with the discussion. The analysis of COI gene was undertaken in the Canadian Centre for DNA Barcoding (Biodiversity Institute of Ontario, University of Guelph) under the curatorship of Rodolphe Rougerie (Université de Rouen) in the frames of project Lasiocampidae, Bombycidae and Eupterotidae of the world (LBEOW). Phylogenetic

and evolution analyses were conducted using MEGA version 5 (Tamura et al., 2011), for details see DNA analysis below.

The following abbreviations are used for museums and private collection where material was investigated (in alphabetical order):

CMNH..... Carnegie Museum of Natural History (Pittsburgh, PA, USA),
CMS ..... Private collection of Manfred Ströhle (Weiden, Germany),
CPB ..... Private collection of Patrick Basquin (Yvetot-Bocage, France),
CRG ..... Private collection of Roy W. Goff (Kotu, Gambia),
CRM..... Private collection of Raymond Murphy (Mzuzu, Malawi),
USPU ..... Ulyanovsk State Pedagogical University (Russia),
EMEM..... Entomological museum of Ulf Eitschberger (Markleuthen, Germany),
MCL..... Musée des Confluence (Lyon, France),
MHNG ..... Museum d'histoire naturelle (Geneve, Switzerland),
MNB ..... Museum für Naturkunde (Berlin, Germany),
MNHN ..... Museum National d'Histoire Naturelle (Paris, France),
MWM..... Entomological Museum of Thomas J. Witt (Munich, Germany),
NHML..... Natural History Museum (London, UK),
RMCA..... Royal Museum for Central Africa (Tervuren, Belgium),
ZFMK ..... Zoologisches Forschungsinstitut und Museum Alexander Koenig (Bonn, Germany),
ZSM ..... Zoologische Staatssammlung (Munich, Germany).

Other abbreviations: CAR – Central African Republic, DRC – Democratic Republic of the Congo, GU – genitalia slide, HT – holotype, PT – paratype, RSA – Republic of South Africa, TL – type locality, TS – type species.

Systematic part

***Eucraera* Tams, 1930**

Annals and Magazine of the Natural History, 6: 170

Eucraera was established as the objective replacement name for *Ceratopacha* Aurivillius, 1909.

Ceratopacha Aurivillius, 1909

Arkiv för Zoologie 5 (5): 13

TS: *Lasiocampa koellikerii* Distant, 1881, Nova Acta Acad. Caesar. Leop. Carol. 42 (2): 78 (by original designation). A junior homonym of *Ceratopacha* Stephens, 1850 (Lepidoptera, Thyatiridae), List Specimens Br. Anim. Colln Br. Mus. 5: 119.

Re-Description: The genus consists of middle-sized moths with well pronounced sexual dimorphism – females are bigger than males. Wingspan of male is 35–45 mm, female – 46–74 mm; the forewing's length is 16–23 mm and 24–35 mm correspondingly. The forewing is triangular or oval-like with a rounded and smooth external margin. The pattern of the forewing consists of three whitish well-marked fasciae (antemedial, postmedial and submarginal) and a black discal dot on R-Cu vein;

the shape of the forewing fasciae is diagnostic. The pattern of the hindwing consists of two white fasciae (medial and submarginal) and also a black discal dot, the pattern is usually absent on the anal part of the wing. The space between fasciae (in both pair of wings) may be covered with an additional patterning, which is not use for determination. Hence, the underside of hindwing has a pattern which can be used for Diagnosis. The humeral costal field of the hindwing bears long black scales visible in resting moths or on the underside. Abdominal scales can be black colored forming black stripes.

W i n g v e n a t i o n : In the forewing R1 and R4 are free; R2+R3 are on the common short fork (almost 1/5 of branch) as well as R5+M1. CuP is very thin; 1A and 2A are fused. In the hind wing R1 fuses with Sc and forms a small accessory cell between Sc and R. CuP is very thin and mostly reduced; 1A and 2A are fused, 3A is presented.

M a l e g e n i t a l i a : Uncus and gnathos are absent. Tegumen is band-shaped. Socii are well developed and covered with long chaetae. Valvae are bilobed, its cucullus and sacculus parts are united by a narrow membranous field. Cucullus is large and sparsely covered with long chaetae; the apical part is sclerotized and irregularly dentate. Sacculus is trapezoid with an elongated spur-like process; additional projection is placed in the basal part, it is oval shaped and covered with short chaetae. Vinculum is band-shaped, without distal processes or other modifications. Juxta units vinculum with aedeagus. Aedeagus is tubular and C-shaped, the apical spur is weakly sclerotized, its apex is wide and round. Vesica is bag shaped, the cornuti are thin and needle-shaped. Sternum and tergum VIII are not modified.

F e m a l e g e n i t a l i a : Papillae anales are rounded. Apophyses posteriores are a bit longer than apophyses anteriores. Lamella antevaginalis is T-shaped, large, well sclerotized whereas the lamella postvaginalis is absent. Ostium is large and oval. Ductus bursae is well sclerotized and wrinkled, has a ventral semispherical concavity, accreted with lamella antevaginalis. Corpus bursae is wide, elongated, tappering off cranially, the surface of the bursa is without a field of sclerotization and signum. Eighth sternum and tergum are not modified.

L a r v a of *E. gemmata* was described by Pinhey (1975: 125), of *E. salammbo* by Aurivillius (1927: 250). "The larvae of all three of these genera [*Schausinna*, *Trichopisthia* and *Eucraera*] are also similar, having long, soft hairs but no urticating bristles or thoracic tumours of irritating setae" (Oberprieler, 1993: 74).

C o c o o n is known for *Eucraera salammbo* (Vuillot, 1892). It is very robust, brownish, made of silk without inclusion of extraneous material (particles of soil or plant). The cocoon is attached to the branch above the ground. The special feature is the linear emergence aperture, this is similar to known cocoons of *Schausinna clementsi* (Schaus, 1897) and *S. regia* (Grünberg, 1910) (Oberprieler, 1993: 74).

F o o d p l a n t s : *Eucalyptus* spp. (Myrtaceae), *Brachystegia* spp., *Julbernardia* spp. (Fabaceae), *Sclerocarya birrea*, *Lannea* spp. (Anacardiaceae) were listed by Pinhey (1975: 125), Oberprieler (1993: 76), Kroon (1999) and Picker et al. (2002: 346).

D i a g n o s i s : The following characters distinguish *Eucraera* from other genera: the wing pattern consists of three whitish fasciae with black dot in R-Cu cell, abdomen is striped (sometimes stripes are reduced), cornuti are well developed and do not form separate

clusters, signi are absent on the corpus bursae. Within the genus, genitalia shape in both sexes is not diagnostic, and instead external characters shall be used for identification.

All *Eucraera* species are separated here into two groups: the *gemmata*-group and the *decora*-group. The first group includes five species: *E. gemmata*, *E. salammbo*, *E. nemesida* nov.sp., *E. koellikerii*, and *E. witti* nov.sp.; their fasciae are smooth (not crenulate), submarginal fascia of forewing is V-shaped (from R3 to Cu1). The second group includes two species: *E. decora* and *E. magna*; their fasciae are crenulate, submarginal fascia of forewing is not V-shaped.

For faster determination a "Key for external characters" is included below.

Species list:

the *gemmata*-group
Eucraera gemmata (Distant, 1897)
= *Eucraera gemmata asaphes* Tams, 1936 nov.syn.
= *Eucraera aphrasta* Tams, 1936 nov.syn.
Eucraera salammbo (Vuillot, 1892)
Eucraera nemesida nov.sp.
Eucraera koellikerii (Dewitz, 1881)
Eucraera witti nov.sp.
the *decora*-group
Eucraera decora (Fawcett, 1915)
Eucraera magna (Aurivillius, 1909)
= *Ceratopacha minor* Gaede, 1915 nov.syn.

***Eucraera gemmata* (Distant, 1897): figs 1–16, 49–53, 66–67**

Dendrolimus gemmata Distant, 1897, Ann. Mag. Nat. Hist. Ser. 6, Vol. 20: 207. TL: [RSA] Transvaal, Lydenburg District. Holotype (by monotypy): male (NHML) [examined].

= *Eucraera gemmata asaphes* Tams, 1936 nov.syn., Novit. Zool. 40: 107, pl. 10, fig. 5. TL: N. Angola, N'Dalla Tando, 2700 feet. Holotype (by original designation): male (NHML, GU 1936-32) [examined].

= *Eucraera aphrasta* Tams, 1936 nov.syn., Novit. Zool. 40: 108, pl. 10, fig. 6. TL: Angola, Morro de Pundo, 60 km N. E. of Lobito. Holotype (by original designation): male (NHML, GU 1936-39) [examined].

R e - D e s c r i p t i o n : Forewing's length is 18–20 mm in male and 26–27 mm in female. Ground color of wings varies from light beige to dark gray with a contrasting pattern. Antemedial fascia of forewing is waved, postmedial fascia is usually weakly waved, but may be practically straight. Pattern on underside of hindwing is strongly variable, and may consist of one dark crenulated submarginal fascia (fig. 13), or of two more or less pronounced medial fasciae and one submarginal (fig. 14). Abdomen is dorsally yellow with more or less pronounced transverse stripes of black scales between segments.

L a r v a is brown, with yellow and red lines and dots, and long blackish-brown hairs.

D i a g n o s i s : *E. gemmata* belongs to group with smooth fasciae on forewing, its wing coloration is greyish-white or brownish-white.

B i o n o m i c s : Caterpillar feeds on *Lannea* (Anacardiaceae), *Brachystegia* and *Julbernardia* (Fabaceae) (Pinhey, 1975: 125). Imagoes were caught between the altitudes of 40–2 400 m all the year round. Species is typically found in broadleaved forests.

D i s t r i b u t i o n (fig. 72): Ivory Coast, Burkina Faso, Ghana, Nigeria, Cameroon, DRC, Angola, Sudan, Kenya, Tanzania, Malawi, Zimbabwe, Mozambique, RSA.

T a x o n o m i c a l r e m a r k s : 1. The male holotype of *Eucraera gemmata* was prepared by W.H.T. Tams, who labeled the holotype and its genitalia slide by number 33, but the slide with that number contains the genitalia of a *Pseudometa* sp. (fig. 48).

2. The species strongly varies externally, it's possible to mark out three populations of this species. The first population is western, consisting of a light form with a narrow medial field (fig. 6), the second population consists of a light form with a normally developed medial field (figs 3, 4, 10), flying practically everywhere in the limits of the species distribution, and the third (eastern) population consists of a dark form with a normal field (figs 7–9) known from Kenya and Malawi; also, many specimens with intermediate characteristics are known. Six specimens of *E. gemmata* from different areas were studied for COI-5P in BOLD to understand relationships between these populations. As a result we can see a number of differences between the specimens of all three populations (see pairwise distances below). The sixth specimen from Ghana has many differences from the others: 15–21 different nucleotides from a total of 658 (2.3–3.2%). All population treating as one species, but maybe in far future these populations will separate.

3. Two new synonyms are established here, because the type specimens of *E. gemmata asaphes* (fig. 4, belong to second population) and *E. aphrasta* (fig. 2, eastern population) are practically indistinguishable from *E. gemmata*.

4. Very strange *E. gemmata* specimen was found in ZSM (figs 9, 14), it is brownish but not because of any soiling, and with postmedial fascia more sharp and crenulate like in *E. decora* group but on the whole pattern is similar to *E. gemmata*. It was prepared (ZSM GU 2013-001), but there are no any characters were found (fig. 52). Unfortunately it was not sent to DNA analysis because of its "age", it was collected in 1964. Probably that is example of some mutation like *E.* sp. described below (figs 35, 39, 65).

T y p e - s p e c i m e n s e x a m i n e d : male holotype of *Dendrolimus gemmata* Distant, 1897, Transvaal. Lydenburg Distr. (NHML); male holotype of *Eucraera gemmata asaphes* Tams, 1936, N'Dalla Tando, N. Angola, 2,700 feet, 27-x-1908, Dr. W.J. Ansorge (NHML); female paratype of *Eucraera gemmata asaphes* Tams, 1936, South Bihe District, Benguella Plateau, Angola, 5000 feet, Port. West Africa, Nov. 1928, T. A. Barns (NHML); male holotype of *Eucraera aphrasta* Tams, 1936, Morro de Pundo, 60 km NE of Lobito, Angola, 21 May, 1934, 200 m, Dr. K. Jordan (NHML). F u r t h e r m a t e r i a l e x a m i n e d : **Ivory Coast**: female, Elfenbeinküste, Ferkessedougou, 12.8.79, leg. Dr. Polizar (ZSM); male, Elfenbeinküste, Katiola, 16.10.76, leg. Dr. Polizar (ZSM). **Burkina Faso**: 2 males, 2 females, Obervolta, Folonzo am Fluß Comoe 24.8.85; 13.9.85; 12.10.85; 18.10.85, leg. Dr. Politzar (ZSM, GU LAS-10-076); 2 males, female, Obervolta, Bobo Dioulasso, 20.10.81; 9.9.82; 5.10.84, leg. Dr. Politzar (ZSM, GU LAS-10-075); 4 males, 3 females, Obervolta, Bobo Dioulasso, 30.6.75; 6.8.79; 14.8.79; 15.10.79; 22.8.81; 27.8.81; 20.9.84, leg. Dr. Politzar (EMEM); 2 males, Obervolta, Folonzo am Fluß Comoe 13.9.85; 14.9.85, leg. Dr. Politzar (EMEM); female, Obervolta, Folonzo, 11.5.80, Comoe, leg. Dr. Politzar (EMEM). **Ghana**: male, Ghana, Upper East Region, Nakpanduri, Gambaga Escarpment, 10–16.XI.2009, leg. Sz. Sáfián, S. Yevu (RMCA). **Nigeria**: male, N. Nigeria, Kaduna, Comoe, 21.7.1970, H.

Politzar (EMEM); 2 males, N. Nigeria, Jemaa, 15.10.1971, leg. Dr. Politzar (ZSM, GU LAS-10-074); male, N. Nigeria, Mokwa, 27.9.1971, leg. Dr. Politzar (ZSM); male, N. Nigeria, Kaduna, 18.5.81, leg. Dr. Politzar (ZSM); 2 females, N-Nigeria, Kaduna, 26.2.70; 6.6.70, leg. Dr. Politzar (ZSM). **Cameroon**: female, Cameroon, North Province, Faro River Camp, 275 m, 09.V.2005, leg. J. & W. De Prins (RMCA). **Sudan**: 2 males, South Sudan, East Equatoria State, Akotos province, Lolibai Mts., 1300 m, 15.viii.–10.ix.2010, Vladimir Gurko leg. (MWM). **DRC**: male, 2 females, Elisabethville, 12-XI-1917; XII-1934; 7-XII-1935, leg. Ch. Seydel (RMCA); male, Katanga, Ruwe, leg. V. Allard (RMCA). **Kenya**: 9 males, 6 females, Kenya, Kibwezi, 8.12.91; 9.12.91; 1.–3.5.92; 14.–30.11.92; 24–30.11.92; 19.12.92; 13.3.93; 18.4.–24[.4].93; 15.–20.11.93; 8. –14.5.1995, leg. Dr. Politzar (ZSM); 14 males, 4 females, Kenya, Kibwezi 700 m, 15.–30.4.2001; 10–25.12.2001; 15.–28.5.2001, leg. Dr. Politzar (ZSM, GU LAS-10-078, LAS-10-081); 2 females, Kenya, Chulu Hills, 19.12.92, leg. Dr. Politzar (ZSM); female, Kenya, Katamayo, 22.-29.12.92, leg. Dr. Politzar (ZSM, GU LAS-10-080); 7 males, 7 females, Kenya, Kibwezi, 8.12.91; 1–3.5.92; 15–20.11.92; 24–30.11.92; 13.3.93; 18.4–24[.4].93, leg. Dr. Politzar (EMEM); male, Kenya, Nguruman, Escarp. 14.6.91, leg. Dr. Politzar (EMEM); 2 females, Kenya, Chulu Hills, 29.12.92, leg. Dr. Politzar (ZSM); 26 males, 4 females, Kenya, Kibwezi, 700 m, 1.–7.1.2000; 15–31.12.2000; 15–30.4.2001,15.–28.5.2001; 10.–25.12.2001; 21.V.2002 Lf., leg. Dr. Politzar (MWM, GU 9540–9545); female, Kenya, South Ukambani, near Kibwezi, 20–27.XI.1994, leg. Dr. Politzar (MWM). **Tanzania**: 3 males, Tanzanie: Rukwa Province, Kisengere/Kasimbo, 1193 m, 07°27.540'S./030°52.812'E., 17-V-2004 (Ph. Darge) (MWM); male, Tanzania, Rukwa reg., Ruafi Game Reserve, 10 km N. Namanyere, 510 m, 19.11.2006 (MWM); 2 males, Tanzania, Pwani region, route Dar/Chalinze, près passage voie ferrée, 40 m, savane, 1-V-2005 (Ph. Darge) (MWM); male, 2 females, Tanzania, Iringa Reg., Ruaha, National Parc, h-912 m, 06.12.2006 (MWM); female, Tansania, Prov., Iringa, Str. zwischen Mikumi und Iringa, Umg. Kitonga, 650 m 27.11.2009, leg. A. Puchner (MWM); 2 females, Tansania, Prov., Iringa, Str. zwischen Mafinga und Makumbaku, Umg. Igenge-Iramba, 1600 m 01.12.2009, leg. A. Puchner (MWM); male, Tanzanie: Iringa Region, Kipengere Mts., Lugenge, Moorland, 2060 m, 09°24.864' S, 034°34.822' E, 10-I-2006 (local collector) (MWM); female, Tanzania, Nguru Mts., 11.2006 (MWM); male, Tanzania, Pwani Region, W. Bagamoyo, Mwetemo, Alt. 185 m, 06°21.239'S., 038°30.326'E., 26-XI-2007 (Ph. Darge) (ZSM, coll. Ph. Darge, GU LAS-10-083); male, Tanzanie: Rukwa Province, Kisengere/Kasimbo, 1193 m, 07°27.540'S / 030°52.812'E., 17-V-2004 (Ph. Darge) (ZSM, coll. Ph. Darge); male, Tanzania, Rukwa Region, Kalambo Forest Reserve, Alt: 1578 m, 08°21.383'S., 031°15.123'E., 04-II-2008 (Ph. Darge) (ZSM, colln Ph. Darge, GU LAS-10-084); male, Tanzania, Rukwa Region, Kalambo Forest Reserve, Alt: 1600 m, 08°21.132'S., 031°15.641'E., 10-XI-2007 (Ph. Darge) (ZSM, coll. Ph. Darge, GU LAS-10-088); male, Tanzanie: Pwani Region, savane de Mandera, 170 m, 15-I-2005 (Ph. Darge) (ZSM, coll. Ph. Darge); male, Tanzanie: Iringa Region, Kipengere Mts., Lugenge, Moorland, 2060 m, 09°24,864' S., 034°34.822' E., 10-I-2006 (local collector) (ZSM, coll. Ph. Darge); female, Tanzanie: Rukwa Region, Rukwa Escarpment, 1092 m, 07°05.913'S., 031°, 08.4844'E., 01-II-2008, (Ph. Darge) (ZSM, coll. Ph. Darge, GU LAS-10-079); female, Tanzanie: Dodoma, Region, Chunyu, 881 m, 06°54.291'S., 039°09.097'E., 05-I-2008 (local collector) (ZSM, coll. Ph. Darge); female, Tanzanie: Morogoro, Region, Mikesse Hills, 378 m, 06°14.457'S., 037°58.319'E. 17-IV-2007, (Ph. Darge) (ZSM, coll. Ph. Darge); female, Tanzania: Ubenazomozi, 24-VI-2003, local collector (ZSM, coll. Ph. Darge). **Malawi**: male, N. Malawi, Chitipa District, Mughese forest reserve, 2400 m, 9.39 S, 33.32 E, 9–16 January 2002, leg. R. J. Murphy (CRM); female, N. Malawi, Mzimba District, Mzuzu, Nkhorongo, 1375 m, 11.23 S, 33.59 E, 29 December 2002, leg. R. J. Murphy (CRM); male, S. Malawi, Nsanje District 125 km S Blantyre, Mwabwi Wildlife Reserve, 127 m, 16°39'20S, 35°03'02E, leg. Kovtunovich, Ustjuzhanin (USPU). **Zimbabwe**: 4 males, 2 females, Zimbabwe, Masvingo, Kyle National Park, 1.–4.12.1993, leg. Mey, Ebert (MNB). **Mozambique**: male, Port. Ost. Afr., Delagoabay, Sikumba (MNB). **RSA**: 2 males, Südafrica, Limpopo Prov., 6.5 km NNW Gramadoela, 425 m, Mopane Buschland, Phalaborwa TF+NF (SA 06), S23°53,492' E031°06,834', 19.01.2007, leg. J.-P. Rudloff (MWM, GU 16.963); male, Südafrica, Provinz Limpopo, 8 km S Louis Trichardt, (= Makhado) Ben Lavin Nature reserve, 1000 m 07.–

20.12.2007, leg. de Freina (MWM); female, E. Transvaal, White River, Dec 3rd 1909, leg. A. T. Cooke (MNB); male, South Africa, North West Province, E Pretoria, 40 km W Hartbeespoort, 17.–20.01.2005, leg. Andree Salk (CMS).

Eucraera salammbo (Vuillot, 1892): figs 17–22, 60–61, 68

Lasiocampa salammbo Vuillot, 1892, Bull. Soc. ent. France 2: CXC [190]. TL: [Mozambique] Delagoa-Bay. Lectotype: male (MNHN, GU 2011-003), here designated.

Re-Description: Forewing's length is 19–21 mm in male and 24–28 mm in female. Ground color of wings is yellowish-gray or yellowish-brown. Both medial fasciae are practically straight and merged at the base. The pattern on the underside of the hindwing consists of a dark submarginal fascia and half of two dark medial fasciae (fig. 22). Abdomen is dorsally yellow, male has rather pronounced bands of black scales between segments, in female black scales are practically reduced.

The caterpillar has black bottom, grey speckles in border of segments, and whitish head, spotted by black; lateral hairs are whitish with some tinge; bunch of first segment is black; each of segments from 5th to 11th has whitish hairs with light reddish base in the anterior border of back, further two bunches of black hairs and, here and there of the middle, two narrow transversal deep spots enclosed by red (Aurivillius, 1927: 250).

Diagnosis: *E. salammbo* belongs to group with smooth fasciae on forewing, its wing coloration is remarkable yellow.

Bionomics: Caterpillars feed on *Eucalyptus* (Pinhey, 1975; Picker et al., 2002) and on umgaan-tree (Aurivillius, 1927: 250), it inhabits bushveld and subtropical forests (Picker et al., 2002). Imagoes were caught between the altitudes 0–1 450 m in November–May.

Distribution (fig. 73): Ethiopia, Kenya, Tanzania, Mozambique and RSA.

Taxonomical remark: M.P. Vuillot did not designate a holotype of taxon in the original Description. He wrote only: "Plusieurs mâles/femelles, ex larva, de Delagoa Bay. coll. P. Vuillot" (Vuillot, 1892: CXCI [191]). During search in MNHN one cocoon and reared male and two females of *E. salammbo* from Delagoa Bay dated 1891 and 1892 were found. They completely correspond to Vuillot's description therefore they are considered as a part of original syntypic series. The male from this series is designated here as lectotype, it bears three labels (| divides lines): 1. blue circle with text written by ink "10S6 | 91"; 2. light green rectangle with text: "MUSEUM PARIS | DelagoaBay | H. DEYROLLE 1891, DelagoaBay" and "91" written by ink; 3. white rectangle label of genitalia slide with printed text "MNHM | Lasiocampidae | GU 2011-003". This specimen was designated by a red rectangular label with the printed text "LECTOTYPE male | *Lasiocampa* | *salammbo* | Vuillot, 1892 | des. A. Prozorov".

Type-specimens examined: male, lectotype of *Lasiocampa salammbo* Vuillot, 1892, Delagoa Bay, H. Deyrolle, 1891 (MNHN, GU 2011-003); 2 females, paralectotypes, Delagoa Bay, H. Deyrolle, 1891; 1892. Further specimens examined: **Ethiopia**: 2 males, S-Ethiopia, GamoGofa, V.2008, ArbaMinch, 1320 m, G. Riedel, R. Beck (MWM); male, S. Ethiopia, Arba Minch, Reg., Omo, Prov. Gemu, Gofa, 1350–1450 m, 6°0'N 37°33'E, 14.IV.–2.V.2001, leg. R. Beck (MWM, GU 16.960). **Kenya**: 3 males, Kenya, South Coast, 0 m, Marenche forest, 1.-15.[...] 2000, leg. Dr. Politzar (MWM), male, Kenya, Kibwezi, 700 m, 15.–30.4.2001 Lf., leg. Dr. Politzar (MWM). **Tanzania**: 2 males, Tanzanie:

Pwani Region, Mandera, savane, 170 m, 25-V-2005 (Ph. Darge) (MWM); 2 males, Tanzania, Nguru Mts., 11.2006 (MWM); male, Tanzanie: Pwani Region, W. Bagamoyo, Kipwangwa, 38 m, 06°25.232'S., 038°42., 183'E., 18-III-2006 (Ph. Darge) (ZSM, coll. Darge); male, Tanzanie: Rukwa Region, Rukwa Escarpment, 1092 m, 07°05.913'S., 031°, 08.4844'E., 01-II-2008, (Ph. Darge) (ZSM, coll. Darge, GU LAS-10-087); male, Tanzanie: Morogoro, Region, Mikesse Hills, 378 m, 06°14.457'S., 037°58.319'E. 17-IV-2007, (Ph. Darge) (ZSM, coll. Darge); female, Tanzanie: Iringa Region, Ruaha National Park, Tandala Camp, 910 m, 07°46.212'S., 035°00.319'E., 30-III-2007 (Ph. Darge) (ZSM, coll. Darge, GU LAS-10-077). **RSA**: male, Südafrican Republik, Provinz Limpopo, 20 km SW Mokopane (= Potgietersrus), 1200 m, 10.–12.12.2009, leg. de Freina (MWM); male, Südafrica – Pumalanga Prov., Barberton 650 m (SA04), Inni Krater Westhang NF, Subarbanes Busch- und Gartenland, S25°45'035' E030°59,532', 15.01.2007, leg. J.-P. Rudloff (MWM, GU 16.959).

***Eucraera nemesida* nov.sp. : figs 30–32, 60–61**

H o l o t y p e : male, Cameroon (MNB). P a r a t y p e : male, Cameroon (MNB).

D e s c r i p t i o n : One of the smallest species, forewing's length is 16–17 mm, wingspan is 35–38 mm. Ground color of the wings is brown. Antemedial fascia is waved, postmedial is practically straight, both are merged in the base. The pattern of the underside of the hindwing looks like *E. gemmata*'s (fig. 32). Abdomen is dorsally yellow, with reduced black stripes. Male genitalia are common and without any significant characters.

D i a g n o s i s : *E. nemesida* belongs to group with smooth fasciae on forewing and easily diagnosing by its brown coloration unusual for genus.

B i o n o m i c s : Unknown.

D i s t r i b u t i o n (fig. 74): Cameroon.

E t y m o l o g y : Nemesis or Nemesida is the goddess of retribution and vengeance in Greek mythology.

***Eucraera koellikerii* (Dewitz, 1881): figs 23–25, 29, 56–57**

Lasiocampa köllikerii Dewitz, 1881, Nova Acta Acad. Cur. 42: 78, pl. 1, fig. 15. TL: [Angola, Cabinda] Chinchoxo. Holotype (by original designation): male (MNB) [examined].

R e - D e s c r i p t i o n : Forewing's length is 21–23 mm in male and 28–32 mm in female. Ground color of wings is yellowish-gray or yellowish-brown. Antemedial fascia is waved, postmedial is practically straight, both are merged at the base. The pattern of the underside of the hindwing consists of submarginal and medial fasciae, both are dark and crenulate. Abdomen is dorsally yellow, male has more or less pronounced stripes of black scales between segments, in female black scales are practically reduced.

D i a g n o s i s : *E. koellikerii* belongs to group with smooth fasciae on forewing, it's easily diagnosing by big size and V-shaped part of external fascia on forewing, externally similar to *E. witti* nov.sp. but without white spot and not so yellow than *E. salammbo*.

B i o n o m i c s : Imagoes were caught between the altitudes of 400–500 m in January–March, June and August–October. Species is typically found in evergreen equatorial and tropical forests.

D i s t r i b u t i o n (fig. 75): Ivory Coast, Cameroon, Equatorial Guinea, Congo, DRC, and Angola.

Type-specimens examined: male, holotype of *Lasiocampa köllikerii* Dewitz, 1881, Chinchoxo, [leg.] Falkenstein; male, paratype of *Lasiocampa koellikerii* Dewitz, 1881, Chinchoxo, [leg.] Falkenstein. Additional specimens examined: **Ivory Coast**: female, C. I., Adzopé, 3.II.[19]70, P. Dubief (MHNG). **Cameroon**: male, Cameroun, Nkolbisson, 3-II-1966, leg. B. de Miré (RMCA); female, Kamerun, Victoria, leg. Preuss (MNB). **Equatorial Guinea**: male, Span. Guinea, Nkolentangan, 9.I.[19] 08, leg. Teßmann (MNB); female, Span. Guinea, Benitogbt., 8.VIII.[19]06, leg. Teßmann (MNB). **Congo**: 7 males, Congo, Odzala Nat. Park, 400–500 m, 0°23' N, 14°50' E, leg. Siniaev & Murzin (MWM, GU 9530, 16.961); 2 males, Congo – D'Odzala, Parc National 400-500 m, 1°.00' N.B./15°.00' E.L., 29. Januar – 3. March 1997, leg. S. Murzin & V. Siniaev (MWM). **DRC**: 2 males, female, Uele: Paulis, 29-IX 1955; 19 III-1957; 13-6-1960, leg. M. Fontaine (RMCA); female, Katanga: Ruwe, leg. V. Allard (RMCA). **Angola**: male, Nordwest – Angola, Prov. Nordcuanza, Canzele, 30 km nördl. Oujculungo, 18.X.1957, leg. G. Heinrich (ZSM).

Eucraera witti nov.sp.: figs 26–28, 58–59

Holotype: male, Kenya süd, Straße Nairobi-Mombasa, Voi, Tsavo National Parc, Salaga Lodge, 500 m, 07.–08.4.2009, leg. A. Puchner (MWM, GU 17.475). Paratypes: **Kenya**: male, Kenya, South Coast, 0 m, Marenche Forest, August/Sept. 2002, Lf., leg. Dr. Politzar (MWM); male, Kenya, South Coast, 0 m, Marenche Forest, Oktober 1999, Lf., leg. Dr. Politzar (MWM, GU 9537); male, Kenya central, Mount Kenya-Südseite, Kutus, Castle forest, 1900 m, 29.–30.3.2009, leg. A. Puchner (MWM); 2 males, Kenya süd, Malindi, Sokode-Gede forest, 10–30 m 03.–06.4.2009, leg. A. Puchner (MWM); male, Kenya, South Coast, Marenche Forest, 20.4.96, leg. Politzar (ZSM); male, Kenya, Sokoke Forest, 15–31.2.1994, leg. Dr. Politzar (ZSM). **Tanzania**: 4 males, Tanzania, Pwani Region, W. Bagamoyo, Mwetemo, Alt. 185 m, 06°21.239'S., 038°30.326'E., 26-XI-2007 (Ph. Darge) (ZSM, coll. Darge); male, Tanzania, Pwani Region, W. Bagamoyo, Mwetemo, Alt. 185 m, 06°21.239'S., 038°30.326'E., 26-XI-2007 (Ph. Darge) (CPB).

Description: Male forewing's length is 19–23 mm. Ground color of wings is yellowish-gray or yellowish-brown. Antemedial fascia is practically straight, postmedial is straight, both are merged at the base. The pattern of the underside of the hindwing consists of a submarginal and medial fascia, both are dark and crenulated. Abdomen is dorsally yellow with stripes of black scales. Male is typical for genus, totally compact, not large like in *E. koellikerii*. Genitalia similar to *E. salammbo*, *E. magna* and *E. decora*.

Diagnosis: Externally it is similar to *E. koellikerii*, but has a diagnostic white spot on the forewing and a practically straight postmedial fascia. The species is only found in Eastern Africa.

Bionomics: Imagoes were caught between the altitudes of 0–1 900 m in February–April and August–November. Species is typically found in broadleaved forests.

Distribution (fig. 76): Kenya and Tanzania.

Etymology: The species is named in honor of Mr Thomas Josef Witt, who sponsored this study.

Eucraera decora (Fawcett, 1915): figs 33–34, 36–38, 62, 69

Ceratopacha decora Fawcett, 1915, Proc. Zool. Soc. London: 110, pl. 2, fig. 32. TL: [Kenya] Kedai. Holotype (by monotypy): female (NHML) [examined].

Re-Description: One of the smallest species of the genus, forewing length is 18 mm in male and 25–26 mm in female. Ground color of wings varies from light-brownish-white to yellowish-white. All fasciae are crenulated and may be merged at the

base. The pattern of the underside of the hindwing consists of dark, weakly pronounced submarginal, and practically reduced medial fasciae. Abdomen is dorsally yellow, male has the largest amount of black scales in genus, they are merged into a large black spot, in female black scales are practically reduced.

D i a g n o s i s : *E. decora* belongs to group with crenulate fasciae on forewing, externally similar to *E. magna* but remarkable smaller and the pattern of wing's underside is less pronounced.

B i o n o m i c s : Imagoes were caught between the altitudes of 475–1 290 m in April, October, and November. The species is typically found in broadleaved forests but is also known from grassland.

D i s t r i b u t i o n . Somalia, Kenya, and Tanzania.

T y p e - s p e c i m e n s e x a m i n e d : female, holotype of *Ceratopacha decora* Fawcett, 1915, Kedai, nach 18/12, B. E. A. (NHML). A d d i t i o n a l s p e c i m e n s e x a m i n e d : **Somalia**: male, Somalia m., Caanole Fluß, 17.4.88, leg. Dr. Politzar (EMEM). **Tanzania**: male, Tanzanie: Tanga Region, savanne près des Mts Pare Sud., 475 m, 04°40.128' S, 38°05.872 E, 24-X-2004 (Ph. Darge) (ZSM, coll. Darge); male, Tanzanie: Tanga Region, savanne près des Mts Pare Sud., 475 m, 04°40.128' S, 38°05.872 E, 24-X-2004 (Ph. Darge) (MWM, GU 16.962); female, Tanzania: Namanyere, 1290 m, 16.11.2005, local collector (ZSM, coll. Darge, GU LAS-11-042).

Eucraera magna (Aurivillius, 1909): figs 40–47, 63–64, 70–71

Ceratopacha magna Aurivillius, 1909, Arkiv f. Zool. 5(5): 14. TL: Sierra Leone. Holotype: (by monotypy) female (MNB) [examined].
= *Ceratopacha minor* Gaede, 1915 nov.syn., Int. ent. Z. 9: 73. TL: Bate, Kamerun. Holotype: (by monotypy) male (MNB) [examined].

R e - D e s c r i p t i o n : Forewing length is 19–22 mm in male and 30–35 mm in female. Ground color of wings is white with brownish or yellowish pattern. All fasciae are crenulated. The pattern of the hindwing varies geographically. The western population (from Gambia to Cameroon) has patterning only in the costal part of the wing on the upperside, and the whole submarginal and medial fasciae on the underside of the wing (figs 40–41, 43–44). Hindwing of eastern population (from CAR to Tanzania) is completely patterned on the upperside, as on the underside (figs 42, 45–47). Abdomen is dorsally yellow in male and whitish in female, black scales can be pronounced.

D i a g n o s i s : *E. magna* belongs to group with crenulate fasciae on forewing, externally similar to *E. decora* but remarkable bigger and the pattern of wing's underside is more pronounced.
B i o n o m i c s : Imagoes were caught between the altitudes of 200–800 m in March–June and August–November in forests, shrubland and grassland.

D i s t r i b u t i o n : Gambia, Sierra Leone, Ivory Coast, Burkina Faso, Ghana, Togo, Nigeria, Cameroon, CAR, DRC, Ethiopia, Kenya, Tanzania.

T y p e - s p e c i m e n s e x a m i n e d : female, holotype of *Ceratopacha magna* Aurivillius, 1909, Sierra Leona [sic!]; male, holotype of *Ceratopacha minor* Gaede, 1915, Neu-Kamerun, Bate, III.1913, Houy S.G. A d d i t i o n a l s p e c i m e n s e x a m i n e d : **Gambia**: male, Gambia, Abuko, 13.23,41 N, 16.38,45 W, 15.XI.2007, leg. R. W. Goff (CRG). **Sierra Leone**: male, female, Sierra Leone, Tingi hills forest reserve, Singi-Singi Mts., ca. 46 km NE Koido-Sefadu, near Bandaperei (Kono), 800 m, 8°57.083 N, 10°44.751 W, 13.–15.04.2010,

leg. Rudloff (CMS). **Ivory Coast**: female, Elfenbeinküste, Ferkessedougon, 22.10.78, leg. Dr. Politzar (EMEM); male, Repubpic Elfenbeinküste, RCI, Comoe, 5/2002 (CMS); female, Repubpic Elfenbeinküste, RCI, Touba, 4/2002 (CMS); male, Côte d'Ivoire, Lamto (Toumodi), 22.9.1966, leg. Cl. Girard (RMCA). **Burkina Faso**: 2 males, 2 females, Obervolta, Bobo Dioulasso, 10.10.80; 20.10.81; 9.9.82; 26.9.84, leg. Dr. Politzar (EMEM); 4 males, female, Obervolta, Folonzo am Fluß, Comoe 12.10.85; 10–14.5.86, leg. Dr. Politzar (EMEM); 4 males, female, Obervolta, Folonzo am Fluß, Comoe 13.9.85; 14.9.85; 7.10.85; 10.-14.6.86, leg. Dr. Politzar (ZSM); 2 females, Obervolta, Bobo Dioulasso, 17.9.76; 12.9.81, leg. Dr. Politzar (ZSM, GU LAS-10-091). **Ghana**: male, C. Ghana, Ashanti Region, 15 km ESE Ejura, 200 m, 07°330' N, 01°265' W, 25.IX 2011, leg. V. Zolotuhin (MWM). **Togo**: male, Togo, Klouto, VIII-[19]69, leg. J. Poulard (MCL); male, Togo, Atakpamé, VIII-[19]69, leg. J. Poulard (MCL); female, Togo, Bismarkburg, Ueburg zur Begeuzeit, 1.3.–15.3.[18]91, leg. R. Büttner (MNB). **Nigeria**: male, Nordnigeria, Mokwa, 25.10.1970, leg. Dr. Politzar (EMEM); male, N. Nigeria, Mokwa, 27.9.1971, leg. Dr. Politzar (EMEM); male, Nigeria, Kaduna 23.6.70, leg. Dr. Politzar (EMEM); male, N-Nigeria, Kaduna, 14.9.71, leg. Dr. Politzar (ZSM, GU LAS-10-089); male, Nigeria: Oyo State, Int. Inst. Tropical. Agr., 240 m, 7,5008° N, 3,9065° E, 24 June 2006, leg. G. M. Miller & T. M. Kuklenski (CMS). **CAR**: male, R. C. A., Bangui, Chasseurs Africains (MHNG). **DRC**: male, Haut-Uele: Moku, Moto, 8-5-1927, leg. L. Burgeon (RMCA); male, Ht. Katanga, Tshinkolobwe, 8.I.[19]31, leg. J. Romieux (RMCA); male, Katanga, Kolwezi, 10-1953, leg. V. Allard; 2 males, 2 females, Ellisabethville, 24-I-1944; 25-I-1949; 28-I-1949; 9-I-1951, leg. Ch. Seydel. **Kenya**: female, Kenya, Chulu hills, 19.12.1992, leg. Dr Politzar (CMS); 4 males, 3 females, Kenya, Kibwezi, 13.1.73; 8.12.91; 1–3.5.92; 24–30.11.92; 18.4–24[.4].93; 8.12.2000, leg. Dr. Politzar (EMEM); 2 males, Kenya, Escarpment, Kikuyu 13.12.72, leg. Dr. Politzar (EMEM); female, Kenya, Chulu Hills, 29.12.72, leg. Dr. Politzar (EMEM); 12 males, 2 females, Kenya, Kibwezi, 700 m, 15-31.12.2000; 15.-28.5.2001; 10.-25.12.2001; 21.V.2002, leg. Dr. Politzar (MWM); 3 males, 2 females, Kenya, South Ukambani, near Kibwezi, 06-20.XI.1994; 20.-27.XI.1994 Lf, leg. Dr. Politzar (MWM); male, female, Kenya, Transmara, Lolgorien, 2000 m, 15.2.-8.3.2002, leg. Dr. Politzar (MWM); 2 males, 3 females, Kenya, Kibwezi, 8.12.91; 15.–26.11.92; 24.–30.11.92; 13.3.93, leg. Dr. Politzar (ZSM); 5 males, 3 females, Kenya, Kibwezi, 700 m, 15–31.12.2000; 15.–30.4.2001; 15.–28.5.2001; 21.V.2002, leg. Dr. Politzar (ZSM); male, female Kenya, Katamayo, 22.–29.10.92, leg. Dr. Politzar (ZSM); female, Kenya, Südküste, Marenche Forest, 15.2.95, leg. Dr. Politzar (ZSM); female, Kenya, South Ukambani, near Kibwezi, 20–27.XI.1994, leg. Dr. Politzar (ZSM); 3 females, Kenya, South Ukambani, 14.12.95; 14.12.96; 25.5.2002, leg. Dr. Politzar (ZSM); 3 females, Kenya, Chulu Hills, 29.12.92, leg. Dr. Politzar (ZSM, GU LAS-10-092). **Tanzania**: male, Tanzania, Manyara, Ngorongoro, nordwestl. Karatu, 1660 m, 03°19'39 S, 35°36'19 E, 25.02.–14.03.2008, leg. T. & M. Ströhle (CMS); female, Insel Ukerewe (ZFMK).

Eucraera sp.: figs 35, 39, 65

Male, Tansania, Mpanda, Sibwesa, 18.1.1963. leg. J. Kielland (ZSM, GU 2013-002)

D e s c r i p t i o n : One peculiar specimen was found in ZSM collection, it is worn, looks like *E. magna* but with wide dark external fascia on forewing's upper side and underside. In genitalia tegumen is wider than of *E. magna*. It is difficult to say at now is that new species or mutant of *E. magna*, needs at least one more specimen.

DNA analysis

Three species of *Eucraera* were sent to Canadian Centre for DNA Barcoding for study the mitochondrial gene cytochrome *c* oxidase subunit 1 (COI, 5', 658 bp). The evolutionary history was inferred using two methods: Maximum parsimony (MP, fig. 79) and Unweighted Pair Group Method with Arithmetic Mean (UPGMA, fig. 80). Bootstrap consensus trees inferred from 1000 replicates are chosen to represent the evolutionary history of analyzed taxa. There were a total of 658 positions in the final dataset, 69 out of which were parsimony informative. Species *Schausinna affinis* Aurivillius, 1910 and *Chondrostegoides jamaka* Zolotuhin, 2007 were taken as outgroups because *Schausinna* Aurivillius, 1909 is a closely related genus, and *Chondrostegoides* Aurivillius, 1905 is most distant (see Pairwise distances). Both phylograms show that species *E. gemmata*, *E. witti* and *E. salammbo* form three separate clusters, *S. affinis* and *Ch. jamaka* are placed in a subgroup. The cluster of *E. gemmata* is ramified because of its three populations. Pairwise distances show a number of differences of COI gene between all specimens examined.

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References

Aurivillius Ch. (1909): Diagnosen neuer Lepidopteren aus Africa. – Arkiv för Zoologi Vol. 5, No. **5**: pp. 1-29.

Aurivillius Ch. (1927): Lasiocampidae. – In: Seitz, A. (Ed.) – Die Groβschmetterlinge der Erde Vol. 14: Die afrikanischen Spinner und Schwärmer. Alfred Kernen Verlag, Stuttgart: pp. 206-281.

Flecther D.S. & Nye I.W.B. (1982): Superfamily Bombycoidea. – In: Nye (Ed.) – The generic names of moths of the world, Vol. 4, Trustees of British Museum, London: 192 pp.

Kroon D.M. (1999): Lepidoptera of Southern Africa: host-plants & other association, a Catalogue. – Lepidopterists' Society of Africa: 160 pp.

Oberprieler R.G. (1993): Biological notes on the eggar moth *Schausinna regia* (Grünberg) (Lepidoptera: Lasiocampidae). – Metamorphosis Vol. 4, No. **2**: 73-78.

Picker M., Griffiths C. & A. Weaving (2002): Field guide to insects of South Africa. – Struik Publishers, Cape Town: 440 pp.

Pinhey E.C.G. (1975): – Moths of Southern Africa: descriptions and color illustrations of 1183 species, Tafelberg, Cape Town: 273 pp.

Stephens J.F. (1850): List of the specimens of British animals in the collection of the British Museum Part **5**: Lepidoptera. Order of Trustees, London: 353 pp.

Tams W.H.T. (1930): New Rhodesian Lepidoptera Heterocera. – The annals and magazine of natural history, Ser. 10, Vol. **6**: 161-176.

Tams W.H.T. (1936): Dr. Karl Jordan's expedition to South-West Africa and Angola: Lasiocampidae. – Novitates Zoologicae **XL**: 95-114.

Tamura K., Peterson D., Peterson N., Stecher G., Nei M. & S. Kumar (2011) MEGA5: Molecular Evolutionary Genetics Analysis using maximum likelihood, evolutionary distance, and maximum parsimony methods. – Molecular Biology and Evolution, V. **28**: 2731-2739.

Vuillot M.P. (1892): [*Lasiocampa salammbo* n.sp.] Bulletin entomologique, Séance du 27 julliet 1892. – Annales de la Société entomologique de France: p. CXC.

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	No.	1	2	3	4	5	6	7	8	9	10	11	12	13
Eucraera *gemmata* LBEOW727-10	1	0												
Eucraera *gemmata* LBEOW744-10	2	0	0											
Eucraera *gemmata* LBEOW1965-11	3	2	2	0										
Eucraera *gemmata* LBEOW1209-11	4	11	11	9	0									
Eucraera *gemmata* LBEOW521-10	5	13	13	11	2	0								
Eucraera *gemmata* LBEOW1652-11	6	15	15	16	19	21	0							
Eucraera *witti* LBEOW743-10	7	31	31	31	34	36	30	0						
Eucraera *witti* LBEOW742-10	8	31	31	31	36	38	30	2	0					
Eucraera *salammbo* LBEOW488-10	9	36	36	35	38	40	33	38	38	0				
Eucraera *salammbo* LBEOA277-11	10	36	36	35	38	40	33	38	38	2	0			
Eucraera *salammbo* LBEOW741-10	11	34	34	35	38	40	33	40	40	4	4	0		
Schaussina *affinis* LBEOW1084-11	12	54	54	55	54	56	41	53	53	57	57	57	0	
Chondrostegoides *jamaka* LBEOW1765-11	13	95	95	96	98	98	96	97	97	95	93	91	103	0

Figs 1–16. *E. gemmata* (Distant, 1897): (**1**) male holotype of *Dendrolimus gemmata* Distant, 1897, Transvaal, Lydenburg District (NHML); (**2**) male holotype of *E. gemmata asaphes* Tams, 1936, N. Angola, N'Dalla Tando, 2700 feet (NHML); (**3**) male, Südafrica, Limpopo Prov., 6.5 km NNW Gramadoela, 425 m, Mopane Buschland, Phalaborwa TF+NF (SA 06), S23°53,492' E031°06,834', 19.01.2007, leg. J.-P. Rudloff (MWM); (**4**–**5**) male holotype of *E. aphrasta* Tams, 1936, Angola, Morro de Pundo (NHML); (**6**) male, Obervolta, Folonzo am Fluß Comoe, 13.9.85, leg. Dr. Politzar (ZSM, GU LAS-10-076); (**7**) male, Kenya, Kibwezi, 700 m, 15–31.12.2000, leg. Dr Politzar (MWM, GU 9542); (**8**) female, Kenya, Kibwezi, 700 m, 15–31.12.2000, leg. Dr Politzar; (**9**) male, Tanganyika, Biharamulo, XI 1964, leg. J. Scheven (ZSM, GU 2013-001); (**10**) female, allotype of *E. aphrasta* Tams, 1936, Angola, Benguela Plateau (NHML); (**11**) female, Kenya, Kibwezi (MWM); (**12**) male, Südafrica, Limpopo Prov., 6.5 km NNW Gramadoela, 425 m, Mopane Buschland, Phalaborwa TF+NF (SA 06), S23°53,492' E031°06,834', 19.01.2007, leg. J.-P. Rudloff (MWM); (**13**) male, Obervolta, Folonzo am Fluß Comoe (ZSM); (**14**) male, Tanganyika, Biharamulo, XI 1964, leg. J. Scheven (ZSM, GU 2013-001); (**15**) female, Kenya, Kibwezi (MWM); (**16**) female, Obervolta, Folonzo am Fluß Comoe (ZSM).


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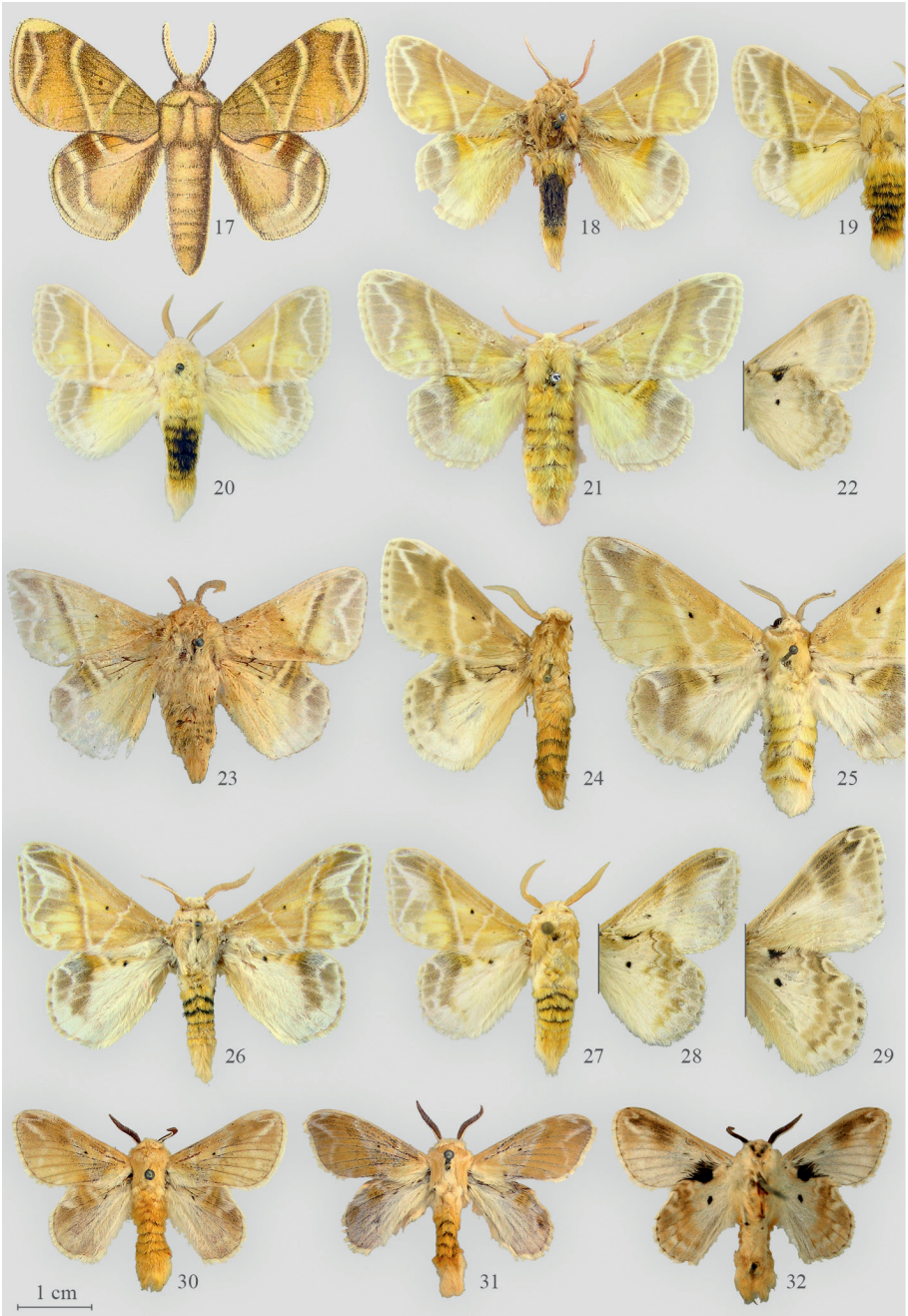
Figs 17–32: (**17**) *E. salammbo* (Vuillot, 1892), male, orig. from Aurivillius, 1927 (plate XIV, row e); (**18**) *E. salammbo* (Vuillot, 1892), male lectotype of *Lasiocampa salammbo* Vuillot, 1892, Delagoa Bay (MNHN); (**19, 22**) *E. salammbo* (Vuillot, 1892), male, S. Ethiopia, Arba Minch, Reg, Omo, Prov. Gemu, Gofa, 1350–1450 m, 6°0'N, 37°33'E, 14.4.–2.5.2001, leg. R. Beck (MWM); (**20**) *E. salammbo* (Vuillot, 1892), male, Sandoa, III-1931, leg. G. F. Overlaet (RMCA); (**21**) female, paralectotype of *Lasiocampa salammbo* Vuillot, 1892, Delagoa Bay (MNHN); (**23**) *E. koellikerii* (Dewitz, 1881), male holotype of *Lasiocampa koellikerii* Dewitz, 1881, Chinchoxo, leg. Falkenstein (MNB); (**24, 29**) *E. koellikerii* (Dewitz, 1881), male, Congo, Odzala Nat. Park, 400–500 m, 0°23' N, 14°50' E, leg. Siniaev & Murzin (MWM, GU 16.961); (**25**) *E. koellikerii* (Dewitz, 1881), female, Span. Guinea, Benitogbt., 8.VIII.[19]06, leg. Teßmann (MNB); (**26**) *E. witti* sp. nov., male holotype, Kenya süd, Sraße Nairobi-Mombasa, Voi, Tsavo National Parc, Salaga Lodge, 500 m, 07.–08.4.2009, leg. A. Puchner (MWM, GU 17.475); (**27–28**) *E. witti* nov.sp., male, Kenya, South Coast, 0 m, Marenche Forest, August/Sept. 2002, Lf., leg. Dr. Politzar (MWM); (**30, 32**) *E. nemesida* nov.sp., male holotype, Cameroon (MNB, GU 2012-001); (**31**) *E. nemesida* nov.sp., male paratype, Cameroon (MNB, GU 2012-002).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Figs 33–47: (**33**) *E. decora* (Fawcett, 1915), male, Tanzanie: Tanga Region, savanne près des Mts Pare Sud., 475 m, 04°40.128' S, 38°05.872 E, 24-X-2004 (Ph. Darge) (ZSM, colln Darge); (**34, 38**) *E. decora* (Fawcett, 1915), male, Somalia m., Caanole Fluß, 17.4.88, leg. Dr. Politzar (EMEM); (**35, 39**) *E.* sp., male, Tansania, Mpanda, Sibwesa, 18.1.1963. leg. J. Kielland (ZSM, GU 2013-002); (**36–37**) *E. decora* (Fawcett, 1915), female, holotype of *Ceratopacha decora* Fawcett, 1915, Kedai, nach 18/12, B.E.A. (NHML); (**40**) *E. magna* (Aurivillius, 1909), female holotype, Sierra Leona [sic!] (MNB); (**41**) *E. magna* (Aurivillius, 1909), male holotype of *Ceratopacha minor* Gaede, 1915, Neu-Kamerun, Bate, III.1913, Houy S.G. (MNB); (**42**) *E. magna* (Aurivillius, 1909), male, Kenya, Kibwezi, 700 m, 15–31.12.2000, leg. Dr Politzar (MWM, GU 9539); (**43–44**) *E. magna* (Aurivillius, 1909), male, Obervolta, Folonzo am Fluß, Comoe, 10.–14.6.86, leg. Dr. Politzar (ZSM); (**45–46**) *E. magna* (Aurivillius, 1909), male, Kenya, Kibwezi, 8.12.91, leg. Dr. Politzar (ZSM; GU LAS-10-082); (**47**) *E. magna* (Aurivillius, 1909), female, Insel Ukerewe (ZFMK).


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Figs 48–53. Male genitalia: (**48**) *Pseudometa* sp. (GU 33, NHML); (**49–50**) *E. gemmata* (Distant, 1889), Kenya, Kibwezi 700 m, 15.–28.5.2001, leg. Dr. Politzar (ZSM, GU LAS-10-078, LAS-10-081); (**51**) *E. gemmata* (Distant, 1889), Obervolta, Folonzo am Fluß Camoe, 13.9.85, leg. Dr. Politzar (GU LAS-10-076, ZSM); (**52**) *E. gemmata* (Distant, 1889), Tanganyika, Biharamulo, XI 1964, leg. J. Scheven (ZSM, GU 2013-001); (**53**) *E. gemmata* (Distant, 1889), Südafrica, Limpopo Prov., 6.5 km NNW Gramadoela, 425 m, Mopane Buschland, Phalaborwa TF+NF (SA 06), S23°53,492' E031°06,834', 19.01.2007, leg. J.-P. Rudloff (MWM, GU 16.963).

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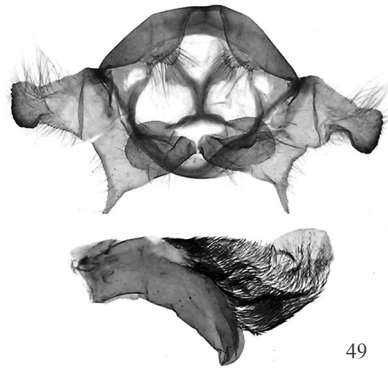

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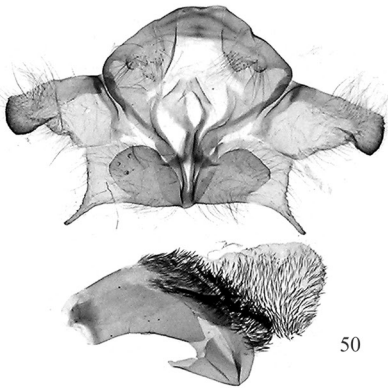

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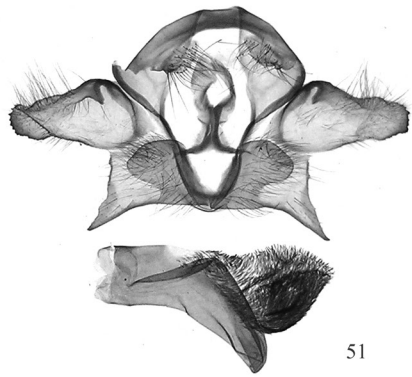

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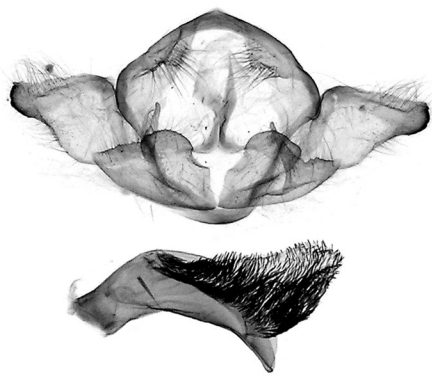

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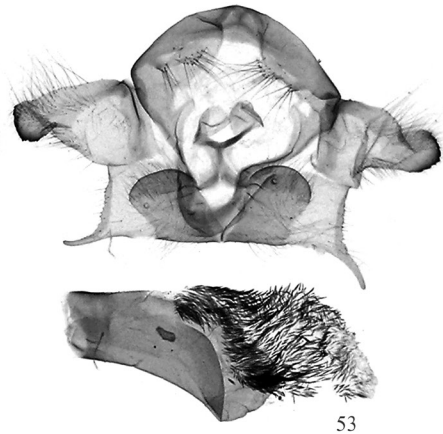

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Figs 54–59. Male genitalia: (**54**) *E. salammbo* (Vuillot, 1892), lectotype of *Lasiocampa salammbo* Vuillot, 1892, Delagoa Bay, H. Deyrolle, 1891 (MNHN, GU 2011-003); (**55**) *E. salammbo* (Vuillot, 1892), S. Ethiopia, Arba Minch, Reg., Omo, Prov. Gemu, Gofa, 1350–1450 m, 6°0'N 37°33'E, 14.IV.–2.V.2001, leg. R. Beck (MWM, GU 16.960); (**56, 57**) *E. koellikerii* (Dewitz, 1881), Congo, Odzala Nat. Park, 400–500 m, 0°23' N, 14°50' E, leg. Siniaev & Murzin (MWM, GU 16.961, 9530); (**58**) *E. witti* nov.sp., holotype, Kenya süd, Straße Nairobi-Mombasa, Voi, Tsavo National Parc, Salaga Lodge, 500 m, 07.–08.4.2009, leg. A. Puchner (MWM, GU 17.475); (**59**) *E. witti* nov.sp., paratype, Kenya, South Coast, 0 m, Marenche Forest, Oktober 1999, Lf., leg. Dr. Politzar (MWM, GU 9537).

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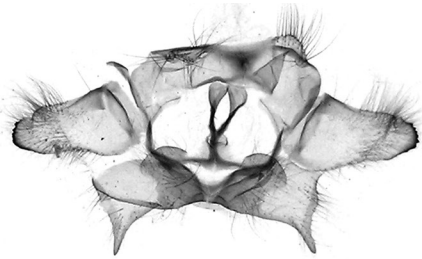

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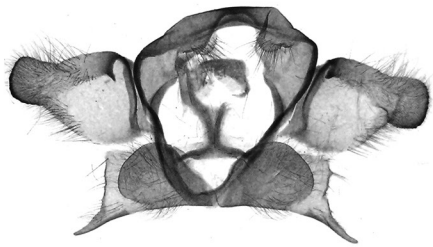

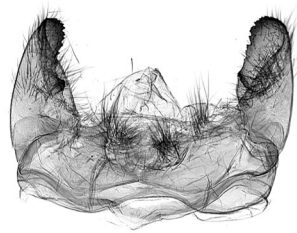

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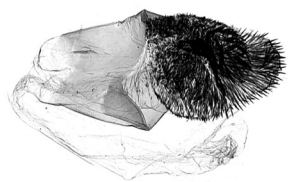

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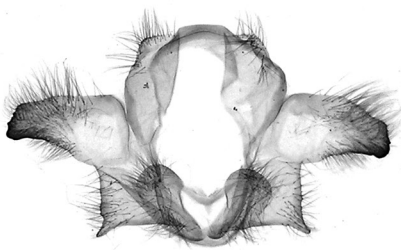

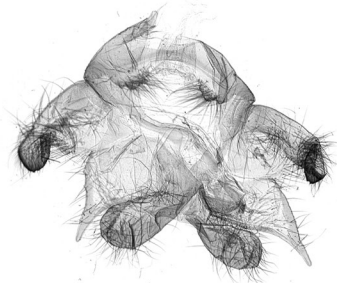

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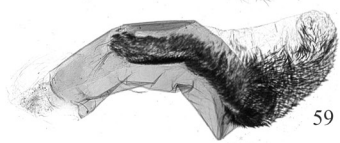

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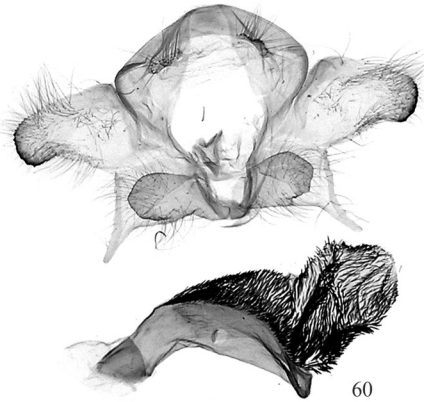
Figs 60–65. Male genitalia: (**60, 61**) *E. nemesida* nov.sp., holotype and paratype, Cameroon (MNB, GU 2011-001, 2011-002); (**62**) *E. decora* (Fawcett, 1915), Tanzanie: Tanga Region, savanne près des Mts Pare Sud., 475 m, 04°40.128' S, 38°05.872 E, 24-X-2004 (Ph. Darge) (MWM, GU 16.962); (**63**) *E. magna* (Aurivillius, 1909), N-Nigeria, Kaduna, 14.9.71, leg. Dr. Politzar (ZSM, GU LAS-10-089); (**64**) *E. magna* (Aurivillius, 1909), Kenya, Kibwezi, 8.12.2000, leg. Dr. Politzar (ZSM, LAS-10-082); (**65**) *E.* sp., Tansania, Mpanda, Sibwesa, 18.1.1963. leg. J. Kielland (ZSM, GU 2013-002).



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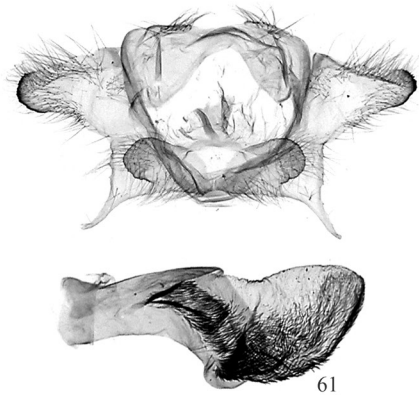

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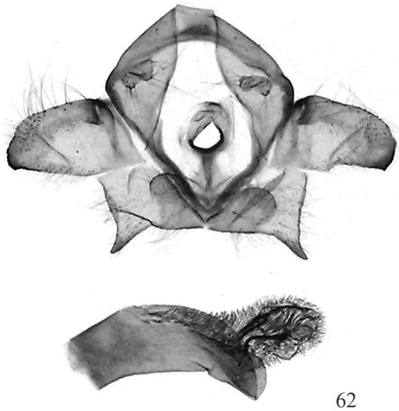

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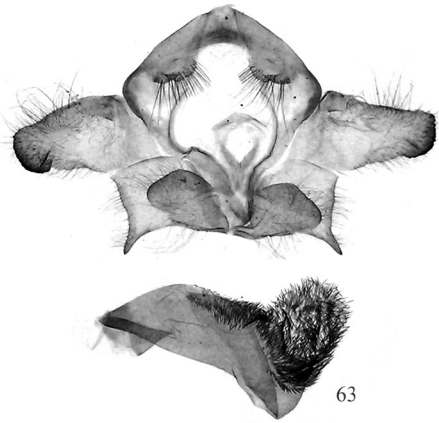

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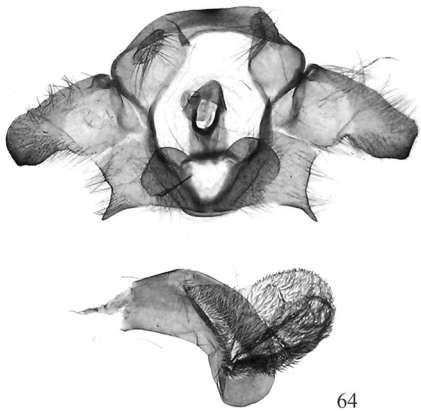

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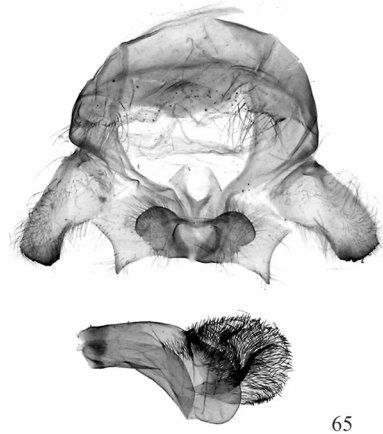

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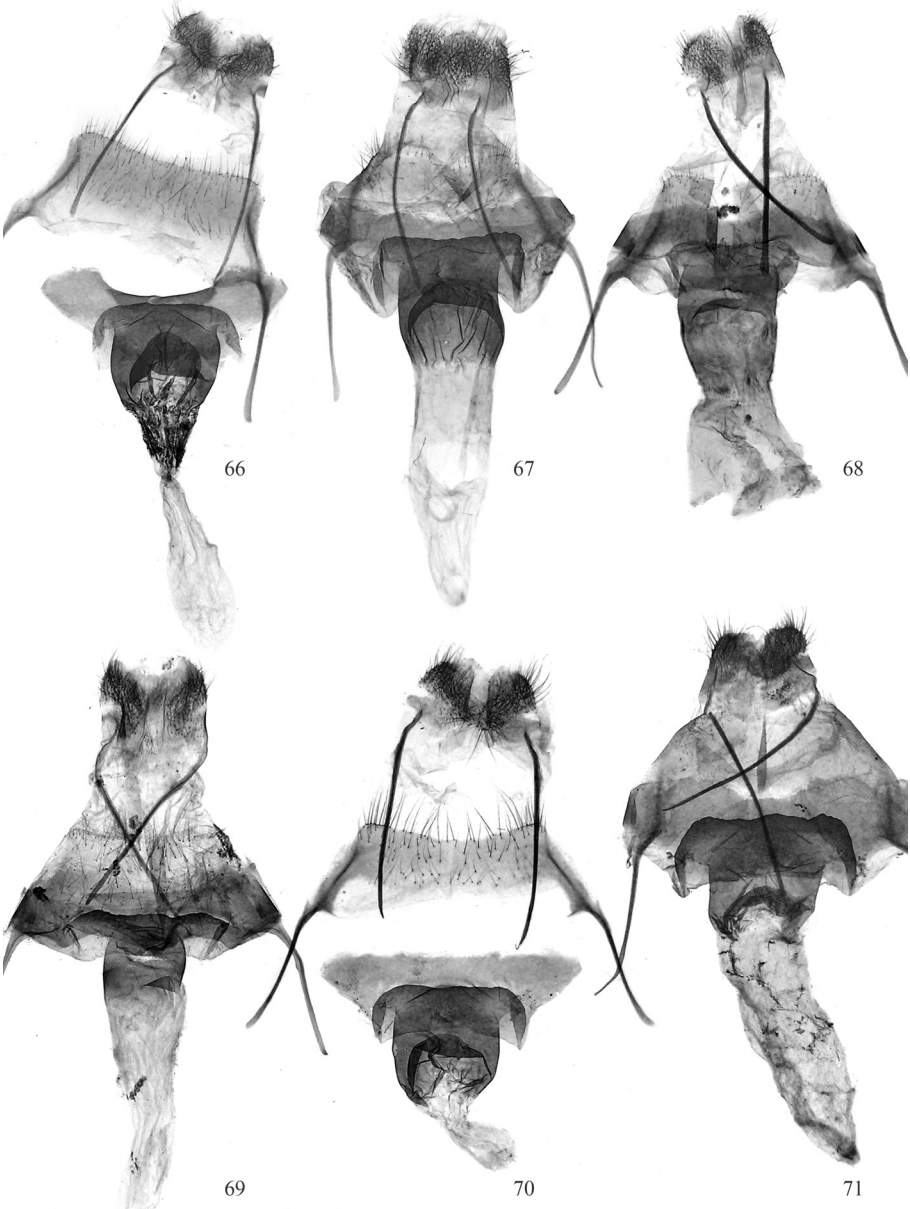
Figs 66–71. Female genitalia: (**66**) *E. gemmata* (Distant, 1897), Obervolta, Bobo Dioulasso, 20.10.81, leg. Dr. Politzar (ZSM, GU LAS-10-075); (**67**) *E. gemmata* (Distant, 1897), Tanzanie: Rukwa Region, Rukwa Escarpment, 1092 m, 07°05.913'S., 031°, 08.4844'E., 01-II-2008, (Ph. Darge) (ZSM, coll. Ph. Darge, GU LAS-10-079); (**68**) *E. salammbo* (Vuillot, 1892), Tanzanie: Iringa Region, Ruaha National Park, Tandala Camp, 910 m, 07°46.212'S., 035°00.319'E., 30-III-2007 (Ph. Darge) (ZSM, coll. Darge, GU LAS-10-077); (**69**) *E. decora* (Fawcett, 1915), Tanzania: Namanyere, 1290 m, 16.11.2005, local collector (ZSM, coll. Darge, GU LAS-11-042); (**70**) *E. magna* (Aurivillius, 1909), Obervolta, Bobo Dioulasso, 12.9.81, leg. Dr. Politzar (ZSM, GU LAS-10-091); (**71**) *E. magna* (Aurivillius, 1909), Kenya, Chulu Hills, 29.12.92, leg. Dr. Politzar (ZSM, GU LAS-10-092).



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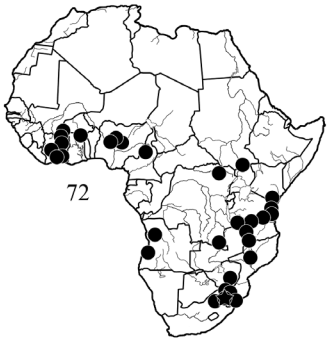
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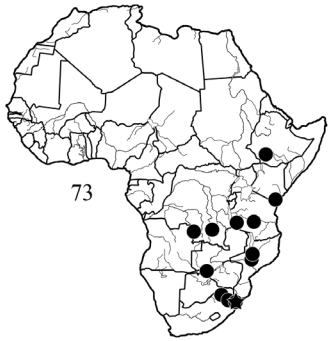
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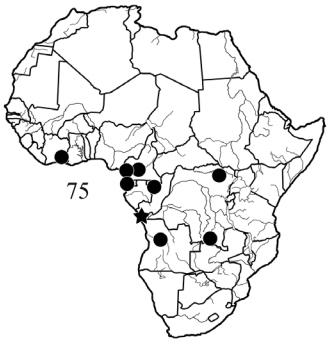
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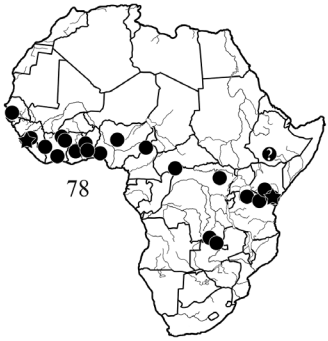
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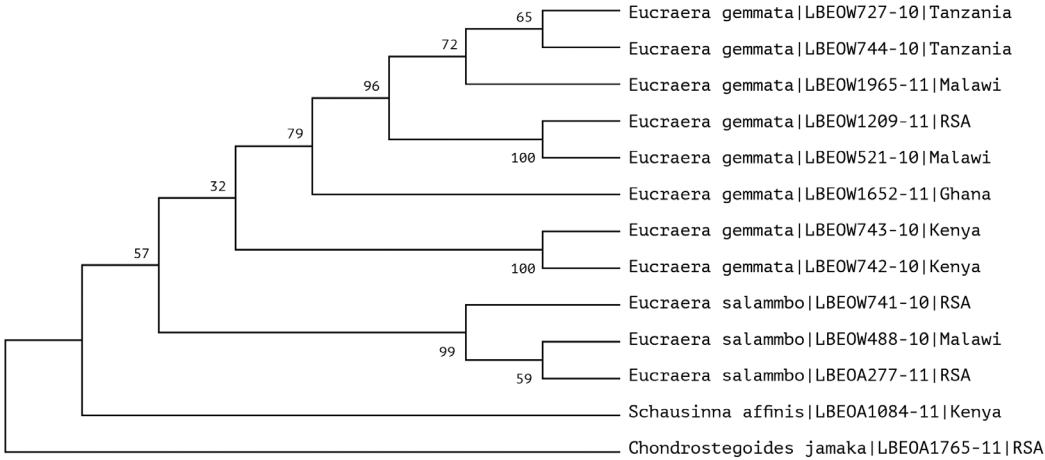
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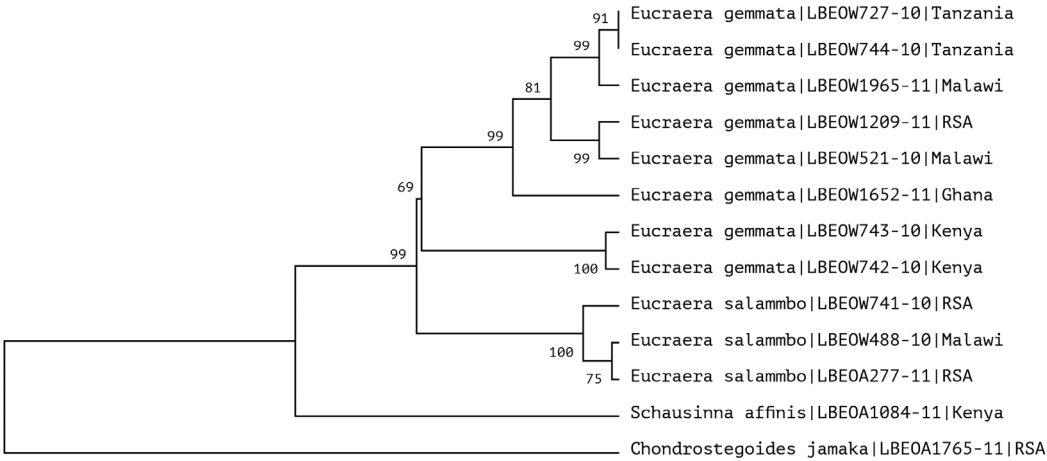
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