

## **Revisionary checklist of the southern African Osminiini (Lepidoptera: Sesiidae)**

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# Revisionary checklist of the southern African Osminiini (Lepidoptera: Sesiidae)

DANIEL BARTSCH

## Abstract

A revisionary checklist of the southern African clearwing moths of the tribe Osminiini is presented. Redescriptions of the genera and species from the region are given wherever necessary. The two genera, *Erismatica* Meyrick, 1933 and *Pseudomelittia* Le Cerf, 1917, are placed in Osminiini for the first time. One new genus, *Halictina* **n. gen.**, as well as eight new species, *Cabomina ruthmuelleri* **n. sp.**, *C. flavivertex* **n. sp.**, *Aenigmata albiapex* **n. sp.**, *Noctusphesia kgalagadia* **n. sp.**, *N. rubra* **n. sp.**, *Homogyna nama* **n. sp.**, *H. dukei* **n. sp.**, and *H. xanthomelaena* **n. sp.** are described. The following new combinations are introduced: *Cabomina chalypsa* (Hampson, 1919) **n. comb.**; *C. hilariformis* (Walker, 1856) **n. comb.**; *C. leucopleura* (Hampson, 1919) **n. comb.**; *C. tirsia* (Druce, 1899) **n. comb.**; *Erismatica endopyra* (Hampson, 1910) **n. comb.**; *Halictina andraenipennis* (Walker, 1856) **n. comb.**; *Synanthedon elymais* (Druce, 1899) **n. comb.**; *S. xanthopasta* (Hampson, 1919) **n. comb.**; *S. tapeina* Hampson, 1919 **n. comb.**; *S. ochracea* (Walker, 1864) **n. comb.** and *S. cingulata* (Gaede, 1929) **n. comb.** Lectotypes of *Chamanthodon heliostoma* Meyrick, 1926 and *Paranthrene sanguipennis* Meyrick, 1926 are designated. *Erismatica erythropis* Meyrick, 1933 **n. syn.** is considered a new subjective junior synonym of *Erismatica endopyra* (Hampson, 1910). Bionomical data for some Afrotropical Osminiini species are given, which are the first observations on the life history of a member of the tribe.

**Key words:** Descriptive taxonomy, new species, new genus, systematics, synonymy, bionomy.

## Zusammenfassung

Eine revidierte Checkliste der Osminiini des südlichen Africa wird vorgestellt. Wo es notwendig erschien, werden Wiederbeschreibungen der aus der Region bekannten Gattungen und Arten gegeben. Erstmals zu den Osminiini gestellt werden die beiden Gattungen *Erismatica* Meyrick, 1933 und *Pseudomelittia* Le Cerf, 1917. Eine neue Gattung, *Halictina* **n. gen.**, sowie acht neue Arten, *Cabomina ruthmuelleri* **n. sp.**, *C. flavivertex* **n. sp.**, *Aenigmata albiapex* **n. sp.**, *Noctusphesia kgalagadia* **n. sp.**, *N. rubra* **n. sp.**, *Homogyna nama* **n. sp.**, *H. dukei* **n. sp.** und *H. xanthomelaena* **n. sp.** werden beschrieben. Die folgenden neuen Kombinationen werden vorgeschlagen: *Cabomina chalypsa* (Hampson, 1919) **n. comb.**; *C. hilariformis* (Walker, 1856) **n. comb.**; *C. leucopleura* (Hampson, 1919) **n. comb.**; *C. tirsia* (Druce, 1899) **n. comb.**; *Erismatica endopyra* (Hampson, 1910) **n. comb.**; *Halictina andraenipennis* (Walker, 1856) **n. comb.**; *Synanthedon elymais* (Druce, 1899) **n. comb.**; *S. xanthopasta* (Hampson, 1919) **n. comb.**; *S. tapeina* Hampson, 1919 **n. comb.**; *S. ochracea* (Walker, 1864) **n. comb.** und *S. cingulata* (Gaede, 1929) **n. comb.** *Erismatica erythropis* Meyrick, 1933 **n. syn.** wird als subjektives jüngeres Synonym zu *Erismatica endopyra* (Hampson, 1910) angesehen. Lectotypen von *Chamanthodon heliostoma* Meyrick, 1926 und *Paranthrene sanguipennis* Meyrick, 1926 werden festgelegt. Es werden bionomische Angaben zu einigen afrikanischen Arten der Osminiini mitgeteilt, diese sind zugleich die ersten Beobachtungen zur Lebensweise eines Angehörigen der Tribus.

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## 1 Introduction

The Osminiini are a small tribe of clearwing moths erected by DUCKWORTH & EICHLIN (1977) to accommodate the North American genera *Osmia* Le Cerf, 1917 and *Calasesia* Beutenmüller, 1899. Subsequently, several old world genera were placed in Osminiini, which currently comprise 16 genera with nearly 100 species. The highest diversity is recognized in the Oriental and Afrotropical regions (PÜHRINGER & KALLIES 2004) with a distinct hot-spot in southern Africa, from where 25 species in seven genera are presently known. Nevertheless, the knowledge of the Afrotropical Osminiini is still fragmentary and results from a few, relatively current articles. GORBUNOV & ARITA (1998a) revised *Homogyna* Le Cerf, 1911 and *Aenigmia* Le Cerf, 1912 comprising six or four species, respectively, and together with the monotypic genus *Pyranthrene* Hampson, 1919 placed them in Osminiini. The same authors (1998b) revised *Chamanthodon* Le Cerf, 1916 from the Oriental Region in Osminiini and exclude all assigned African species as “incertae sedis”. KALLIES (2004) described *Osmia namibiana* from Namibia. PÜHRINGER & KALLIES (2004) transferred the Madagascan genus *Microsynanthodon* Viette, 1955 with three species to Osminiini. FREINA published a series of papers on the Sesiidae fauna of Southern and Eastern Africa, several of them concern Osminiini. First, he described the new genus *Cabomina*, originally with three species, two of which were new to science (FREINA 2008). This was followed by the descriptions of a fourth species of *Cabomina*, a second species of *Echidnathia* Hampson, 1919 together with placement of this genus in Osminiini (FREINA 2011a), and lastly a new genus and species, *Noctusphesia puchneri*, from Tanzania (FREINA 2011b).

During the study of Sesiidae from southern Africa a further eight undescribed species were uncovered and six so far misplaced species were assigned to Osminiini. One species, described as *Melittia andraenipennis* by WALKER (1856) and later placed in *Pseudomelittia* by HAMPSON (1919), was found to belong to a very distinct new genus, *Halictina* n. gen., within the Osminiini.

In this article I provide a revised checklist and a first comprehensive overview of the current 25 species of Osminiini, including the descriptions of new taxa, from southern Africa (Namibia, South Africa, Botswana, Zimbabwe and Mozambique south of Zambezi).

## Acknowledgements

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Sesiidae specimens revised in this study, DOUGLAS KROON who kindly showed me the life history of *Halictina andraenipennis*, JOSEF J. DE FREINA, Munich, and HANS-GEORG RIEFENSTAHL, Hamburg, for discussions and the loan of specimens, and AXEL KALLIES, Melbourne, and JONATHAN BALL, Cape Town, for discussions and linguistic help. I also thank ZDENĚK LAŠTŮVKA, Brno, and FRANZ PÜHRINGER, St. Konrad, for their reviews of the manuscript and helpful comments and suggestions.

## 2 Material and methods

Specimens were borrowed from and/or are deposited in the collections of the following institutes (acronyms used throughout the text): The Natural History Museum, London (BMNH), University Museum, Oxford (OXUM), Museum für Naturkunde an der Humboldt-Universität, Berlin (MNH), National Museum of Namibia, Windhoek (NMNW), Staatliches Museum für Naturkunde, Stuttgart (SMNS), Zoologische Staatssammlung, München (ZSM), Ditsong National Museum of Natural History (former Transvaal Museum), Pretoria (TMSA), South African National Collection of Insects, Pretoria, (SANC), and the collections of THOMAS WITT, Munich (CMWM), DOUGLAS M. KROON, Sasolburg (CDK), STEFFEN SCHELLHORN, Jena (CSS) and the author (CDB). All type specimens were photographically documented.

Several males were collected using various synthetic pheromones from PRI, Plant Research International, Wageningen, the Netherlands. Some specimens of both sexes were netted on flowers. Genitalia were dissected in the usual way: maceration of the abdomen in 10 % KOH, removing of the scales and cleaning in 70 % ethanol, those of females were stained with Chlorazol Black. They were stored in a mixture of 70 % ethanol and 30 % glycerine or embedded in Euparal on a hollow slide, males with opened valvae. Holo- and lectotypes have not been dissected. Morphological terminology follows ŠPATENKA et al. (1999), and the terminology of wing venation follows HEPPNER & DUCKWORTH (1981).

## 3 Systematics

Within the Afrotropical Osminiini two main groups of genera can be distinguished, both of which have the forewing veins  $R_1$ – $R_3$  well separated from each other and  $R_4+R_5$  stalked. Osminiini “sensu stricto” are characterized by vein  $M_2$  in the hindwing arising from or somewhat caudal to the centre of the crossvein and by veins  $M_3$  and  $CuA_1$  with a common stalk or rarely arising from a common point from cell tornus (see EICHLIN & DUCKWORTH 1988: 59, 61). Males of this group have simple setae covering the uncus and the valva, the gnathos is well developed, the tegumen and the uncus are rather flexibly linked together and the tuba analis with the subscaphium is exceedingly long (as in Fig. 61). The females of this group have the antrum short and well sclerotized and the ductus bursae long, gradually enlarged (as in Fig. 76). The following genera are considered belonging to this group: *Osmia*, *Aenigmia*, *Cabomina*, *Microsynanthodon*.

The second group is considerably different. It has the hindwing with the origin of vein  $M_2$  from the costal half of the crossvein (somewhat similar to Sesiini and Cissuvorini) and the origin of vein  $CuA_1$  more or less proximal from cell tornus (similar to Melittiini and Paranthrenini) (see LE CERF 1911: 303). The genitalia of the second group are frequently strongly derived. The males have the setae of uncus and/or valva often specialized, thorn-like, bi- or multifurcate, the gnathos sometimes reduced, the tegumen and the uncus more or less seamlessly fused and the tuba analis relatively short (*Erismatica*, *Pseudomelittia*, *Halictina*, *Homogyna* and *Echidgnathia*, Figs. 68–75). The females often have a large, sometimes sclerotized antrum (*Homogyna*, *Echidgnathia*) (as in Fig. 79), and in *Homogyna* the papillae anales are small and strongly pointed (as in Fig. 80). Members of this group are: *Noctusphecia*, *Pyranthrene*, *Erismatica*, *Pseudomelittia*, *Halictina*, *Homogyna*, and *Echidgnathia*.

The lack of ventral ciliae of the male antenna was considered the most important synapomorphy of the Osmiiniini (DUCKWORTH & EICHLIN 1977, EICHLIN & DUCKWORTH 1988, ŠPATENKA et al. 1999). However, males of almost all species that have been investigated during the course of this study and also those of the Palaearctic species *Sazonia fenusaeformis* (Herrich-Schäffer, 1852) have the antennae densely covered with rather short to medium-long, appressed and therefore barely visible ciliae (Figs. 85, 89). In rare cases the ciliae are markedly erect, e.g. in most species of *Cabomina* and *Pseudomelittia berlandi* Le Cerf, 1917 (Figs. 84, 88). Antennal ciliae are often restricted to the ventral side, but in some genera, such as *Aenigmata*, *Echidgnathia* and *Pseudomelittia*, are present on the entire surface. *Halictina andraenipennis* (Walker, 1856) has very scarce and short ciliae located on the ventral side of the clubbed antennal tip (Figs. 86, 87). The length of ciliae differs among species from about 0.02 mm in *H. andraenipennis*, 0.05–0.06 mm in *S. fenusaeformis* and *Echidgnathia* sp., 0.07–0.09 mm in *Pseudomelittia berlandi*, and 0.09–0.13 mm in *Cabomina* species. For comparison, the ciliae measure 0.06–0.09 mm in *Sesia bembeciformis* (Hübner, 1806) (Sesiini) and 0.09–0.13 mm in *Glossosphecia sherpa* (Bartsch, 2003) (Cissuvorini). Male antennae with appressed ciliae covering the entire surface are also known from *Anaudia felderi* Wallengren, 1863, *Microsesia nana* Bartsch, 2014 and *Coccophila pythes* (Druce, 1899), but considering structures of the venation and the male genitalia, the affiliation of these species with Sesiini is evident (BARTSCH 2013, 2015). A multiple convergent development of these antennal types within the Sesiinae must be assumed.

Other diagnostic characters of the Osmiiniini that were mentioned by DUCKWORTH & EICHLIN (1977) vary widely when more species are taken into account. This includes the very long third segment of the labial palpus (usually

half as long as second palpomere in African species), the strongly clavate antenna (long and narrow, only slightly clavate in *Aenigmata* and *Cabomina*, clubbed in *H. andraenipennis*), the somewhat degenerated hindwing anal veins (not reduced in *Pseudomelittia*). The same applies to characters of the genitalia of both sexes such as the absence of specialized setae of the valva and/or the uncus (setae of valva completely or partially bi- or multifurcate in *Homogyna*, *Pseudomelittia* and *Erismatica* Meyrick, 1933; setae of uncus thorn-like in *Echidgnathia vitrifasciata*), the presence of a gnathos in male (absent in several *Homogyna* species and in *Echidgnathia*) or the presence of a signum of the corpus bursae in female (absent in *Cabomina*, *Erismatica* and most *Homogyna* species).

The genitalic structure of Osmiiniini generally resembles closely that of Sesiini. This is with the exception of the extremely modified shape in *Homogyna* and *Echidgnathia*. For *Homogyna*, this was already noted by GORBUNOV & ARITA (1998b), who discuss an alternative placement of this genus in a separate tribe or the upgrading of Osmiiniini to a separate subfamily. However, based on the many commonalities within typical members of the Osmiiniini in the structure of the antennae, the wing venation and the setae of the valve (at least in the less specialized *Homogyna* species from southern Africa), I prefer the established placement of both *Homogyna* and *Echidgnathia* in Osmiiniini. DUCKWORTH & EICHLIN (1983) believed the North American Osmiiniini, all representatives of the typical group, to be a specialized offshoot of *Sesia* (Sesiini). However, this proposed relation could equally be reversed, with Sesiini as a specialized branch of Osmiiniini, or both being considered sister groups. Despite the here mentioned inconsistencies, which may argue for collapsing of Osmiiniini and Sesiini into a single tribe, as long as a well-justified higher system of the Sesiidae is still not available, I follow the traditional classification of the family and consider Osmiiniini distinct from Sesiini.

Several Afrotropical species including such from southern Africa have previously been assigned in the Osmiiniini genus *Chamanthodon* Le Cerf, 1916 (HAMPSON 1919, VÁRI et al. 2002). In a revision of this genus, GORBUNOV & ARITA (1998b) assumed that this genus is geographically restricted to south-east Asia and excluded all species from other world regions, including those of the Afrotropical region, and listed them as “incertae sedis”. In the present study, the relationship of these species from the area of investigation and their placement within Osmiiniini is clarified. The remaining four species were found to belong to *Synanthedon* and thus, are here provisionally transferred to *Synanthedon* Hübner, 1819. This includes the following species: *Synanthedon elymais* (Druce, 1899) **n. comb.**; *S. xanthopasta* (Hampson, 1919) **n. comb.**; *S. tapeina* Hampson, 1919 **n. comb.** and *S. ochracea* (Walker, 1864) **n. comb.**



#### 4 Checklist of the Osmiini of southern Africa

Type species of genera are marked with an asterisk (\*).

- Cabomina* Freina, 2008  
*Cabomina hilariformis* (Walker, 1856) **n. comb.** (*Aegeria*)  
*Cabomina monicae* Freina, 2008\*  
*Cabomina tsomoana* Freina, 2011  
*Cabomina dracomontana* Freina, 2008  
*Cabomina ruthmuelleriae* **n. sp.**  
*Cabomina heliostoma* (Meyrick 1926) (*Chamanthodon*)  
*Cabomina chalypsa* (Hampson, 1919) **n. comb.** (*Chamanthodon*)  
*Cabomina flavivertex* **n. sp.**  
*Cabomina leucopleura* (Hampson, 1919) **n. comb.** (*Chamanthodon*)  
*Cabomina tiresa* (Druce, 1899) **n. comb.** (*Aegeria*)
- Osminia* Le Cerf, 1917 [= *Signaphora* Engelhardt, 1946]  
*Osminia namibiana* Kallies, 2004
- Aenigmia* Le Cerf, 1912  
*Aenigmia crithéis* (Druce, 1899)  
*Aenigmia albiapex* **n. sp.**
- Noctusphesia* Freina, 2011  
*Noctusphesia kgalagadia* **n. sp.**  
*Noctusphesia rubra* **n. sp.**
- Erismatica* Meyrick, 1933  
*Erismatica endopyra* (Hampson, 1910) **n. comb.** (*Tinthia*)  
 [= *Erismatica erythropis* Meyrick, 1933\* **n. syn.**]
- Halictina* **n. gen.**  
*Halictina andraenipennis* (Walker, 1856)\* **n. comb.** (*Melittia*)
- Homogyna* Le Cerf, 1911  
*Homogyna nama* **n. sp.**  
*Homogyna ignivittata* Hampson, 1919  
*Homogyna sanguipennis* (Meyrick, 1926) (*Paranthrene*)  
*Homogyna xanthophora* (Hampson, 1910) (*Tinthia*)  
*Homogyna dukei* **n. sp.**  
*Homogyna xanthomelaena* **n. sp.**
- Echidgnathia* Hampson, 1919  
*Echidgnathia khomasana* Freina, 2011  
*Echidgnathia vitrifasciata* (Hampson, 1910)\* (*Tinthia*)

#### 5 Taxonomic account

##### 5.1 *Cabomina* Freina, 2008

Type species: *Cabomina monicae* Freina, 2008, by original designation.

FREINA (2008) described the genus *Cabomina* on the basis of a homogenous series of 35 males of the type species, *C. monicae*, a single male of *C. dracomontana* and two type specimens of *C. heliostoma* (Meyrick 1926). A fourth species, *C. tsomoana*, represented by four specimens, was added to the genus later (FREINA 2011a). FREINA (2008) also alludes to three species previously assigned to *Chamanthodon*, which might also belong to *Cabomina*. Two of them, *C. chalypsa* (Hampson, 1919) and *C. tiresa* (Druce, 1899), are here formally transferred to *Cabomina*.

Two further species, *C. hilariformis* (Walker, 1856) and *C. leucopleura* (Hampson, 1919), which have been assigned to *Chamanthodon* are also moved to *Cabomina*.

Species differentiation within *Cabomina* is difficult. There are only minor consistent differences and the genitalia are very similar between species. Females of most species are still unknown. Richly yellow marked forms are found in *C. chalypsa* and *C. flavivertex*, but may also be present in other species.

##### Diagnosis

*Cabomina* can be defined as follows: (1) body predominantly glossy black, rarely yellowish marked, antenna often with white subapical spot, posterior margin of tergite 4 fine white or yellow; (2) haustellum (= proboscis) weakly sclerotized or reduced; (3) male antenna more or less distinctly ciliate; (4) uncus ventro-apically densely covered with setae; (5) valva elongate, distal half dorsally abruptly broadened, proximally with longitudinal medial crista; (6) phallus long and narrow with well developed coecum penis, vesica without distinct sclerotization; (7) female genitalia with short, sclerotized antrum, long and narrow ductus bursae, bursa copulatrix without signum.

The male genitalia were characterized and figured by FREINA (2008, 2011a). They are homogenous within the genus, with only minor interspecific differences. Tegumen and uncus long and slender, flexibly linked together; gnathos long and slender, distally ventrad curved, strongly pointed; terminal third of uncus ventro-laterally densely covered with strong, simple setae; tuba analis extremely long with well sclerotized subscaphium; valva slender, dorso-distally abruptly broadened, distally more or less narrow and rounded, ventrally and distally densely covered with basad pointing, long, simple setae; vinculum and saccus short; phallus extremely long and slender; vesica without sclerotized structures.

The Madagascan genus *Microsynanthodon* displays a similar, but more elongate shape of the valva. It differs from *Cabomina* by the delicate and slender body, the completely reduced haustellum and the scarce setae of the uncus. The genus *Aenigmia* from eastern Africa is also superficially similar and closely related. It differs by the reduced haustellum; the much longer and slender uncus, which is sparsely covered with long simple setae, the typically ovoid valva with simple, basad pointing setae, and the longer saccus.

The structure of the female genitalia is here described on the basis of *Cabomina chalypsa* (Fig. 76) and *C. leucopleura* (Fig. 77). Papillae anales and segment 8 short; anterior and posterior pair of apophyses short, of equal length; ostium narrow, membranous, located somewhat caudally of sternite 7; antrum short, well sclerotized, slightly tapered; ductus bursae long and simple, gradually enlarged to form an oval bursa copulatrix, the latter without signum. The

structure of the female genitalia of *Osminia* is very similar, but differs by the well-developed signum of the bursa copulatrix. Females of *Aenigmina* are unknown.

### Distribution

The genus is only known from southern Africa, Swaziland and southern Mozambique, but may also occur in Botswana and Zimbabwe. Nothing is known about the life history.

### Key to the species of *Cabomina*

- 1 Forewing discal spot with small yellow spot, vein interspaces of apical area with a narrow yellow scale line; males with well developed transparent areas (Figs. 1–3)..... *C. hilariformis*
- Forewing opaque, rarely with indistinct external transparent area, discal spot without yellow spot (Figs. 4–28)..... 2
- 2 Hindwing almost hyaline, distal margin narrow (Figs. 4–10)..... 3
- Hindwing widely opaque or distal margin broad black (Figs. 11–28)..... 4
- 3 Forewing black or blackish grey, discal spot indistinct (Figs. 4–6)..... *C. monicae*
- Forewing pale grey to dark brownish-grey, discal spot distinctly darker (Figs. 7–10)..... *C. tsomoana*
- 4 Fore coxa black (as in Fig. 14)..... 5
- Fore coxa (partially) orange or white (as in Fig. 21)..... 6
- 5 Fore leg black throughout, distal margin of hindwing reaching discal spot (Figs. 11–12)..... *C. dracomontana*
- Fore leg with femur and tibia ventrally orange-yellow, tarsus white, distal margin of hindwing clearly separated from discal spot (Figs. 13–15)..... *C. ruthmuelleriae* n. sp.
- 6 Abdomen dorsally without marking, or with yellow posterior margin of tergite 4 (Figs. 16–24)..... 7
- Abdomen with white markings on tergites 4 and 6 (7 in male) (Figs. 25–28)..... 9
- 7 Legs and abdominal tergite 4 with yellow cingulation, hindwing hyaline with broad black distal margin, hindwing discal spot small (Fig. 16)..... *C. heliostoma*
- Legs except for fore coxa pure black, or legs predominantly orange-yellow; abdomen black, laterally narrow orange (Figs. 17–24)..... 8
- 8 Vertex black, hindwing proximally hyaline, distally semi-transparent, discal spot always clearly visible (Figs. 18–22)..... *C. chalypsa*
- Vertex orange; hindwing nearly completely opaque, except for a small area near wing base; black form with indistinct discal spot (Figs. 23–24)..... *C. flavivertex* n. sp.
- 9 Abdominal tergites 4 and 7 with white lateral spots (Figs. 25–27)..... *C. leucopleura*
- Abdominal tergites 4 and 7 with continuous white posterior margins..... *C. tiresa*

### *Cabomina hilariformis* (Walker, 1856) n. comb. (Figs. 1–3, 61)

*Aegeria hilariformis* WALKER, 1856: 57.

*Sesia hilariformis*: BOISDUVAL 1875: 454.

*Chamanthodon hilariformis*: HAMPSON 1919: 66; DALLA TORRE & STRAND 1925: 73; GAEDE 1929: 523; HEPPNER & DUCKWORTH 1981: 41.

*Chamanthodon hilariformis* (incertae sedis): GORBUNOV & ARITA 1998b: 19; PÜHRINGER & KALLIES 2004: 13.

Type material examined: Syntypes 1 ♂, 1 ♀, Port Natal [South Africa, Kwazulu-Natal, Durban] (OXUM).

Other material examined: 1 ♂ (Fig. 1), Port Natal (BMNH); 1 ♀ (Fig. 3), Natal, Durban (BMNH); 1 ♂ (Fig. 2), Natal, Durban, Umlalo, 27 Sep 1919, A. L. BEWIS (TMSA); 1 ♂, East London, 20 Jan 1922 (TMSA gen.-prep. 3824, Fig. 61).

In the original description WALKER refers to two specimens, a male and a female. Both are housed in the OXUM, images are available on the internet at <http://oxford.university.museum/collect/index.htm>. Both specimens are in poor condition. Missing body parts are the right antenna, some legs and the abdomen in the male; the antennae, some legs and the apex of the left forewing in the female. As I have no doubts about their conspecificity I refrain from designating a lectotype. *Cabomina hilariformis* is very distinct. Males of this species are the only representatives of the genus, which have forewings with a well developed transparent area. They are further characterized by the partly yellow discal spot and the fine yellowish lines between the veins of the apical area. Females are similar to the males, but have the forewings opaque, the white posterior margin of tergite 4 broader, and the hindwing distal margin broader and less clearly defined.

### *Cabomina monicae* Freina, 2008 (Figs. 4–6, 62)

Type material examined: Holotype ♂ (Figs. 4, 5), South Africa, Western Cape Province, vic. Swellendam, Bontebok NP, 300 m, 30 Mar–13 Apr 1997, leg. J. J. DE FREINA (CMWM, later ZSM).

Other material examined: 2 ♂♂, same data as holotype (FREINA gen.-prep. 2002/5, fec. KALLIES; 2002/4 fec. FREINA, Fig. 62) (CMWM, later ZSM); 2 ♂♂ (Fig. 6), South Africa, East London, Beacon Bay, 6 Apr 1982, leg. N. J. DUKE (TMSA); 4 ♂♂, same locality, 16 Apr 1983; 1 ♂, East London, Buffalo Pass, 7 Dec 1983, leg. N. J. DUKE, coll. DUKE (TMSA).

*Cabomina monicae* is the south-western representative of the genus. It is here defined by the lack of orange-yellow markings, a fine white posterior margin of abdominal tergite 4, opaque forewings and nearly completely transparent hindwings with indistinct, small discal spot. Specimens from East London, which have not been examined by FREINA, have an indistinct narrow external transparent area on the forewings. They are here considered *C. monicae* based on the comparable size (wingspan 12–17 mm) and coloration.

*Cabomina monicae* and the following species, *C. tsomoana*, are very similar and their conspecificity cannot be ruled out. Diagnostic characters mentioned in the original description of the latter (FREINA 2011a) vary considerably

and overlap for both species. This includes the wingspan (13–19 mm in *C. monicae* and 11–15 mm in *C. tsomoana*), the similar forewing coloration (typical specimens of *C. monicae* and the darkest paratype of *C. tsomoana*) and the narrow external transparent area, which can be present in specimens of both species. Significant differences in the structures of the male genitalia could not be found (FREINA 2011a). Females of both species are unknown.

*Cabomina tsomoana* Freina, 2011  
(Figs. 7–10, 63, 84)

Type material examined: Holotype ♂ (Figs. 7, 8), Africa, Eastern Cape, Transkei, 6 km NW Tsomo, 900–1000 m, 9 Dec 2004, (CMWM, later ZSM).

Other material examined: 1 ♂ (Fig. 9), same data as holotype (CMWM, later ZSM); 6 ♂♂ (Fig. 10), South Africa, Drakensberge, vic. Clarens, Sunnyside Lodge, 28°32'10"S, 28°31'09"E, 1810 m, 21–23 Feb 2012, leg. STRÖHLE (1 ex. BARTSCH gen.-prep. 2012-16, Fig. 63) (Antenna Fig. 84) (SMNS).

*Cabomina tsomoana* is very similar to the previously discussed *C. monicae* (see there for details). The holotype is the palest specimen of the type series, maybe representing a yellowish form of *C. monicae*. Newly discovered specimens from Clarens are generally somewhat darker, but the palest of them corresponds well with the darkest of the type series.

*Cabomina dracomontana* Freina, 2008  
(Figs. 11, 12)

Type material examined: Holotype ♂ (Figs. 11, 12), South Africa, KwaZulu-Natal, S Drakensberg region, N Himeville, Vergelegen NR, 1900–2000 m, 28 Nov 1999, leg. J. J. DE FREINA (CMWM, later ZSM).

*Cabomina dracomontana* was described on the basis of a single, slightly descaled male with a wingspan of 18 mm and a body length of 8 mm. No further specimens are known. The type is predominantly black, including vertex, fore coxa and anal tuft; abdominal tergite 4 with narrow white posterior margin; labial palpus pale yellow with black terminal joint; and hindwing with very broad black, semitransparent distal margin. The coloration of the pericephalic scales is pale yellowish brown, not black as noted originally (cannot be seen in the figure). FREINA (2008) assumed a close relationship with *C. heliostoma* and lists the following differential characters, which can be confirmed here: labial palpus including terminal palpomere and pericephalic scales pale yellowish brown (orange in *C. heliostoma*); hindwing less extensively transparent, with broader discal spot and less distinctly bordered margins;

abdominal tergite 4 caudally with some white scales, legs black (posterior margin of abdominal tergite 4 and tibia and tarsus of all legs distally yellow in *C. heliostoma*). Other characters mentioned for *C. heliostoma*, such as the broader patagia and the reddish-brown forewing colour with whitish discal spot, are artificial, caused by the condition of the type specimen.

*Cabomina ruthmuelleri* n. sp.  
(Figs. 13–15, 64)

Holotype ♂ (Figs. 13, 14): Swaziland, Manzini Distr., Ngwempisi Wilderness Area, valley north Khopho lodge, 26°40'40.6"S, 31°10'41.3"E, 800 m, at pheromone, 31 Jan 2015, leg. D. BARTSCH (SMNS).

Paratypes (21): 2 ♂♂, same data as holotype (SMNS); 3 ♂♂, same locality, vic. Khopho lodge, 26°41'01.1"S, 31°10'31.2"E, 930 m, 30 Jan 2015, at pheromone, leg. D. BARTSCH (SMNS); 1 ♂, Swaziland, Hhohho Distr., Malolotja NP, Malolotja campsite, 26°08'39.0"S, 31°07'51.3"E, 1500 m, 28 Jan 2015, at pheromone, leg. D. BARTSCH (SMNS); 7 ♂♂, same locality, view point above Komati river, 26°04'54.3"S, 31°07'54.7"E, 1150–1170 m, 29 Jan 2015, leg. D. BARTSCH (SMNS); 1 ♂, South Africa, Limpopo Province, N Makopane, Farm Thabaphaswa, 1290 m, 24°03'12.09"S, 29°02'51.45"E, 25 Feb 2012, at pheromone, leg. D. BARTSCH & J. BERG (SMNS); 1 ♂, Limpopo Province, NW Louis Trichardt, Hangklip Forest Reserve, ca. 1300 m, 23°00'S, 29°53'E, 01 Mar 2014, at pheromone, leg. S. SCHELLHORN (BARTSCH gen.-prep. 2015-01, Fig. 64) (SMNS); 1 ♂, 1 ♀, same data (CSS); 2 ♂♂, same data, Hangklip Military Area, ca. 1600 m, 22°59.46'S, 29°53.02'E, 05 Mar 2014, at pheromone, leg. S. SCHELLHORN (CSS); 1 ♀ (Fig. 15), South Africa, TVL, [Limpopo Province, Legalametse] the Downs, Mar 1986 (SANC); 1 ♀, Bronkhorstspuit Distr., Renosterpoort, 17 Feb 1975, POTGIETER & SCOBLE (TMSA).

**Etymology**

This species is dedicated to RUTH MÜLLER, Pretoria, who has kindly organized several joint collecting trips and guided access to many interesting localities.

**Description**

Male. Wingspan 14–20 mm, forewing length 6–9 mm, antennal length 5.5–7.5 mm, body length 8–10 mm. – Head: Labial palpus orange, terminal palpomere with some black scales; frons black with blue gloss; vertex shiny black with narrow orange spot between antenna and ocellus and some orange scales occipitally; pericephalic scales orange; antenna black. – Thorax: Black, particularly alive with bright greenish golden gloss. Legs black; fore leg with femur ventro-distally and tibia ventrally orange-yellow, tarsus ventrally yellowish white; mid and hind tarsus ventrally grey; tarsus of all legs distally with narrow white ring. Wings black; forewing opaque throughout; hindwing hyaline, distal margin and apex broad black, somewhat translucent, discal spot narrow, extending to



M<sub>3</sub>; underside of forewing with basal half and costal margin yellow. – Abdomen: Black, alive with bright greenish golden gloss; posterior margin of abdominal tergite 4 narrow white; anal tuft medio-ventrally orange-yellow. Genitalia as described in the genus diagnosis (Fig. 64).

Female. Larger and more compact than the male. Antenna dorsally with distinct white subapical stripe; anal tuft black throughout; legs almost black, fore femur ventro-distally and fore tibia ventrally orange, tarsus of all legs distally with narrow white ring; wing underside completely black. Genitalia not examined.

#### Variation

Some minor differences are found in body size and in width and density of the scaling of the hindwing margins.

#### Diagnosis

*C. ruthmuelleriae* n.sp. is most similar to *C. dracomontana*. It differs by the orange labial palpus (yellowish brown with black tip in *C. dracomontana*), the orange-yellow marked fore leg (black throughout in *C. dracomontana*), the narrower hindwing discal spot (broad, cuneiform in *C. dracomontana*), and the narrower, but significantly darker hindwing margin, which does not have contact with the discal spot. The male genitalia of both species are indistinguishable.

#### *Cabomina heliostoma* (Meyrick, 1926) (Figs. 16, 17)

*Chamanthodon heliostoma* MEYRICK, 1926: 267; GAEDE 1929: 524; HEPPNER & DUCKWORTH 1981: 41.

*Chamanthodon heliostoma* (incertae sedis): GORBUNOV & ARITA 1998b: 19; PÜHRINGER & KALLIES 2004: 13.

*Cabomina heliostoma*: FREINA 2008: 164.

Type material examined: Lectotype (designated here) ♂ (Fig. 16), Natal, Weenen, Feb 1925, leg. H. P. THOMASSET (BMNH). – Paralectotype ♀ (Fig. 17), same locality, Mar 1925 (BMNH).

*Cabomina heliostoma* was described on the basis of two specimens, a male and a female, which were separately captured in the same locality (MEYRICK 1926). According to the original description, and in contrast to the assumption by FREINA (2008), both specimens are primary types. The conspecificity is questionable, because both specimens show quite different coloration of head, legs and abdomen. The female is rather monochromatic with broad, black hindwing margin and may belong to *C. ruthmuelleriae*. The male is well characterized by the largely hyaline hindwings and the orange-yellow marked head, abdominal tergite 4, anal tuft and legs, thus it is here selected as the lectotype.

#### *Cabomina chalypsa* (Hampson, 1919) n. comb. (Figs. 18–22, 65, 76)

*Chamanthodon chalypsa* HAMPSON, 1919: 67; DALLA TORRE & STRAND 1925: 73; GAEDE 1929: 524; HEPPNER & DUCKWORTH 1981: 40.

*Chamanthodon chalypsa* (incertae sedis): GORBUNOV & ARITA 1998b: 19; PÜHRINGER & KALLIES 2004: 13.

Type material examined: Holotype ♂ (Fig. 18), South Africa, Natal, Durban (BMNH).

Other material examined: 6 ♂♂ (Fig. 19), 1 ♀ black form (Fig. 22), Swaziland, Mbabane, Sidwashini, 8 Dec 1990, leg. N. J. DUKE; 5 ♂♂ yellow form (Figs. 20, 21), same data (♂, BARTSCH gen.-prep. 2013-09, Fig. 65); 1 ♀ black form, same data, 16 Dec 1990 (BARTSCH gen.-prep. 2013-11, Fig. 76); 1 ♂, black form, Swaziland Millen Falls, 24 Dec 1995, leg. N. J. DUKE, coll. DUKE (all TMSA).

The holotype belongs to the black form. It is mouldy and damaged, the tips of the antennae, the right labial palpus as well as the mid and hind legs are missing. It was not dissected and no further specimens from the type locality are known.

The following redescription is based on a series of 12 males and two females from Swaziland. The largest specimens of this series are similar in size to the holotype. The colour pattern of the dark forms and the shape of the translucent hindwing components in most forms are identical. But it cannot be ruled out, that these specimens represent a sibling species of *C. chalypsa*.

#### Redescription

Male. Wingspan 18–24 mm, forewing length 8–9 mm, antennal length 7.5–8.5 mm, body length 12–14 mm. – Head: Labial palpus dark orange-yellow, third palpomere black; frons and vertex glossy black; pericephalic scales dorsally orange, laterally black; antenna black. – Thorax: Black. Wings black, forewing underside with costal margin proximally orange; hindwing somewhat semi-transparent, proximally transparent, discal spot cuneiform; fringes of all wings dark grey. Legs black, fore coxa orange, tarsomeres of all legs distally with pale yellow narrow ring; spurs whitish. – Abdomen: Black, laterally with broad orange stripe, tergite 4 black throughout; anal tuft dorso-medially, laterally and ventrally orange. Genitalia generally as stated in the genus description, but uncus and valva rather long and narrow, the latter distally narrowly rounded and the medio-basal crista slightly raised (Fig. 65).

Female. Almost entirely black, except for the pale yellow first and second joint of the labial palpus, and the yellowish fore coxa. Females resembling the yellow form are unknown. Genitalia see genus description (Fig. 76).



## Variation

Beside the typical black male form richly yellow marked ones exist. – Head: Labial palpus orange-yellow, first palpomere dorsally, second palpomere dorso-proximally whitish-yellow, third palpomere with some black scales ventrally; antenna black, scape ventrally orange, flagellum with white subapical patch dorsally. – Thorax: Black; tegula sparsely covered with whitish, hair-like scales; metathorax dorso-laterally with tufts of orange, hair-like scales. Forewing black, costal margin fine yellow, discal cell and area between discal spot, distal margin and veins  $R_4$  and  $M_3$  pale yellow, more or less densely admixed with black; hindwing pale yellow, semitransparent, proximal part transparent, discal spot and distal margin black; underside of all wings pale yellow, discal spots and distal margins black. Legs yellow; fore coxa densely mottled with black; coxa and femur of mid and hind leg black; spurs pale whitish-yellow.

The yellow forms vary in intensity and extension of the yellow wing markings, which in the forewings are more or less mottled with black and often somewhat reduced, in the smallest extreme to a small patch distal of the discal spot. The forewing underside can be black throughout. All forms vary in the extension of the transparent hindwing area.

## Diagnosis

*Cabomina chalypsa* is one of the largest species of the genus, surpassed only by the following very similar *C. flavivertex*. Both species can be distinguished as follows: in *C. chalypsa* the vertex is nearly completely black with some orange scales occipitally rather than orange with small black medial patch in *C. flavivertex*; the hindwings are less densely scaled with extensive transparent area proximally, the coloration appears paler (only a very small hyaline stripe near wing base, coloration brighter in *C. flavivertex*). Black forms of *C. chalypsa* have the hindwing discal spot well developed (indistinct in *C. flavivertex*). Furthermore *C. chalypsa* has minutely longer and slender, more considerably pointed antennae and abdominal tergite 4 sometimes with indistinct yellow posterior margin. The male genitalia of *C. chalypsa* differ from that of *C. flavivertex* by the distinctly longer and narrower uncus and valva, the latter is apically more clearly pointed.

Smaller specimens of the dark forms of *C. chalypsa* with extensive transparent hindwings can be confused with *C. heliostoma* or *C. dracomontana*. These two species differ by the presence of a narrow, in *C. heliostoma* yellow, in *C. dracomontana* white posterior margin of abdominal tergite 4; furthermore *C. dracomontana* has the labial palpus pale yellow with black terminal palpomere (labial palpus orange in *C. chalypsa*); *C. heliostoma* has the legs ringed with yellow (legs completely black in *C. chalypsa*).

*Cabomina flavivertex* n. sp.  
(Figs. 23, 24, 66)

**H o l o t y p e** ♂, yellow form (Fig. 23): “[South Africa] Pretoria, 11 Dec ‘15, W. IMPEY” “*Janseia callichroma* ♂ Type, LE CERF, F. LE CERF det. 1921” “*Janseia callichroma* LE CERF. Type No. 2666” [listed by FITZSIMONS et al. 1958, nomen nudum] (TMSA).

**Paratypes** (3): 1 ♂, yellow form Johannesburg, 5 Nov 1975, leg. M. PICKER (TMSA); 1 ♂, black form (Fig. 24), South Africa, Transvaal, Irene, 8 Dec 1968, leg. C. K. BRAIN (BARTSCH gen.-prep. 2013-08, Fig. 66) (TMSA); 1 ♂ yellow form, same locality, 4 Nov 2013 (CDK).

## Etymology

Named after its typical bright yellow vertex, which is the best character to separate this species from its sibling species *Cabomina chalypsa*.

## Description

**Male.** Wingspan 25–27 mm, forewing length 11–12 mm, antennal length 7.5–8.5 mm, body length 14–15 mm. – Head: Labial palpus orange-yellow; frons glossy black; vertex orange, occipitally mixed with black; pericephalic scales dorsally orange, laterally mottled with black; antenna black, scape ventrally orange, flagellum dorsally with white subapical patch. – Thorax: Black; prothorax laterally with some orange-yellow scales; tegula and dorso-lateral scale tufts of metathorax mottled with orange, hair-like scales. Wings almost completely opaque; forewing black, costal margin fine yellow, cell and area distally of discal spot, between distal margin and veins  $R_4$  and  $M_3$  yellow; hindwing bright yellow, with small transparent parts basally, discal spot and distal margin black; underside of both wings yellow, discal spots and distal margins black; fringes of all wings dark grey. Legs yellow, more or less densely mottled with black; mid and hind leg with coxa and femur laterally black, first tarsomere pale yellow, other tarsomeres black distally with narrow pale yellow ring; spurs of all legs pale yellow. – Abdomen: Laterally with orange stripe; tergite 4 with indistinct orange posterior margin; anal tuft dorso-medially, laterally and ventrally orange. Genitalia as stated in the genus description. Uncus and valva rather long and narrow, the latter distally narrowly rounded and the medio-basal crista slightly raised.

Female unknown.

## Variation

As in the previous species bright yellow marked and predominantly black male forms were found. Black forms have head similar to the yellow form, but antennae pure black. Thorax with dorsum, legs and wings black, apart from yellow fore coxa and yellowish mottled costal margin and wing base of forewing underside; spurs whitish. Abdomen each segment with an orange patch laterally instead of an unbroken lateral stripe.

### Diagnosis

Very similar in pattern and variation to *C. chalypsa*. For differentiation of this and other related species see diagnosis of *C. chalypsa* before.

#### *Cabomina leucopleura* (Hampson, 1919) **n. comb.** (Figs. 25–27, 77)

*Chamanthodon leucopleura* HAMPSON, 1919: 67; DALLA TORRE & STRAND 1925: 73; GAEDE 1929: 524; HEPPNER & DUCKWORTH 1981: 41; VÁRI et al. 2002: 67.

*Chamanthodon leucopleura* (incertae sedis): GORBUNOV & ARITA 1998b: 282; PÜHRINGER & KALLIES 2004: 13.

Type material examined: Holotype ♀ (Fig. 25), South Africa, Transvaal, Johannesburg, 14 Jun 1901 (BMNH).

Other material examined: 1 ♀, Pretoria, 18 Apr 1914, leg. H. K. MUNROE (Figs. 26, 27); 1 ♀, Gauteng, Faerie Glen NR, 5 Apr 1908, leg. U. STRAUSS; 1 ♀, Pretoria, 31 Mar 1918, leg. A. J. T. JANSE (TMSA gen.-prep. No. 3825, Fig. 77) (all TMSA).

The type specimen lacks both antennae and almost all fringes of the wings. Three further female specimens from Pretoria are housed in the TMSA. The genitalia of one of them have been dissected by VÁRI and correspond perfectly with the genus diagnosis (Fig. 77). *C. leucopleura* can be easily distinguished from all congeners by the distinct white lateral spots of tergites 4 and 6. The hindwings have the distal margin very broad opaque and fused with the discal spot.

#### *Cabomina tiresa* (Druce, 1899) **n. comb.** (Fig. 28)

*Aegeria tiresa* DRUCE, 1899: 202.

*Chamanthodon tiresa*: HAMPSON 1919: 68; DALLA TORRE & STRAND 1925: 73; GAEDE 1929: 524; HEPPNER & DUCKWORTH 1981: 41; VÁRI et al. 2002: 67.

*Aenigmata tiresa*: GORBUNOV & ARITA 1998b: 282; PÜHRINGER & KALLIES 2004: 13.

Type material examined: Syntype ♂ (Fig. 28), E. Africa, Delagoa Bay [Mozambique, Maputo Bay], leg. MONTEIRO (BMNH).

No clear information regarding the number of types is given in the original description. I found only a single, damaged syntype in the BMNH. The designation of a lectotype is unnecessary as long as no other syntype is known. The specimen lacks the left antenna; the abdomen was broken off and repaired with the underside uppermost. According to the original description tergites 4 and 7 are banded with white (“first and fourth” numbered from tip to base). This species appears rather similar to *C. leucopleura*, which has these tergites marked with white lateral spots. Accordingly, it is here transferred to *Cabomina*, but

this must be considered provisionally as long as no further specimens are available and the genitalia cannot be examined.

### 5.2 *Osminia* Le Cerf, 1917

Type species: *Osminia ferruginea* Le Cerf, 1917, by original designation.

Literature: LE CERF 1917: 327; DALLA TORRE & STRAND 1925: 118; ZUKOWSKY 1936: 1243; NAUMANN 1971: 22; HEPPNER & DUCKWORTH 1981: 28; FLETCHER 1982: 115; PÜHRINGER & KALLIES 2004: 12.

*Osminia* has a predominantly New World distribution. Eleven species are known from Mexico and the southern parts of the United States (EICHLIN 1998). In the Afrotropical Region it is only represented by *O. namibiana*, which occurs in the higher elevations of the Brandberg, Namibia (KALLIES 2004). *Osminia* seems closely related to *Aenigmata* and *Cabomina*, which both exclusively occur in the Afrotropical region. This likely relationship is indicated by several common structures of the male genitalia, in particular the well developed gnathos, the rather unspecialized valva and the simple setae of uncus and valva and the nearly identical structure of the female genitalia. *Osminia* can be separated by its compact and strong body with rather short and strong legs, which both are longer and much more slender in the genera compared, most extreme in *Aenigmata*. The latter genus differs moreover by the reduced haustellum (well developed in *Osminia*). Males of *Osminia* have the gnathos apically more or less rounded, the gnathos and the tuba analis relatively short and broad; the uncus rather short and compact, densely clothed with fine setae; and the valva elongate, distally upward bent (gnathos long and slender, apically strongly pointed in *Aenigmata* and *Cabomina*; tuba analis with subscaphium extremely long, especially in *Cabomina*; uncus long and narrow, only sparsely covered with setae in *Aenigmata*; and valva ovoid in *Aenigmata*; elongate, dorso-distally abruptly broadened in *Cabomina*) (compare also EICHLIN 1983). Females can be separated from those of *Cabomina* by the presence of a signum of the bursa copulatrix. The relationship of typical New World members of *Osminia* and *O. namibiana* as well as the two species of the Eurasian genus *Sazonia* described by GORBUNOV & ARITA (2001) remains unclear. This problem was briefly discussed by KALLIES (2004).

#### *Osminia namibiana* Kallies, 2004 (Fig. 29)

Type material examined: Holotype ♂ (Fig. 29), Namibia, Brandberg, Wasserfallfläche, 1940 m, 22 Mar 2002 (MNHB, later NMNW).

*Osminia namibiana* is a small and inconspicuous species, but nevertheless unique within the Afrotropical Osmiini. Some superficially similar, small and greyish coloured species of Synanthedonini are distinguished by the tribe characters, such as the presence of obvious ciliae of the male antenna and a common stalk of hindwing veins  $M_3$  and  $CuA_1$ , as well as by the very different structure of the genitalia.

### 5.3 *Aenigmina* Le Cerf, 1912

Type species: *Aenigmina aenea* Le Cerf, 1912, by monotypy.

Literature: LE CERF 1912: 291; HAMPSON 1919: 71; DALLA TORRE & STRAND 1925: 108; GAEDE 1929: 525; NAUMANN 1971: 11; HEPPNER & DUCKWORTH 1981: 42; FLETCHER 1982: 4; GORBUNOV & ARITA 1998b: 281; PÜHRINGER & KALLIES 2004: 13.

*Aenigmina* was revised by GORBUNOV & ARITA (1998b) rather recently. This genus is restricted to the Afrotropical region and currently comprises four species. Females are unknown. Two groups of species can be distinguished. The typical group, with *A. aenea* Le Cerf, 1912 and *A. latimargo* Le Cerf, 1912, both from Tanzania, have the body and the legs long and slender, black with an intense violet gloss; the antenna nearly as long as the forewing, apically pointed, brown with black tip; the hindwing margin broad, proximally clearly defined; the male genitalia with short tegumen and ovoid valva. The two species of the other group, *A. critheis* and *A. albiapex*, occur in the investigation area. They differ considerably from the typical group by the more compact, shorter and stronger, predominantly matt blackish coloured body and legs; the shorter and thicker, apically slightly truncated, entirely black antenna; the broad, but indistinctly bordered or narrow hindwing margins; the male genitalia (based on *A. albiapex*) with much longer tegumen and trapezoid shape of the valva.

#### Diagnosis

The definition of *Aenigmina* is difficult, due to the rather inhomogeneous appearance of the currently assigned species and the lack of females. Common characters are: (1) haustellum reduced; (2) male antenna with appressed ciliae; (3) uncus long and narrow, distally sparsely covered with simple setae; (4) valva ovoid or trapezoid, distally densely covered with basad pointing, simple setae; (5) phallus long and narrow with well developed coecum penis, vesica covered with numerous fine spinuli.

For differentiation from the superficially somewhat similar *Cabomina*, see diagnosis of this genus.

### *Aenigmina critheis* (Druce, 1899) (Fig. 30)

*Aegeria critheis* DRUCE, 1899: 202.

*Chamanthodon critheis*: HAMPSON 1919: 68; DALLA TORRE & STRAND 1925: 73; GAEDE 1929: 524; HEPPNER & DUCKWORTH 1981: 40; VÄRI et al. 2002: 67.

*Aenigmina critheis*: GORBUNOV & ARITA 1998b: 282; PÜHRINGER & KALLIES 2004: 13.

Type material examined: Syntype ♂ (Fig. 30), E. Africa, Delagoa Bay [Mozambique, Maputo Bay], leg. MONTEIRO (BMNH).

Similar to other descriptions by DRUCE, no clear information concerning the number of types is given (DRUCE 1899). Only a single, well-preserved specimen was found in the BMNH. It is well characterized by its broad yellow fourth tergite of the abdomen, which is not present in any other species of Osmiini in southern Africa. I refrain from the designation of a lectotype as long as no other specimen becomes known.

### *Aenigmina albiapex* n. sp. (Figs. 31, 32, 67)

**H o l o t y p e** ♂ (Figs. 31, 32): South Africa, Kwazulu-Natal, Sodwana, 1290 m, 8–9 Feb 1997, N. J. DUKE leg. (TMSA).

**Paratypes** (2): 1 ♂ (Fig. 67), [South Africa], Pretoria, 5 Jan 1971, H. TOWNES leg. (TMSA); 1 ♂ Swaziland, Lubombo Distr., Mlawula NR, Mbuluzi Gorge, 26°10'09.0"S, 32°04'48.4"E, 150 m, 26 Jan 2015, D. BARTSCH leg. (SMNS).

#### Etymology

Named after the unusual whitish stripe of the forewing apex.

#### Description

**Male.** Wingspan 15–18 mm, forewing length 6.5–8.0 mm, antennal length 4.5–5.5 mm, body length 9–12 mm. – Head: Labial palpus white, distal half of second as well as third palpomere dorsally brownish-yellow, third ventrally brownish-grey; frons smooth, dark silver-grey with light purple sheen; vertex smooth, black with some brownish-yellow scales between antenna and ocellus; pericephalic scales dorsally brownish-yellow, laterally white; antenna black. – Thorax: Dark grey to black; tegula posteriorly somewhat brownish-yellow; dorso-lateral scale tufts of metathorax white. Legs blackish grey; fore coxa externally white; fore tibia ventrally brownish-yellow; mid tibia dorsally and externally white; hind tibia mottled with some brownish-yellow scales, medially and distally with narrow white ring; tarsomeres of all legs distally with narrow white ring; spurs dark grey, reverse side whitish. Forewing blackish grey with well developed transparent areas, anterior short, external 4-partite, broadest costad with veins and margins yellow; apical area with

some yellow scales between median veins and a distinct, apically directed whitish-yellow spot between  $R_4$  and  $R_5$ , common stalk of these veins very short; underside posterior of discal spot white. Hindwing hyaline, veins and margins dark grey, discal spot triangular, extending somewhat beyond  $M_2$ ; fringes dark grey. – Abdomen: Dark grey to black, scarcely mottled with pale- to brownish-yellow scales, most densely laterally at segment 4; anal tuft black, medially and laterally yellow, outer side of valva distally pale yellow. Genitalia (Fig. 67) with tegumen long and narrow; gnathos rather short and thick; uncus long and narrow, ventro-laterally with some simple setae; valva trapezoid, dorso-distally triangularly broadened and apically narrowly rounded, distally and at ventral margin covered with basad pointed, simple setae; saccus long and narrow, rounded; phallus long and narrow with short coecum penis; vesica with numerous small cornuti.

Female unknown.

#### Diagnosis

The newly described species is easily recognizable due to the well-developed transparent areas and the eponymous whitish spot of the forewing apex. It is here described in *Aenigmia* based on the reduced haustellum, the wing venation and, more important, characters of the male genitalia. In contrast to the two typical species, *A. aenea* Le Cerf, 1912 and *A. latimargo* Le Cerf, 1912, *A. albiapex* appears more compact with stronger and shorter legs, shorter and somewhat thicker antenna, well-developed transparent areas, hyaline hindwings and absence of violet gloss of the body. The male genitalia differ by the distinctly longer tegumen and the trapezoid, not ovoid valva.

#### Habitat and behaviour

Nothing is known about the life history. The male from Swaziland was unspecifically attracted to various artificial pheromones during sunshine in the late morning hours. The habitat was a clearing in acacia bush that had been burned the previous year. A small, violet flowering species of Lamiaceae was the dominant herb.

#### 5.4 *Noctusphecia* Freina, 2011

Type species: *Noctusphecia puchneri* FREINA, 2011: 48, by original designation.

*Noctusphecia* was described on the basis of a single male from Mafinga, southern Tanzania. This specimen was captured at light around 22:00 p.m., giving reason to assume a nocturnal activity of this species, which is reflected in the generic name. Two additional, very different females that belong here, were found in the collection

of the TMSA. They originate from Chanzi, Botswana, and from Penkridge, Eastern Highlands, Zimbabwe, and are described below.

*Noctusphecia* can be defined as follows: (1) coloration predominantly black, markings orange-red, scales almost smooth, rough at tibiae; (2) haustellum well developed; (3) labial palpus long and straight, first palpomere very short, second 1.5 times the length of third; (4) male antenna extraordinarily long, nearly as long as forewing, female antenna considerably shorter, reaching to the forewing discal spot; (5) forewing veins  $M_4$  and  $M_5$  coincident; hindwing vein  $M_2$  arising from centre of cross vein,  $CuA_1$  proximally of cell tornus; (6) male abdominal segment 8 caudally with short lateral protrusions.

The monotypic genus *Pyranthrene* Hampson, 1919 from Malawi is rather similar in external appearance. It differs from *Noctusphecia* by having the haustellum reduced, the labial palpus upturned to above the vertex, the male antenna distinctly shorter and the hind legs elongated. Females and genitalia structure of both sexes are unknown in *Pyranthrene*.

#### *Noctusphecia kgalagadia* n. sp. (Figs. 33, 34)

**H o l o t y p e** ♀ (Figs. 33, 34): “Ghanzi, Betch. 40 miles sw” Botswana, Ghanzi district, 64 km SW Ghanzi, 1150 m, 10 Nov 1961, leg. HAECKE & PROZESKY (TMSA).

#### Etymology

This species is named after the Kgalagadi or Kalahari, a large, semiarid, sandy savanna in southern Africa.

#### Description

Female. Wingspan 21 mm, forewing length 9 mm, antennal length 5.5 mm, body length 11 mm. – Head: Labial palpus black, first and second palpomere ventrally brownish-red; frons black with blue-metallic sheen; vertex black, adjacent to ocellus orange-red; pericephalic scales orange-red; antenna black. – Thorax: Dark brownish-black, laterally between patagia and wing base a broad, orange-red stripe; patagia black with metallic gloss, laterally brownish-red; tegula posteriorly orange-red; mesothorax dorso-laterally with narrow, orange-red longitudinal stripes; scapular spot at wing base black; dorso-lateral scale tufts of metathorax weakly developed, admixed brownish-black and orange-red. Fore leg black; coxa white, lateral margin proximally as well as tibia latero-distally with small brownish-red spot. Mid and hind leg with coxa white and femur black; mid tibia orange-red, mottled with black, proximally and distally black; hind tibia orange-red, proximally black, medio-laterally white; mid and hind tarsomeres black, proximally broadly annulated with white; spurs of all legs mixed black and



brownish-red. Forewing dark greenish-grey with intensive metallic gloss; wing base, discal spot, costal and inner margin orange, the latter proximally mixed with white; hindwing and underside of both wings dark blackish-grey; fringes dark grey, forewing apex and tornus orange. – Abdomen: Orange-red; first segment brownish-black; tergites 2–6 with triangular, brownish-black medial spot anteriorly, largest on tergite 6; anal tuft weak, dorsally brownish-black, ventrally orange-red. Genitalia not examined.

Male unknown.

#### Diagnosis

In size and coloration *Noctusphesia kgalagadia* n. sp. resembles somewhat *N. puchneri*, the type species of the genus. It differs by having the vertex black (rusty-red in *N. puchneri*); the predominantly black thorax and patagia (thorax orange-brown; patagia rusty-red in *N. puchneri*); and the distinct orange-red forewing markings (only discal spot ochre-brown in *N. puchneri*). *Noctusphesia rubra* is much larger and well characterized by the basally orange-red hindwings.

#### *Noctusphesia rubra* n. sp. (Figs. 35, 36)

**Holotype** ♀ (Figs. 35, 36): “Penkridge, 1.12.27 R. H. R. S.” [Zimbabwe, Eastern Highlands, Penkridge, 1 Dec 1927, R. H. R. STEVENSON] (TMSA). No paratypes.

#### Etymology

Latin *ruber* (= red).

#### Description

**Female.** Wingspan 30 mm, forewing length 13.5 mm, antennal length 8 mm, body length 16 mm. – Head: Labial palpus orange-red, second palpomere dorso-distally black, third palpomere black with some orange-red scales; frons dark greenish-grey with intensive metallic gloss; vertex orange-red, medially mottled with some black; pericephalic scales orange-red, laterally whitish; antenna black with white subapical spot. – Thorax: Dark brownish-black, between patagia and wing base with broad, orange-red lateral stripe; patagia brownish-red with metallic gloss, some black scales at posterior margin; posterior part of tegula, scapular spot at wing base, dorso-lateral stripes on mesothorax as well as dorso-lateral scale tufts of metathorax orange-red. Legs black; fore coxa medially and laterally brownish-red; mid and hind coxa distally white; fore and mid tibia with brownish-red lateral patch; hind tibia proximally black, medially orange-red, with narrow white ring between, distally black; first tarsomere of mid leg proximally white; first tarsomere of hind leg orange-red with

some white scales proximally, disto-laterally black; spurs of all legs mixed white and orange-red. Forewing inclusive fringes dark greenish-grey with intensive metallic gloss; costal and inner margin at proximal half as well as discal spot finely orange-red; hindwing inclusive fringes dark blackish-grey, proximal of discal spot orange-red; underside of both wings similar, but proximal half of forewing orange-red. – Abdomen: Orange-red; first segment brownish-black, with orange-red patch laterally; tergites 2 and 3 dorsally with large black medial spot, largest on tergite 3; tergites 4 and 5 with some black scales medio-dorsally; sternites brownish-grey, laterally narrow orange-red; anal tuft orange-red, medially fine brownish-black, laterally and ventrally brownish-black. Genitalia not examined.

Male unknown.

#### Diagnosis

For differentiation see diagnosis of *N. kgalagadia* below.

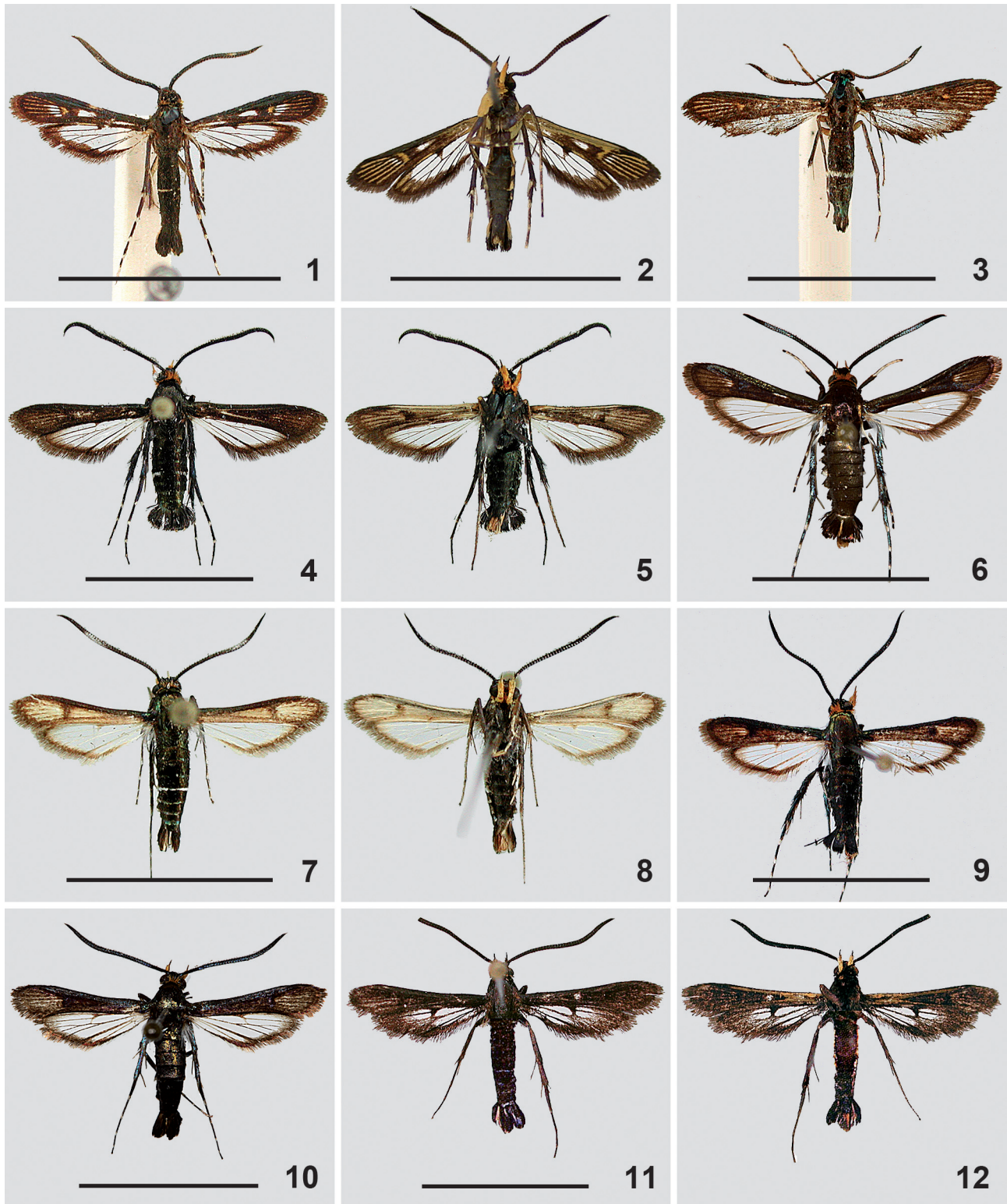
#### 5.5 *Erismatica* Meyrick, 1933

Type species: *Erismatica erythropis* Meyrick, 1933, by monotypy.

Literature: MEYRICK 1933: 415; HEPPNER & DUCKWORTH 1981: 43; FLETCHER 1982: 61; VÁRI et al. 2002: 67; PÜHRINGER & KALLIES 2004: 44.

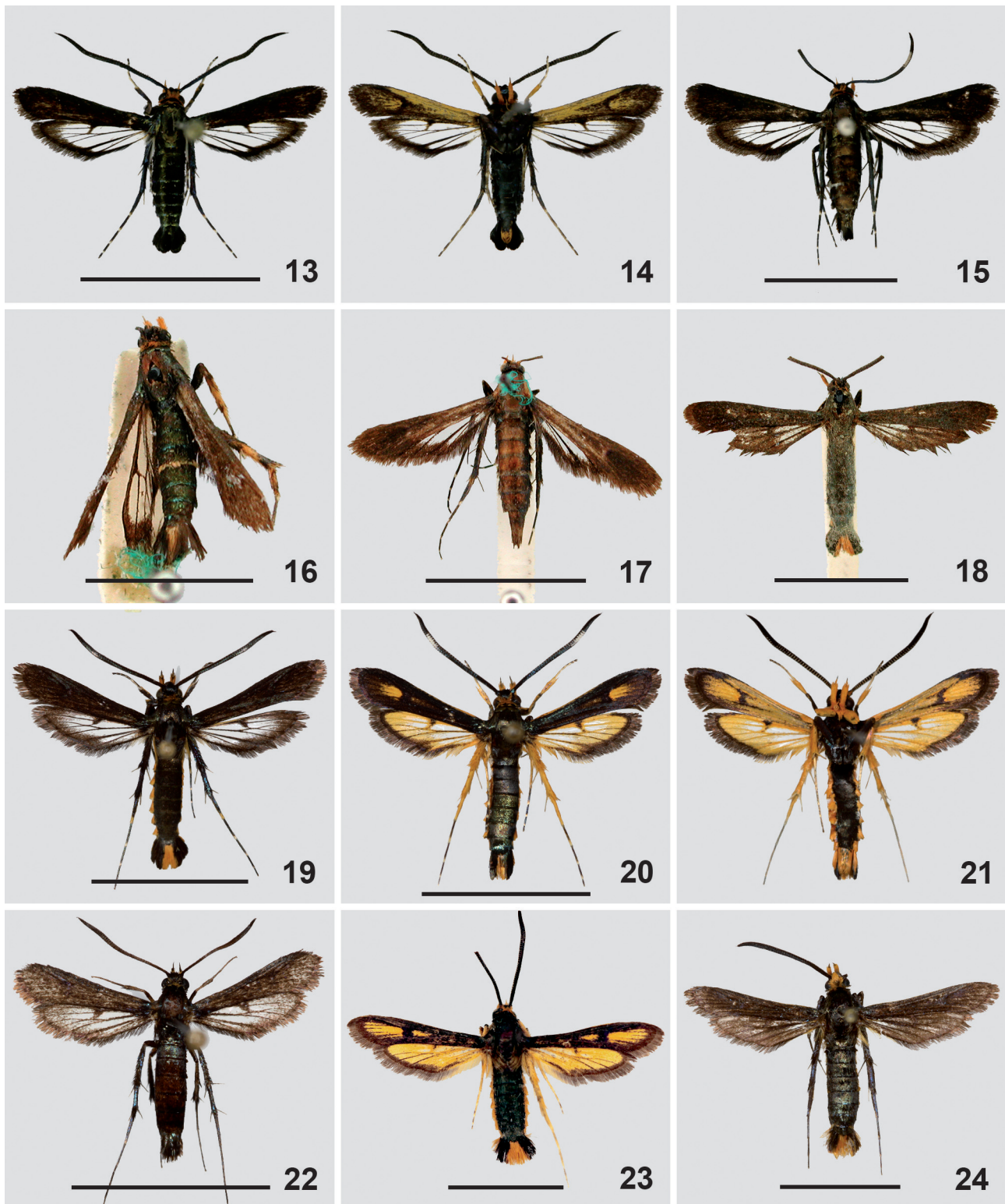
#### Redescription

**Head:** Haustellum well developed and functional; labial palpus moderately upturned, smooth, without hair-like scales, second palpomere 1.5 times the length of other palpomeres; frons width about 1.5–1.8 times the diameter of a compound eye, smooth; scales of vertex rather short, smooth; antenna rather short and strong, slightly clavate, without rami, entirely covered with short, appressed ciliae. – Thorax: Vestiture smooth; dorsally sparsely mottled with hair-like scales; metathorax dorso-laterally with dense tufts of short, hair-like scales. Legs strong and rather short, smooth, mid and hind tibia dorso-laterally rough; all pairs of spurs strong with outer spur half as long as inner one. Wings short and rather broad; forewing opaque, discal spot highlighted in colour, scales somewhat raised; hindwing hyaline, dorsum (= anal area) somewhat stepped, margins and distal tip of veins broadly covered with scales, discal spot short, extending to vein  $M_2$ . Wing venation (Fig. 90) of forewing with common stalk of veins  $R_4$  and  $R_5$ ; of hindwing with veins  $CuA_1$  and  $M_3$  arising together from, and  $CuA_2$  minimally proximal of cell tornus. – Abdomen: Short and broad, smoothly scaled; first tergites dorsally sparsely mottled with hair-like scales; anal tuft well developed.

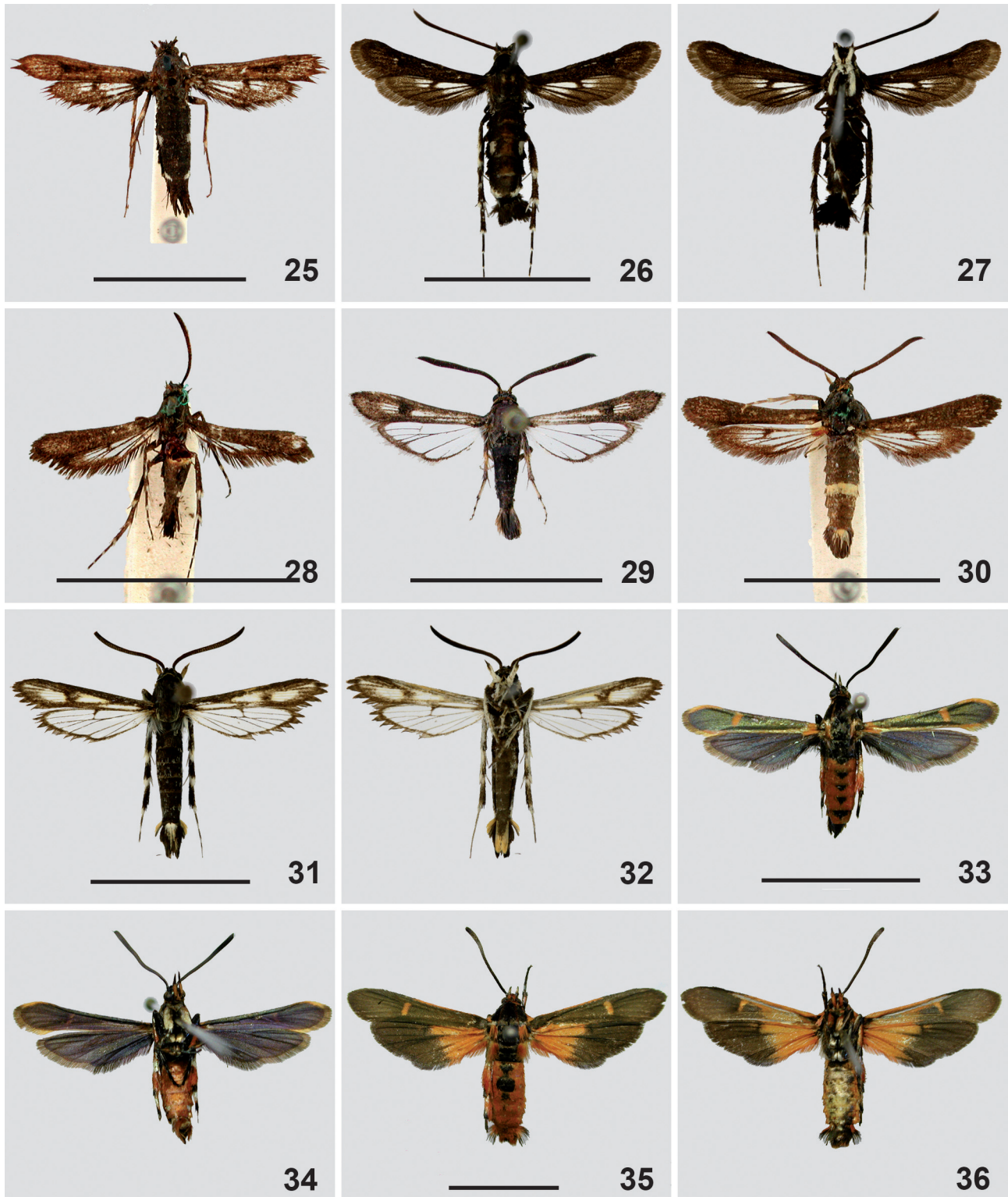


**Figs. 1–12.** *Cabomina* spp. – 1–3. *C. hilariformis* n. comb. 1. ♂, Port Natal. 2. ♂ ventral view, South Africa, KwaZulu-Natal, Durban, Umlalo. 3. ♀, KwaZulu-Natal, Durban. – 4–6. *C. monicae*. 4–5. ♂ holotype. 6. ♂, South Africa, East London, Beacon Bay. – 7–10. *C. tsomoana*. 7–8. ♂ holotype. 9. ♂ paratype. 10. ♂, South Africa, Drakensberge, Clarens. – 11–12. *C. dracomontana*, ♂ holotype. – Scales: 10 mm.



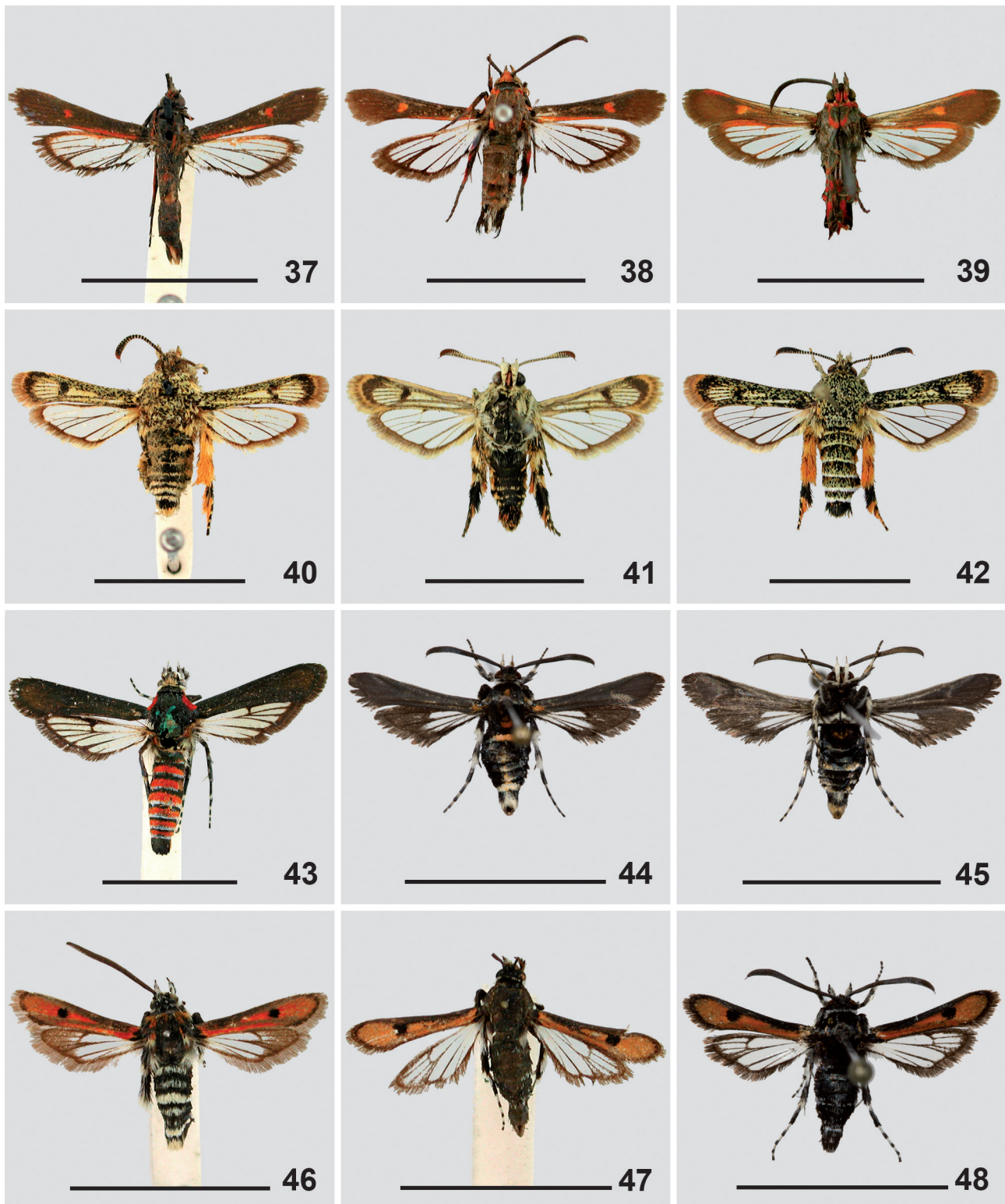


**Figs. 13–24.** *Cabomina* spp. – 13–15. *C. ruthmuelleri* n. sp. 13–14. ♂ holotype. 15. ♀ paratype, South Africa, Limpopo Province, Legalameetse. 16. *C. heliostoma*. ♂ lectotype. 17. *C. sp.* (*C. ruthmuelleri* n. sp.?) ♀ paralectotype of *C. heliostoma*. – 18–22. *C. chalybsa* n. comb. 18. ♂ holotype. 19. ♂ black form, Swaziland, Mbabane, Sidwashini. 20–21. ♂ yellow form, same locality. 22. ♀ black form, same locality. – 23–24. *C. flavivertex* n. sp. 23. ♂ holotype. 24. ♂ paratype, South Africa, Transvaal, Irene. – Scales: 10 mm.

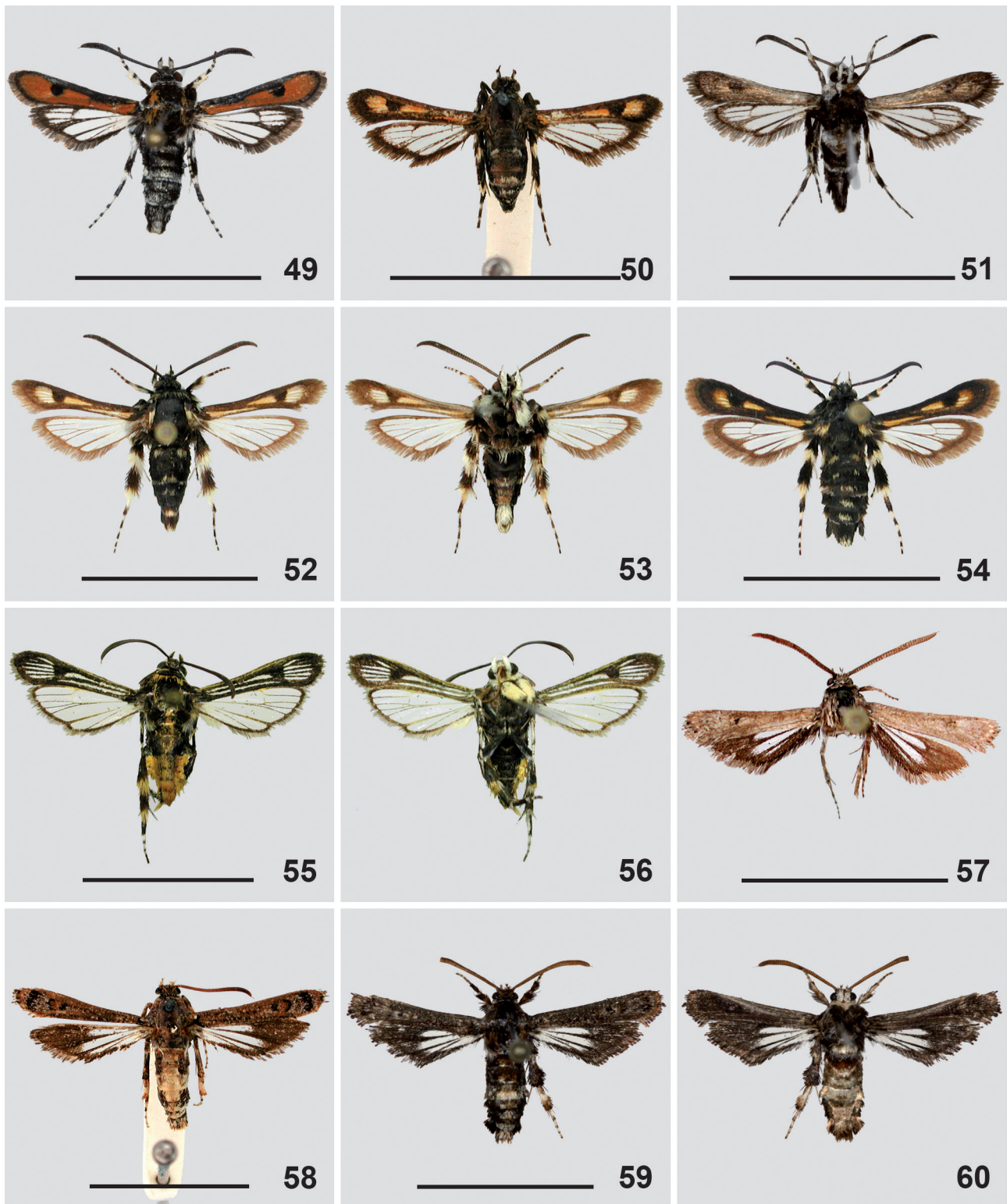


**Figs. 25–36.** *Cabomina*, *Osminia*, *Aenigmina* and *Noctusphecia* spp. – 25–27. *C. leucopleura* n. comb. 25. ♀ holotype. 26–27. ♀, South Africa, Pretoria. 28. *C. tiresa* n. comb. ♂ syntype. 29. *Osminia namibiana* ♂ holotype. 30. *Aenigmina critheis* ♂ holotype. – 31–32. *A. albiapex* n. sp. ♂ holotype. – 33–34. *Noctusphecia kgalagadia* n. sp. ♀ holotype. – 35–36. *N. rubra* n. sp. ♀ holotype. – Scales: 10 mm.



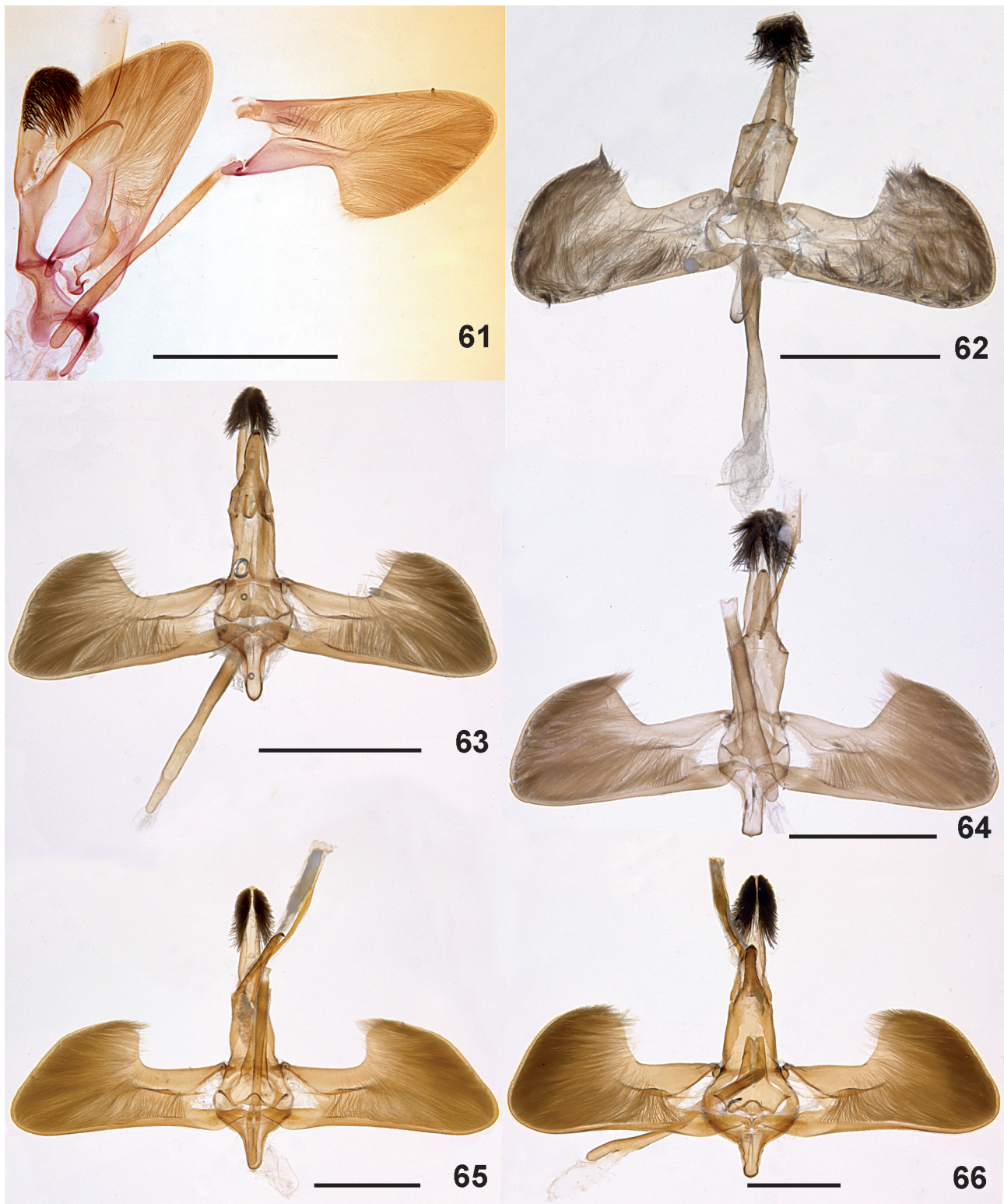


**Figs. 37–48.** *Erismatica*, *Halictina* n. gen. and *Homogyna* spp. – 37–39. *Erismatica endopyra* n. comb. 37. ♀ holotype. 38. ♀ holotype of *Erismatica erythropis* n. syn. 39. ♀ ventral view, S Rhodesia. – 40–42. *Halictina andraenipennis* n. comb. 40. ♂ holotype. 41. ♂ ventral view, South Africa, Free State, Sasolburg. 42. ♀, same locality. 43. *Homogyna spadiceicarpus* ♂ holotype. – 44–45. *H. nama* n. sp. ♂ holotype. 46. *H. ignivittata* ♂ holotype. – 47–48. *H. sanguipennis*. 47. ♂ holotype. 48. ♂, South Africa, Kwa-Zulu-Natal, Ntinini. – Scales: 10 mm.



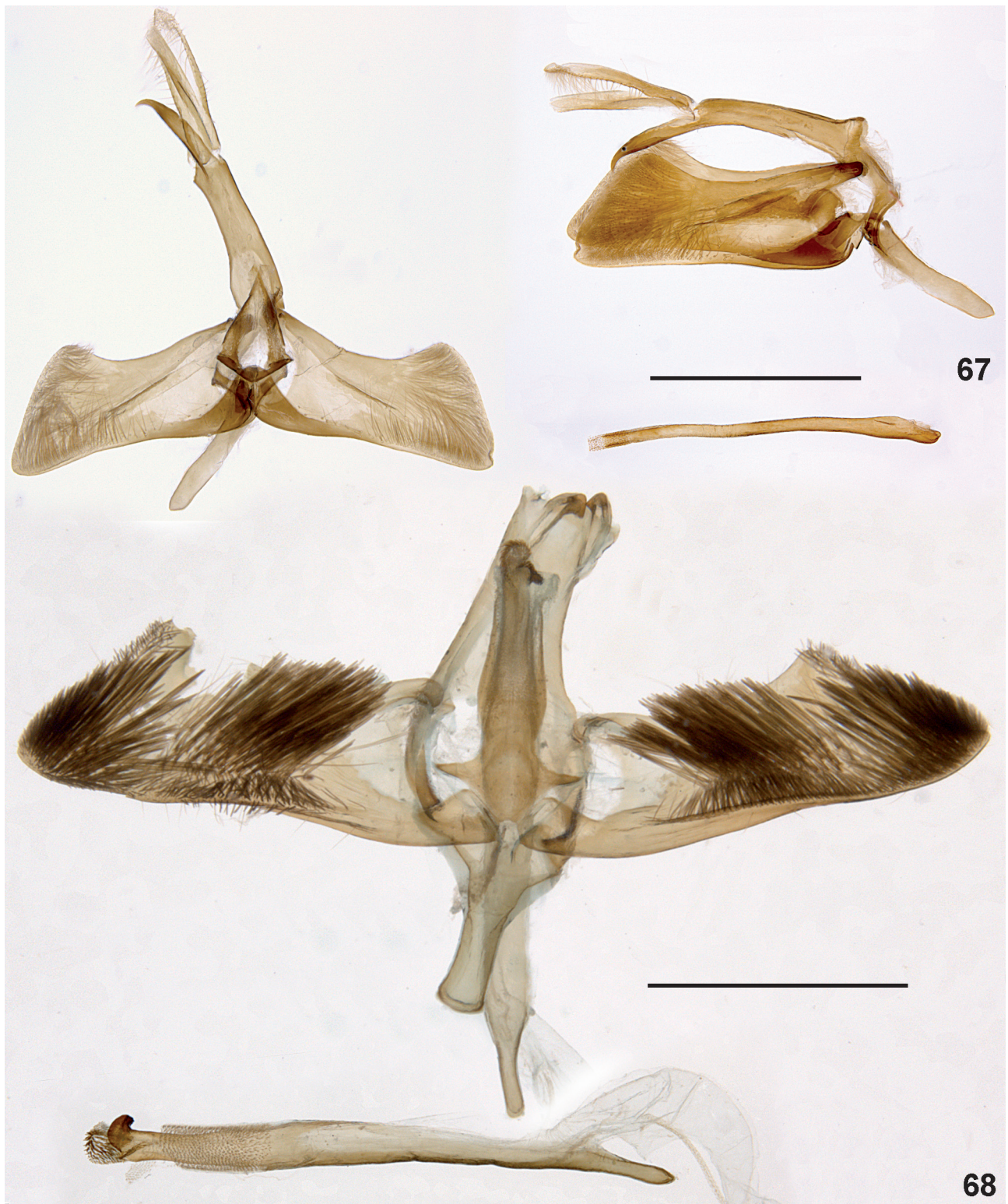
**Figs. 49–60.** *Homogyna* and *Echidgnathia* spp. – 49. *H. sanguipennis* ♀ South Africa, KwaZulu-Natal, Ntinini. – 50–51. *H. xanthophora*. 50. ♀ holotype. 51. ♀ ventral view, South Africa, KwaZulu-Natal, Utrecht. – 52–54. *H. dukei* n. sp. 52–53. ♂ holotype. 54. ♀ paratype. – 55–56. *H. xanthomelaena* n. sp. ♀ holotype. 57. *Echidgnathia khomasana* ♂ holotype. 58. *E. vitrifasciata* ♀ holotype. – 59–60. *Echidgnathia* sp. ♂, South Africa, KwaZulu-Natal, vic. Hluhluwe. – Scales: 10 mm.





**Figs. 61–66.** Genitalia of *Cabomina* spp. – **61.** *C. hilariformis* n. comb., ♂ East London. **62.** *C. monicae*. ♂, South Africa, East London, Beacon Bay. **63.** *C. tsomoana*. ♂, South Africa, Drakensberge, Clarens. **64.** *C. ruthmuelleri* n. sp. ♂ paratype, South Africa, Limpopo Province, Hangklip Forest Res. **65.** *C. chalypsa* n. comb. ♂, Swaziland, Mbabane, Sidwashini. **66.** *C. flavivertex* n. sp. ♂ paratype, South Africa, Transvaal, Irene. – Scales: 1 mm.





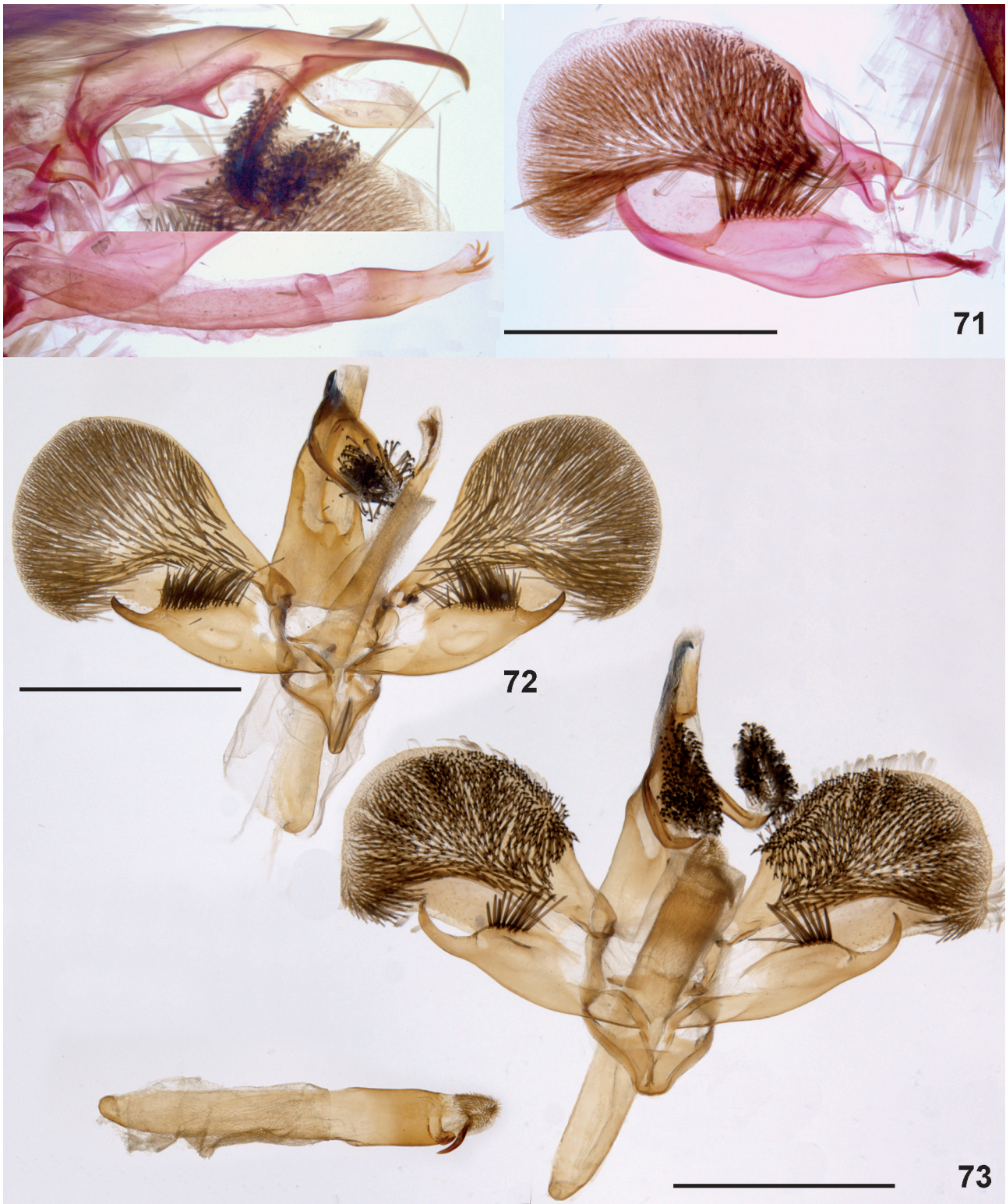
**Figs. 67–68.** Genitalia of *Aenigmata* and *Erismatica* spp. – **67.** *Aenigmata albiapex* n. sp., ♂ South Africa, Pretoria. **68.** *Erismatica endopyra* n. comb. ♂, South Africa, Pienaars river. – Scales: 1 mm.





**Figs. 69–70.** Genitalia of *Halictina* n. gen. and *Homogyna*. – **69.** *Halictina andraenipennis* n. comb., ♂, South Africa, Free State, Sasolburg. **70.** *Homogyna nama* n. sp., ♂ paratype, South Africa, Pienaars river. – Scales: 1 mm.





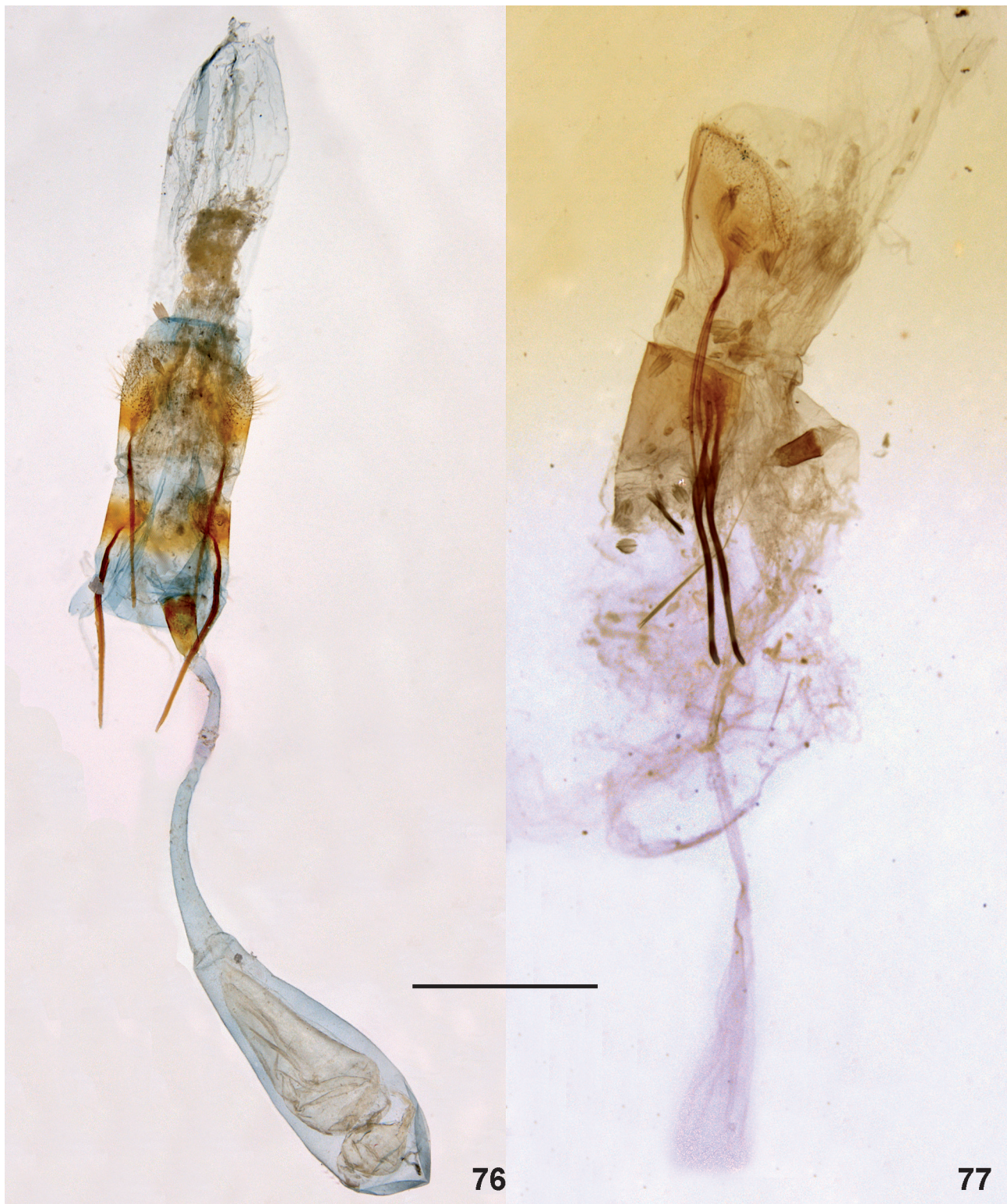
**Figs. 71–73.** Genitalia of *Homogyna* spp. – **71.** *H. ignivittata*, ♂, South Africa, unknown locality. **72.** *H. sanguipennis*, ♂, South Africa, KwaZulu-Natal, Ntinini. **73.** *H. dukei* n. sp., ♂ holotype. – Scales: 1 mm.





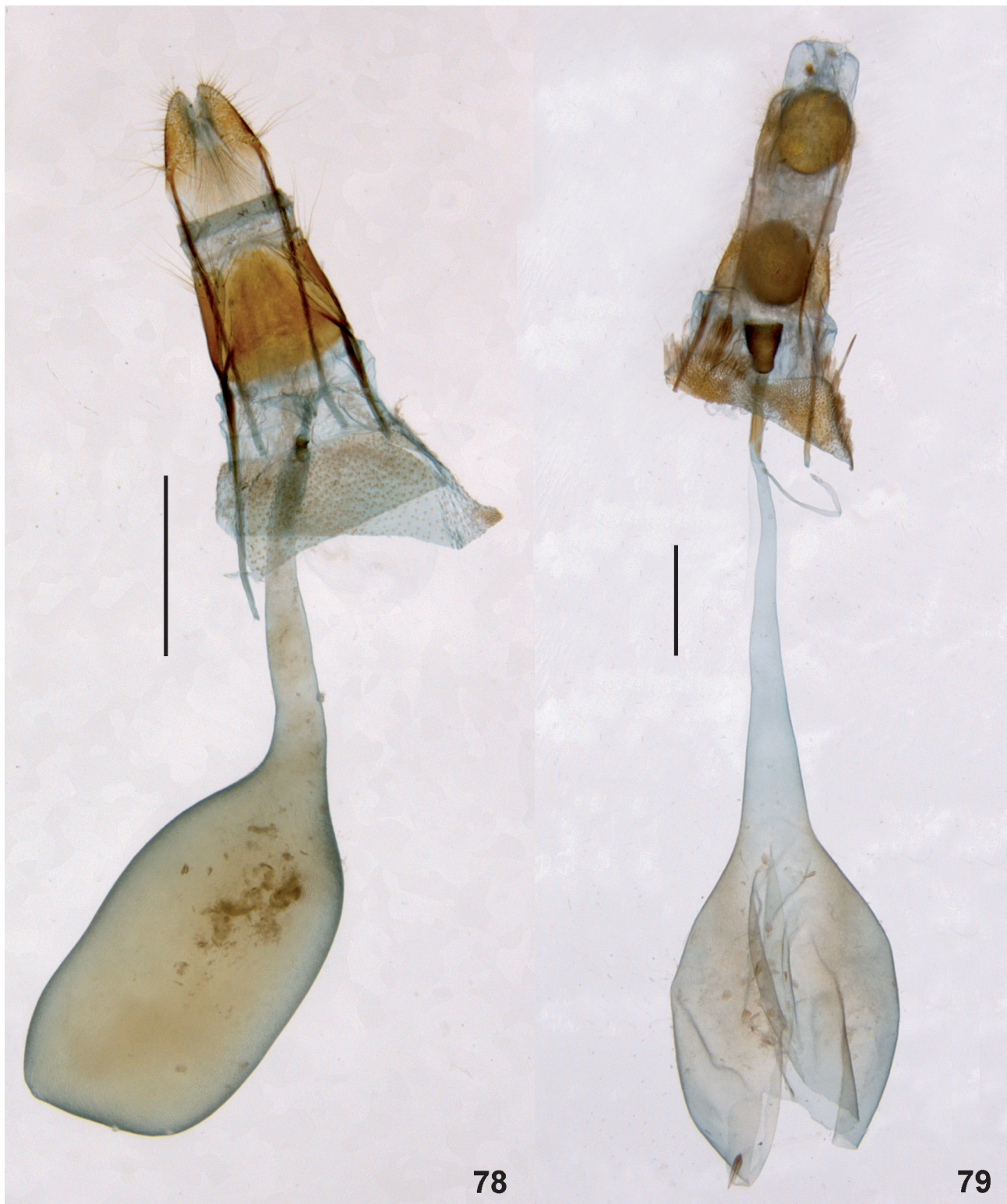
**Figs. 74–75.** Genitalia of *Echidnathia* spp. – 74. *E. khomasana*, ♂ holotype. 75. *E. sp. (E. vitrifasciata?)*, ♂, South Africa, KwaZulu-Natal, Hluhluwe. – Scales: 1 mm.





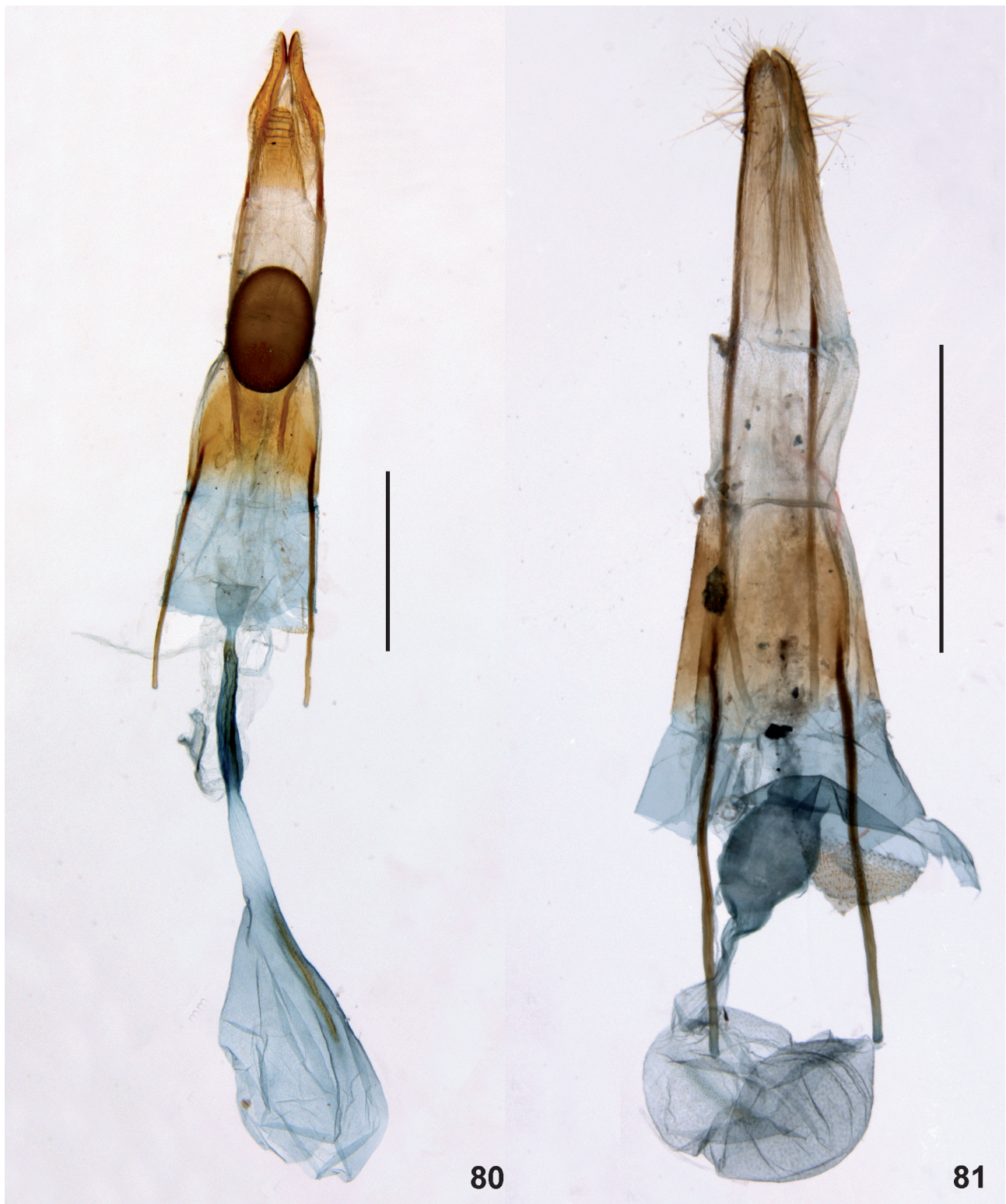
**Figs. 76–77.** Genitalia of *Cabomina* spp. – 76. *C. chalypsa* n. comb., ♀, Swaziland, Mbabane, Sidwashini. 77. *C. leucopleura*, ♀, South Africa, Pretoria. – Scale: 1 mm.





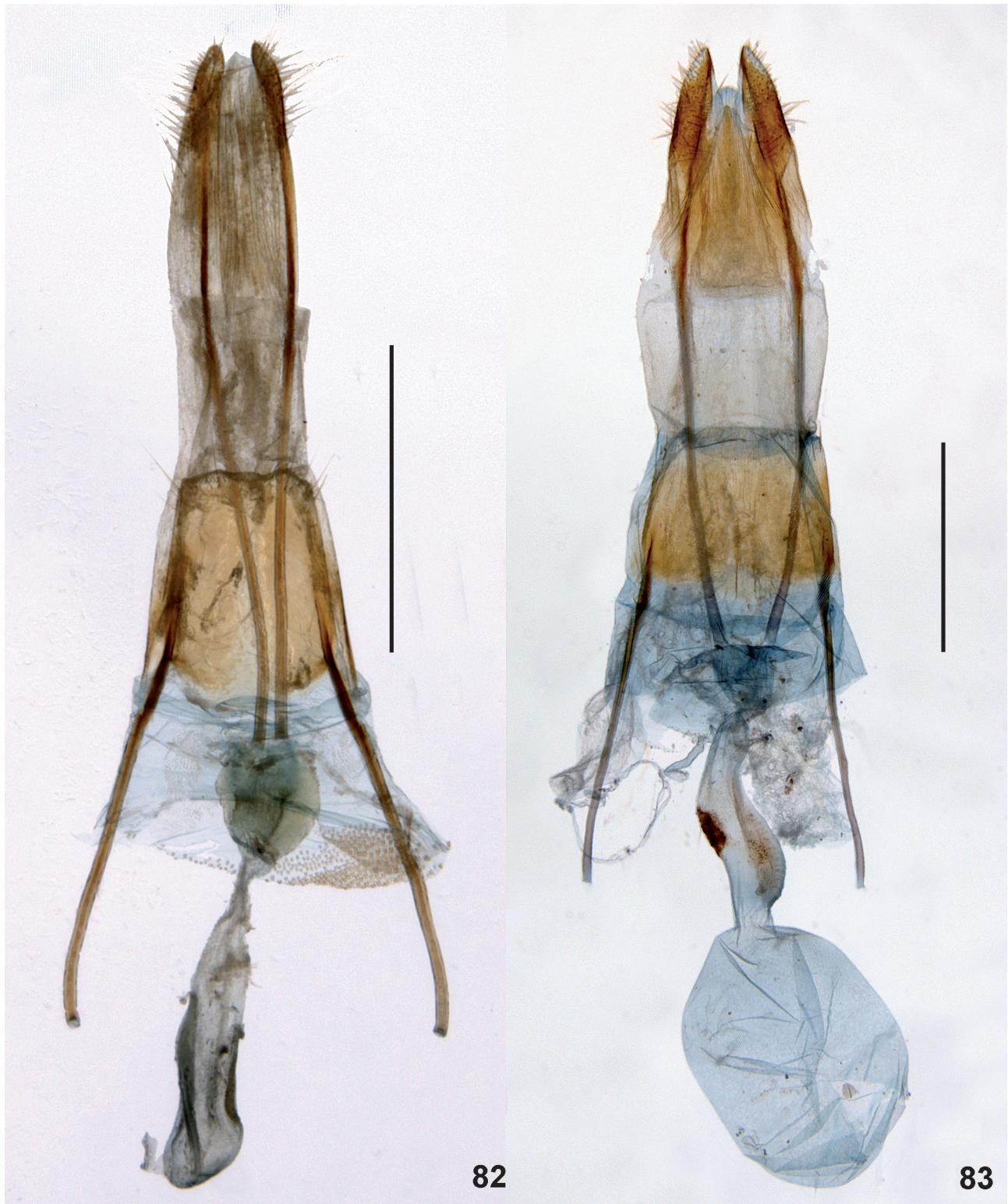
**Figs. 78–79.** Genitalia of *Erismatica* and *Halictina* n. gen. – **78.** *Erismatica endopyra* n. comb., ♀, Zimbabwe, unknown locality. **79.** *Halictina andraenipennis* n. comb., ♀, South Africa, Free State, Sasolburg. – Scale: 1 mm.





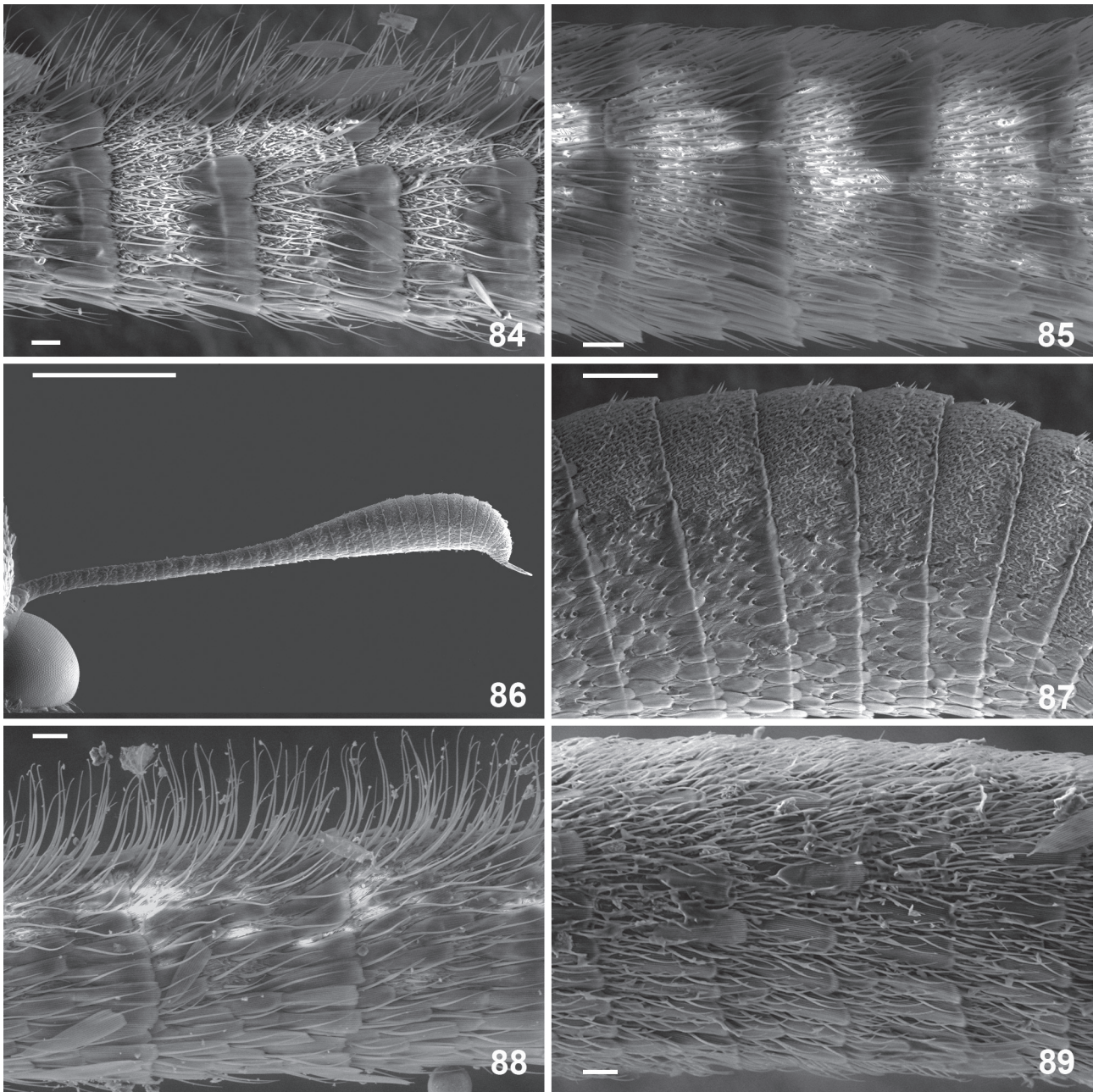
**Figs. 80–81.** Genitalia of *Homogyna* spp. – **80.** *H. sanguipennis*, ♀, South Africa, KwaZulu-Natal, Ntinini. **81.** *H. xanthophora*, ♀, South Africa, Pretoria. – Scale: 1 mm.





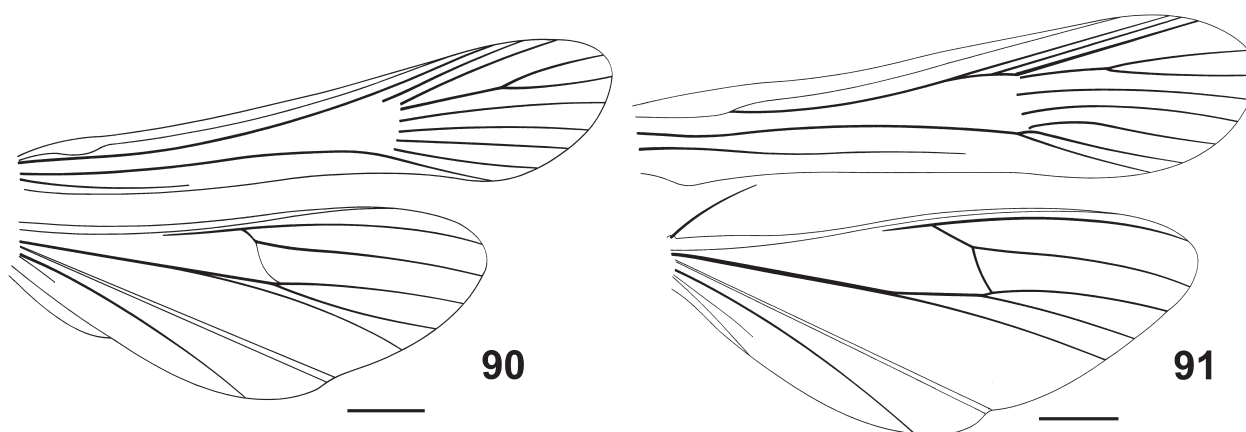
**Figs. 82–83.** Genitalia of *Homogyna* spp. – **82.** *H. dukei* n. sp., ♀ paratype. **83.** *H. xanthomelaena* n. sp., ♀ paratype. – Scale: 1 mm.





**Figs. 84–89.** Scanning electron micrographs of male antenna, ventral view, middle part (84, 84, 88, 89), distal part (87). – **84.** *Cabomina tsomoana* Freina, 2011, South Africa, Drakensberge, vic. Clarens. **85.** *Sazonia fenusaeformis* Herrich-Schäffer, 1852, unknown locality. – **86–87.** *Halictina andraenipennis* n. comb., South Africa, Free State, Sasolburg. **88.** *Pseudomelittia berlandi* Le Cerf, 1917, holotype. **89.** *Echidgnathia* sp. ♂, Kenya, Eastern Province, Nyambeni Hills. – Scales: 10 mm (86), 0.1 mm (87), 0.03 mm (84, 85, 88, 89).





**Figs. 90–91.** Wing venation of *Erismatica* and *Halictina* n. gen. – **90.** *Erismatica endopyra* n. comb. **91.** *Halictina andraenipennis* n. comb. – Scales: 1 mm.

Male genitalia (Fig. 68). Only a single male from TMSA could be examined (parts of its genitalia are broken off, the uncus is lost and the dorsal margins of the valvae are damaged). Tegumen narrow, distally tapering; gnathos short, forming two disto-lateral hooks; valva relatively narrow, trapezoid, apically pointed, medially and ventro-distally with clusters of long, simple and partially bifurcate setae, ventral and distal margin covered with short hairs; saccus short and broad; processus vinculi distally fused with tegumen; juxta narrow, manica with numerous minute spines; phallus straight, long and narrow distally with short sclerotized hook, coecum penis long and narrow; vesica with numerous basad pointing spines.

Female genitalia (Fig. 78). Papillae anales and segment 8 moderately broad, lamella postvaginalis triangular; pairs of apophyses long, posterior pair somewhat longer than anterior one; ostium bursae membranous, funnel-shaped, located intermedially between segment 7 and 8; antrum very short with narrow, sclerotized ring; ductus bursae membranous, very long, gradually enlarged; bursa copulatrix clearly separated, ovoid, anteriorly somewhat truncated, without signum.

#### Diagnosis

Relatively small, compact clearwing moths without distinct sexual dimorphism. The genus is here characterized as follows: (1) male antenna clavate, entirely covered with short, appressed ciliae; (2) valva trapezoid, crista sacculi absent; (3) setae of valva partially bifurcate, arranged in two confluent, medially and ventro-distally located clusters; (4) phallus with sclerotized distal hook; (5) antrum very short, forming a narrow, sclerotized ring;

(6) corpus bursae ovoid, anteriorly truncated, without signum.

A presumably close relationship between *Erismatica* and *Pseudomelittia* Le Cerf, 1917 is evident by the similar structure of the male genitalia, in particular the shape of tegumen, uncus, vinculum and phallus as well as the arrangement and shape of the setae of uncus and valva. Clear differences exist in the male antennae, which are narrow with indistinct, appressed ciliae in *Erismatica*, rather than thick with well visible ventrally protruding ciliae in *Pseudomelittia*; the hindwings with much smaller tornus in *Erismatica*; and the male genitalia with the valva trapezoid, pointed in *Erismatica*, but ovoid and distally rounded in *Pseudomelittia*. It cannot be ruled out that *Erismatica* and *Pseudomelittia* will be synonymized if more species become known. In this case *Pseudomelittia* would have priority.

Species belonging to *Echidgnathia* and *Homogyna* as well as the less closely related *Coccophila* and *Hagnogyna* (Sesiini) are superficially similar. Species of *Hagnogyna* can be distinguished by the striking pectination of the male antennae. The other genera can be differentiated by the venation. In *Erismatica*  $CuA_1$  and  $M_3$  arise from  $CuA_2$  in close proximity to cell tornus; *Hagnogyna* has  $M_3$  and  $CuA_1$  with short common stalk and arising from  $CuA_2$  near the cell tornus; *Echidgnathia* and *Homogyna* have origin of  $CuA_1$  minimally, and of  $CuA_2$  distinctly proximal of cross vein.

#### Distribution

*Erismatica* is currently only known from the eastern regions of South Africa and the southern parts of Zimbabwe.

*Erismatica endopyra* (Hampson, 1910) **n. comb.**  
(Figs. 37–39, 68, 78, 90)

*Tinthia endopyra* HAMPSON, 1910: 151.

*Homogyna endopyra*: HAMPSON 1919: 111; DALLA TORRE & STRAND 1925: 174; GAEDE 1929: 535; MEYRICK 1933: 415; HEPPNER & DUCKWORTH 1981: 43; PÜHRINGER & KALLIES 2004: 14, 44.

*Erismatica erythropis* MEYRICK, 1933: 415 **n. syn.**

Type material examined: Holotype of *Tinthia endopyra* ♀ (Fig. 37), “Natal” [South Africa, Natal] (BMNH). Holotype of *Erismatica erythropis* ♀ (Fig. 38), S. Rhodesia, Zimbabwe, nr. Fort Victoria, September, leg. J. OGILVIE (BMNH).

Other material examined: 1 ♀ (Fig. 39), S Rhodesia, [Zimbabwe, locality unreadable] Oct 1936 (gen.-prep. BARTSCH 2008–13, Fig. 78); 6 ♀♀, Palabye, B. P. S. E. [?], 18 Oct 1923, leg. R. STEVENSON; 1 ♀, S Rhodesia, Ziglzee [?], Distr. Westacre, 23 Oct 1930, R. H. R. STEVENSON; 1 ♀, South Africa, Transvaal, Pretoria north, 8–15 Sep 1971; 1 ♂, [South Africa] Pienaars river (gen.-prep. BARTSCH 2008–12, Fig. 68; Wing venation, Fig. 90); 1 ♀, Fort Beaufort, 15 Nov 1952, leg. H. K. MUNROE (all TMSA).

The type specimens of *Tinthia endopyra* and *Erismatica erythropis* are extremely similar and cannot be distinguished based on external characters. They are considered conspecific herein.

#### Redescription

Wingspan 17–21 mm, forewing length 7–9 mm, antennal length 6 mm, body length 9–11 mm. – Head: Labial palpus dark grey, dorsally somewhat lighter, first palpomere ventrally and tip of second laterally orange-red; frons grey with pearly sheen; vertex orange-red, interspersed with some grey scales; pericephalic scales orange-red, dorsally interspersed with some white, laterally mixed white and black; antenna black, scape ventrally dark grey. – Thorax: Dark grey with moderate pearly sheen, dorsally fine mottled with black; patagia dark grey with distinct sheen and orange-red lateral spot; scapular spot, inner margin of tegula and a fine medio-dorsal line of mesothorax orange-red; dorso-lateral scale tufts of metathorax white, basally mixed with black. Legs grey, internally paler; fore coxa laterally and distally orange-red, fore tibia dorsally with some orange-red scales; mid femur distally with small, mid and hind tibia medially with large and distally with small orange-red lateral patch. Forewing dark brownish-grey; costal area and discal cell densely, other wing parts sparsely mottled with pale grey scales; wing base black; discal spot, position of longitudinal area up to discal spot and costal margin distally orange-red. Hindwing with veins, margins and discal spot dark brownish-grey; costal margin interspersed with some orange. Underside of both wings with orange more extensive; forewing proximally and at costal area whitish; hindwing with small, black spot at anal vein base; fringes dark brownish-grey. – Abdomen: Tergites dark grey, mottled with some orange

scales; tergites 3 and 5–7 (female 5–6) finely interspersed with black; female with tergites 2 and 4–6 dorso-medially orange-red; sternites orange-red; all segments with narrow, grey posterior margin; anal tuft in male distally mixed dark grey and black, laterally orange, in female black, medially mottled with white. Genitalia as stated in the genus description.

#### Diagnosis

*Erismatica endopyra* is easily recognizable by the typical contrasted red and black pattern.

#### 5.6 *Halictina* **n. gen.**

Type species: *Melittia andraenipennis* Walker, 1856, designated here.

#### Etymology

Named after the bee genus *Halictus* Latreille, 1804 (Hymenoptera, Apidae), gender is feminine.

#### Description

Head: Haustellum well-developed and functional; labial palpus of medium length, slightly bent upward, covered with short, dorsally smooth, ventrally rough scales, second palpomere about 1.5 times the length of other palpomeres; frons smooth, somewhat broader than the diameter of an eye; antenna relatively short, not extending to forewing discal spot, distinctly clubbed with short apical hook, densely covered with scales except for sensitive area, which is restricted to the ventral side of the clubbed part (Figs. 86, 87), superficially the antenna resembles that of the Hesperidae (Papilionoidea). – Thorax: Strong, smoothly scaled, without raised, hair-like scales, dorso-lateral scale-tufts of metathorax very short; patagia and tegula inconspicuous. Legs strong; fore leg rather short; other legs of normal length; hind leg somewhat topping abdomen; mid- and hind tibia as well as hind tarsus densely tufted with long and broad scales; pairs of spurs of all legs with inner spur rather long, sticking out, outer spur inconspicuous, very short and appressed. Wings relatively short and strong; forewing with transparent areas, discal spot and apical area well-developed; hindwing with discal spot very small, margins narrow and tornus narrowed. Wing venation (Fig. 91) with forewing veins  $R_4$  and  $R_5$  stalked,  $M_3$ ,  $CuA_1$  and  $CuA_2$  arising approximated from cell tornus, hindwing vein  $M_2$  arising from costal third of cross vein,  $M_3$  from cell tornus and  $CuA_1$  somewhat proximal of it. – Abdomen: Short and strong, merely smooth, tergites 1–3 somewhat rough; anal tuft very short.

Male genitalia (Fig. 69): Tegumen-uncus complex narrow, in ventral view distally tapering; gnathos absent; tuba analis and subscaphium short; uncus laterally flattened, laterally and ventrally densely covered with simple setae.

Valva dorso-distally slightly upturned, distal part densely covered with simple, basad pointing setae; ventral margin subapically with prominent, dorso-distad directed protrusion which is covered with strong sclerotized, long and strait, distally hooked setae. Juxta small, shortly protruded, medio-basally strongly concave. Vinculum fused with tegumen forming a short and broad saccus with rounded tip. Phallus long and very narrow; coecum penis well developed; vesica proximally covered with numerous small spines.

Female genitalia (Fig. 79): Segment 8 and papillae anales rather short and broad; anterior apophyses somewhat shorter than posterior; ostium bursae ovoid; antrum well sclerotized, cup-like; ductus bursae long, narrow, gradually enlarged to form an ovoid bursa copulatrix without signum, which is sclerotized between antrum and ductus seminalis and slightly longitudinally folded.

#### Diagnosis

The genus *Halictina* can be defined by the following putative synapomorphies: (1) Thorax and abdomen of both sexes almost smooth, without hair-like scales; (2) antenna clubbed, ciliate area restricted to the clubbed part, ciliae very scarce and extremely short; (3) hindwing veins  $M_3$ ,  $CuA_1$  and  $CuA_2$  arising approximated nearby cell tornus; (4) gnathos absent; (5) ventral margin of valva with a prominent, distad directed protrusion, which is covered with strong sclerotized, long and straight, distally hooked setae; (5) antrum well sclerotized, cup-like.

The characters listed above, especially those of the antenna and the male genitalia are unique within Sesiidae, making *Halictina* easy to recognize. A close relationship to *Pseudomelittia* Le Cerf 1917, as mentioned by HAMPSON (1919), cannot be confirmed here. The type species of that genus, *P. berlandi* Le Cerf 1917, differs distinctly in numerous important characters. In particular the presence of hair-like scales of the body; the long and slender antennae, which are densely covered with rather long, merely appressed, but ventrally clearly protruding ciliae; the extremely broad hindwing tornus; the regularly spaced forewing veins  $R_4/R_5$  to  $CuA_2$  ( $M_3$ ,  $CuA_1$  and  $CuA_2$  approximated in *H. andraenipennis*); and the very different shape of the male genitalia (Fig. 69).

Another species from Cameroon, described in *Pseudomelittia* by GAEDE (1929), does not belong to Osmiini. Considering external characters it displays remarkable similarities with *Synanthedon pyrostoma* (Meyrick, 1927) from Uganda and *S. erythromma* Hampson, 1919 from Kenya. This species, *Synanthedon cingulata* (Gaede, 1929) **n. comb.**, is here accordingly transferred to *Synanthedon* Hübner, 1819.

#### Composition and distribution

Currently *Halictina* is represented by a single species, which may be endemic to southern Africa.

#### *Halictina andraenipennis* (Walker, 1856) **n. comb.** (Figs. 40–42, 69, 79, 86–87, 91)

*Melittia andraenipennis* WALKER, 1856: 69; BOISDUVAL 1875: 470.  
*Pseudomelittia andraenipennis*: HAMPSON 1919: 100; DALLA TORRE & STRAND 1925: 152; GAEDE 1929: 533; HEPPNER & DUCKWORTH 1981: 42; PÜHRINGER & KALLIES 2004: 45.

Type material examined: Holotype ♂ (Fig. 40) Cape [South Africa] (BMNH).

Other material examined: 1 ♀, Olifantsfontein, 16 Jan 1977 (TMSA); 2 ♂♂, South Africa, Free State, W Sasolburg, near Vaal river, 1445 m, 30 Dec 1992, leg. D. KROON (TMSA); 8 ♂♂, 9 ♀♀ (Figs. 41, 42), same locality, 9 Dec 2007, leg. D. BARTSCH (SMNS gen.-prep. 1298, Fig. 69; 1301, Fig. 79) (♂ antenna, Figs. 86, 87; wing venation Fig. 91) (SMNS).

#### Redescription

Medium sized compact species with distinct bee-like mimicry, wingspan 18–23 mm, forewing length 7–9 mm, antennal length 4 mm, body length 10–11 mm. – Head: Pale yellowish-white; labial palpus laterally and frons medially with some black scales; vertex and dorsal part of pericephalic scales mixed pale yellow and black, the latter laterally white; antenna black, segments of flagellum distally pale yellow, this coloration ventrally more extensive, sensitive area dark brown. – Thorax: Black, dorsally intensively mottled with pale yellow, dorso-lateral scale tufts of metathorax pale yellow. Fore leg pale yellow, more or less densely mottled with black; mid and hind leg with coxa, femur and tarsus black, mid femur dorsally and ventrally, hind femur ventrally pale yellow, mid tibia pale yellow, mottled with some black, hind tibia pale orange, latero-proximally black, scarcely mottled with orange, subdistally with narrow black ring, ventro-medially and -distally pale whitish-yellow; tarsomeres of all legs distally orange-yellow annulated, except for pure black first hind tarsomere; spurs of all legs pale yellow. Forewing black, densely mottled with pale yellow, discal spot black, apical area black with some pale yellow scales, distal margin narrow, pale orange-brown, transparent areas small, covered with translucent, yellow scales, external transparent area broader than high; hindwing hyaline, veins, margins and discal spot dark grey, wing base yellow with some yellow hair-like scales; fringes of all wings light grey, distally with orange tinge. – Abdomen: Black, tergites with posterior margin pale yellow but whitish caudally, laterally more or less orange suffused, proximal margin scarcely mottled with pale yellow; anal tuft black, proximally yellow to orange. Genitalia see genus description (Figs. 69, 79).

#### Biology and behaviour

According to D. KROON (pers. comm.) the hostplant is *Ipomoea bathycolpos* (Convolvulaceae). This herb is procumbent, growing on dry, sandy and grassy places.



The moth is strongly attracted to the flowers, which blossom during sunshine from the late morning hours to noon. Both sexes feed on nectar deep within the calyx, where they can be easily found. Eggs are deposited laterally on the sepals of the flower. Larval development may take place in the seed capsule; however, larvae have not as yet been found.

### 5.7 *Homogyna* Le Cerf, 1911

Type species: *Homogyna alluaudi* Le Cerf, 1911, by monotypy.

Literature: LE CERF 1911: 303; DALLA TORRE & STRAND 1925: 151, 174; GAEDE 1929: 531, 534; NAUMANN 1971: 16, 18; HEPPNER & DUCKWORTH 1981: 43; FLETCHER 1982: 56, 79; VÁRI et al. 2002: 67; PÜHRINGER & KALLIES 2004: 14, 44.

#### Diagnosis

*Homogyna* and its type species *H. alluaudi* from Kenya were redescribed by GORBUNOV & ARITA (1998a). Investigation of further species, including such from southern Africa, demonstrates *Homogyna* much more diverse than expected. Two main groups of species can be distinguished, taking structures of the male genitalia into account. This species groups are hereafter referred to as the “*H. pygmaea* group”, with *Homogyna alluaudi*, *H. pygmaea* (Rebel, 1899) from Yemen and *H. nama* from Namibia, and the “*H. xanthophora* group”, with *H. ignivittata*, *H. sanguipennis*, *H. xanthophora* and *H. dukei* from southern Africa. *H. pygmaea* group has the uncus without dorso-medial protrusion; the valva not specialized, and covered with simple setae. *H. xanthophora* group has the uncus dorso-medially more or less finger-like protruded; the valva with ventral margin proximally thickened, covered with a row of bifurcate setae and distally merging into a specialized, thorn-like protrusion. I refrain from the upgrading of these groups to generic or subgeneric levels since together they form a well-defined, apparently monophyletic assemblage. This is supported by the similar structures of uncus and phallus in males and of ovipositor in females, which may be synapomorphies for the genus. The position of *H. spadicicorpus* Prout, 1919 from Zambia is currently unclear. GORBUNOV & ARITA (1998b) excluded this species from *Homogyna* based on wing venation and the structures of the hind leg. Furthermore, *H. xanthomelaena* described here cannot be assigned to either group.

*Homogyna* is here defined as follows: (1) uncus in *H. xanthophora* group medially with narrow, distally ventrad bent, strongly pointed protrusion; in *H. pygmaea* group without such a protrusion; (2) subscaphium and tuba analis very long, often S-curved; (3) valva with ventral margin proximally broad and thick, distal half densely covered with, basad pointing, in *H. pygmaea* group simple, in *H. xanthophora* group bifurcate setae; ventral margin in *H.*

*pygmaea* group simple, in *H. xanthophora* group with proximal half broad and thick, terminating in a strong thorn-like, dorsad bent protrusion; (4) gnathos absent; (5) vinculum present, short; (6) phallus simple, distally regularly tapering, coecum penis reduced, vesica and manica densely covered with numerous fine spines; (7) female genitalia extremely telescopic, with strongly sclerotized, pointed papillae anales.

The two genera *Homogyna* and *Echidgnathia* form a characteristic and in all probability monophyletic group within the Osmiini. Autapomorphy of this group may be the presence of two narrow lateral protrusions of the uncus with a terminal tuft or group of long, bifurcate or short, thorn-like setae, which is unique within the Sesiidae. *Homogyna* differs from *Echidgnathia* by the absence of the gnathos, the normally developed vinculum and the less specialized valvae in male (gnathos large, vinculum reduced, valvae with weakly sclerotized dorso-distal part and strongly modified ventro-proximal part functionally replacing the reduced vinculum in *Echidgnathia*), and by the strongly sclerotized, pointed papillae anales and the scarcely sclerotized antrum in female (papillae anales simple, antrum strongly sclerotized in *Echidgnathia*).

Species of *Homogyna* and *Echidgnathia* can be distinguished immediately from the superficially similar members of *Erismatica*, *Coccophila* and *Hagnogyna* (Sesiini) by hindwing vein CuA<sub>1</sub>, which arises distinctly proximal of cross vein (from or near the cell tornus in the genera compared); moreover, species of *Hagnogyna* have the antenna bipectinate.

#### Distribution

Species of the *H. pygmaea* group are known from South-western and Eastern Africa and from the southern part of the Arabian Peninsula, that of the *H. xanthophora* group occur exclusively in southern Africa.

#### Key to the species of *Homogyna*

- 1 Forewing with well developed transparent areas (Fig. 55)....  
..... *H. xanthomelaena* n. sp.
- Forewing without transparent areas, or only external transparent area present (Figs. 44–54)..... 2
- 2 Forewing predominantly black, wing base with red spot (Fig. 44)..... 3
- Forewing predominantly red, margins and discal spot black (Figs. 46–54)..... 5
- 3 Forewing discal spot not colourfully marked (Figs. 44–45).  
..... *H. nama* n. sp.
- Forewing discal spot red..... 4
- 4 Forewing discal spot narrow, slightly cuneiform.....  
..... *H. alluaudi*
- Forewing discal spot large, round or oval..... *H. pygmaea*
- 5 Inner margin of forewing broad black (Figs. 50–54)..... 6
- Inner margin of forewing red or very narrow black (Figs. 46–49)..... 7
- 6 Forewing external transparent area present; hindwing discal spot absent, margins narrow (Figs. 52–54).... *H. dukei* n. sp.

- Forewing external transparent area absent; hindwing discal spot present, margins broad semi-hyaline (Figs. 50–51). ..... *H. xanthophora*
- 7 Forewing discal spot small, clearly separated from costal area; hindwing predominantly hyaline (Figs. 47–49). ..... *H. sanguipennis*
- Forewing discal spot large, fused with costal area; hindwing distally almost opaque (Fig. 46). ..... *H. ignivittata*

*Homogyna spadiceicarpus* Prout, 1919  
(Fig. 43)

*Homogyna spadiceicarpus* PROUT, 1919: 110; DALLA TORRE & STRAND 1925: 175; GAEDE 1929: 535; HEPPNER & DUCKWORTH 1981: 43; GORBUNOV & ARITA 1998a: 289 (incertae sedis); VÁRI et al. 2002: 67; PÜHRINGER & KALLIES 2004: 14 (incertae sedis).

This species was not examined in detail. No clear information on the number of types is given in the original description, which only refers to the male sex. Only a single male syntype has been found in the BMNH. It is rather well preserved, but lacks both antennae. Unfortunately, nothing is mentioned on their structure in the original description.

*Homogyna nama* n. sp.  
(Figs. 44, 45, 70)

**Holotype** ♂ (Figs. 44, 45): Namibia, vic. Rehoboth, Lake Oanob, hills N of the Lake, 1470 m, 2 Feb 2010, leg. D. BARTSCH (SMNS).

**Paratypes** (2): 1 ♂, same data as holotype, 31 Jan 2010 (SMNS gen.-prep. 3480, Fig. 70); 1 ♂, Namibia, Naukluft, 1580 m, 9 Feb 2010, leg. D. BARTSCH (SMNS).

Etymology

This species is named after the Nama people in whose homeland it occurs.

Description

**Male.** Wingspan 16–17 mm, forewing length 6.0–7.5 mm, antennal length 4.0–4.5 mm, body length 8–9 mm. – Head: Labial palpus white, dorso-distally grey; frons white, medially silver-grey; vertex black; pericephalic scales dorsally mixed white and black, laterally white; antenna black, ventrally densely mottled with whitish scales, scape ventro-basally white. – Thorax: Dorsum black; patagia with intensive metallic gloss, laterally with white patch; scapular spot at wing base white; tegula very scarcely covered with white hair-like scales; mesothorax cranially and caudally with indistinct rusty, medio-dorsal patches. Wings black; forewing with dark greyish tinge, small rusty basal patch and narrow white costal margin; hindwing proximally of crossvein hyaline,

distally opaque. Fore leg dorsally black, ventrally white, more or less densely mottled with dark grey; other legs black, tibiae medially and distally as well as tarsomeres proximally annulated with white; hind coxa and lateral part of hind femur mottled with white; spurs of all legs whitish-grey. – Abdomen: Black; tergite 2 medio-dorsally with orange-rusty bar, tergites 4–7 medio-dorsally with orange-white patches, tergite 7 further with broad white posterior margin; scales of anal tuft with white tip. Genitalia (Fig. 70) as stated in the diagnosis of the genus (*H. pygmaea* group). Valva ovoid, somewhat elongate, dorsally regularly curved; phallus straight, distad moderately tapering, manica and vesica densely covered with numerous fine spines.

Female unknown.

Diagnosis

*Homogyna nama* n. sp. is distinguishable by the almost completely black forewings, the distally black hindwings and the unique coloration of the abdomen. Currently it is the only known member of the *H. pygmaea* group, and therefore the closest relative of the type species *H. alluaudi*, from southern Africa. It is easily separable from *H. alluaudi* and *H. pygmaea* by the absence of a forewing discal spot, the less transparent hindwings, and the lack of abdominal annulations. The male genitalia differ from *H. alluaudi* by the slightly more medio-dorsally upward bent uncus and the ovoid, not triangular valva (the male of *H. pygmaea* is unknown). Members of the *H. xanthophora* group have the forewings red with discal spot, cubitus vein, costal and distal margin more or less intensively black, the abdomen more or less densely mottled with white and, except for *H. ignivittata*, the hindwings more extensively transparent.

*Homogyna ignivittata* Hampson, 1919  
(Figs. 46, 71)

*Homogyna ignivittata* HAMPSON, 1919: 110; DALLA TORRE & STRAND 1925: 175; GAEDE 1929: 535; HEPPNER & DUCKWORTH 1981: 43; GORBUNOV & ARITA 1998a: 289; VÁRI et al. 2002: 67; PÜHRINGER & KALLIES 2004: 14.

Type material examined: Holotype ♂ (Fig. 46) South Africa, Transvaal, Pretoria, 6 Feb 1914, leg. A. J. T. JANSE (BMNH).

Other material examined: 2 ♀♀, South Africa, Elandshoek, 20–25 Nov 1947, A. L. CAPENER; 1 ♀, South Africa, Transvaal, Argent., 24 Dec 1939, A. L. CAPENER; 1 ♀, Swaziland, Budungu Mines, 1 Sep 1993, N. J. DUKE; 1 ♂, South Africa, unknown locality (TMSA gen.-prep. 3826, Fig. 71) (all TMSA).

Diagnosis

*Homogyna ignivittata* is the first of four species of the *H. xanthophora* group (further *H. sanguipennis*, *H. xanthophora* and *H. dukei*), which have the forewings more or

less orange or red. It can be separated by having the black forewing discal spot smallest, but most clearly defined; the hindwings distally opaque (hyaline in the species compared), the thorax dorsally intensively reddish suffused (less intensive in *H. sanguipennis*, without red in *H. xanthophora* and *H. dukei*); and the abdomen more intensively mottled with white. Differential characters of the male genitalia within this group are: uncus and thorn-like protrusion of valva long in *H. ignivittata* and *H. dukei*, short in *H. sanguipennis*; row of setae of ventral margin of valva dense in *H. ignivittata*, scanty in *H. dukei*, very dense in *H. sanguipennis*; saccus short in *H. ignivittata* and *H. sanguipennis*, very short in *H. dukei*, phallus almost equal in diameter, distally slightly narrowed with five thorns regularly increasing in size in *H. ignivittata*, very broad proximally, gradually tapering, narrow distally, vesica with row of thorns in *H. sanguipennis*, equal in diameter, ventro-distally with strong thorn, and vesica with numerous spines in *H. dukei*. The male genitalia of *H. xanthophora* are unknown.

#### Biology and behaviour

Unknown. An image found in the internet may show a specimen resting on a flower of *Hibiscus pusillus* (<http://joeleagle.files.wordpress.com/2013/01/hibiscus-pusillus.jpg>).

#### *Homogyna sanguipennis* (Meyrick, 1926) (Figs. 47–49, 72, 80)

*Paranthrene sanguipennis* MEYRICK, 1926: 267; GAEDE 1929: 534; HEPPNER & DUCKWORTH 1981: 24; VARI et al. 2002: 67.

*Homogyna sanguipennis*: GORBUNOV & ARITA 1998a: 289; PÜHRINGER & KALLIES 2004: 14.

Type material examined: Lectotype ♂ (Fig. 47), South Africa, Natal, Weenen, Oct 1924, leg. THOMASSET (BMNH) (designated here). – Paralectotype ♀, same data (BMNH).

Other material examined: 3 ♂♂ (Fig. 48), 14 ♀♀ (Fig. 49), South Africa, KwaZulu-Natal, Ntinini, 1070 m, 29 Nov–2 Dec 2010, leg. D. BARTSCH, at flowers of *Hibiscus pusillus* (♂, BARTSCH gen.-prep. 2013-05, Fig. 72; ♀, 2013-06, Fig. 80) (CDB).

Two syntypes, a male and a female, are mentioned in the original description of MEYRICK (1926). Although their conspecificity is likely due to the similarity of the reddish coloured species within *Homogyna*, this cannot be easily proven. To ensure stability of the nomenclature I therefore select the before mentioned male as the lectotype.

#### Diagnosis

Considering external characters, *Homogyna sanguipennis* appears very similar and may well be confused with *H. ignivittata*. It is separable by the less reddish suffused thorax, the less whitish mottled body, the larger forewing

discal spot, which is somewhat fused with the black costal area, the less prominent brownish cubitus veins, and the more extensively hyaline hindwings. For differentiation of the male genitalia (Fig. 72) from related species see *H. ignivittata*. The female has the antrum straight, long and narrow (slightly S-curved in *H. xanthomelaena*; enlarged in *H. dukei*) and has, uniquely within the genus, the corpus bursae with a narrow, longitudinal signum (Fig. 80).

#### Biology and behaviour

A series of three males and 14 females from Ntinini was captured by the author in the late morning between 10 and 12 h on dry, regularly burned grassland. The moths were exclusively visiting the yellow flowers of *Hibiscus pusillus* (Malvaceae) and could be observed feeding nectar or resting on the petal. Mating was also observed to take place on these flowers. Specimens that had been disturbed flew up immediately, but landed after a short flight on one of the neighbouring *H. pusillus* flowers. Various artificial pheromones, which were used in the habitat did not attract any males.

*Hibiscus pusillus* is strongly suggested to be the host plant of this species. However, despite intensive search no eggs could be found. I assume that deposition of eggs most likely takes place deep in the calyx or, even more probably, directly within the verdant seed head, which is suggested by the strongly pointed and sclerotized ovipositor of the female. *Hibiscus pusillus* has a woody rootstock and shoots annually. It is a pioneer in disturbed places and occurs from the Cape to Mozambique and westwards through Botswana to Namibia.

#### *Homogyna xanthophora* (Hampson, 1910) (Figs. 50, 51, 81)

*Tinthia xanthophora* HAMPSON, 1910: 150.

*Homogyna xanthophora*: HAMPSON 1919: 111; GAEDE 1929: 535; HEPPNER & DUCKWORTH 1981: 43; VARI et al. 2002: 67; GORBUNOV & ARITA 1998a: 289; PÜHRINGER & KALLIES 2004: 14.

Type material examined: Holotype ♂ (Fig. 50), South Africa, Natal, Malvern, Dec 1907, leg. BARKER (BMNH).

Other material examined: 1 ♀, South Africa, KwaZulu-Natal, Utrecht, 1250–1320 m, 8 Dec 2010, leg. D. BARTSCH (Fig. 51) (BARTSCH gen.-prep. 2015-02, Fig. 81) (CDB).

#### Diagnosis

*H. xanthophora* differs from all congeners by the pure black, not reddish suffused thorax, the dark blackish-brown forewing, with orange-red markings along inner margin, and proximal and distal of discal spot, the large, black forewing discal spot, fused with the black costal area and the black cubitus vein, the hyaline hindwings



with broad distal margin, and black scales between veins  $CuA_1$  and  $CuA_2$ , and the abdomen with indistinct whitish annulations on tergites 2, 4, 6 (and 7 in male). The genitalia of the male are unknown, those of the female are similar to the following *H. dukei*, the ductus bursae rather short; the antrum ovoid enlarged, membranous; and the bursa copulatrix ovoid, without signum (Fig. 81).

*Homogyna dukei* n. sp.

(Figs. 52–54, 73, 82)

**Holotype** ♂ (Figs. 52, 53): South Africa, Cape Province, East London, Buffalo Pass, 18 Nov 1979, leg. N. J. DUKE (BARTSCH gen.-prep. 2009-11, Fig. 73) (TMSA).

**Paratypes** (4): 1 ♂, 1 ♀, in copula, same data as holotype (♀ Fig. 54), 19 Sep 1982 (♀ BARTSCH gen.-prep. 2009-12, Fig. 82); 2 ♀♀, [South Africa, Eastern Cape, Port Elizabeth] Algoa Bay, 26 Nov 1908, leg. BRAUNS (all TMSA).

Etymology

This beautiful species is dedicated to the late N. J. DUKE (Mbabane, Swasiland) one of the collectors of the type series.

Description

**Male.** Wingspan 16–20 mm, forewing length 7.0–8.5 mm, antennal length 4.0–5.5 mm, body length 9.5–10.5 mm. – Head: Labial palpus white, second palpomere laterally with narrow black stripe, third palpomere dorsally and laterally black; frons white, medially black; vertex black; pericephalic scales white, dorsally mixed with black; antenna black, ventrally scarcely mottled with white, segments of flagellum with narrow white ventro-distal margin. – Thorax: Glossy black; patagia with strong gloss; mesothorax dorso-cranially with white, hair-like scales; distal part of tegula and scapular-spot at forewing base white. Fore leg with coxa white, basally dark grey; femur dorsally dark grey, ventrally white; tibia dorsally black with narrow white spot medially, ventrally white. Mid and hind leg black, femur ventrally with long, white, hair-like scales; tibia with white ring medially and some white scales distally; tarsomeres of all legs proximally white, distally black; spurs white. Wings black; transparent areas more or less densely covered with pale orange scales, partially hyaline, particularly external transparent area, which consists of 5 cells; forewing discal spot and apical area broad, seamlessly fused with costal and anal area; hindwing hyaline, veins and distal margin fine brownish-grey, discal spot reduced; fringes of all wings grey, at hindwing dorsum white. – Abdomen: Black with white spots dorso-laterally on tergite 2, dorso-medially on tergites 4, 5 and 7; tergite 4 with indistinct and tergite 7 with distinct white posterior margin; sternites 4–7 whitish; anal tuft black, distally and ventrally white. Genitalia (Fig. 73) as specified in the diagnosis of the genus (*H. xan-*

*thophora* group). Uncus long and thorn-like; valva with thorn-like, ventral protrusion rather long, ventral margin covered with a row of about 15, partially shortly bifurcate setae; saccus very short; phallus equal in diameter, with a single strong thorn ventro-distally, vesica covered with numerous fine spines.

**Female.** More compact than the male. – Thorax: Fresh specimens with distinct orange tinge; margins of tegula and a dorso-caudal spot of mesothorax white. Orange forewing markings less extensive, but more intense; hindwing margins broader. – Abdomen: White spots dorso-laterally on tergites 2 and 3 and dorso-medially on tergites 4–6; segments 4 and 7 with dorsally narrow, laterally broad, ventrally interrupted white posterior margins; sternites and anal tuft black, the latter dorso-distally white. Genitalia (Fig. 82) similar to *H. xanthophora*, but ductus bursae shorter, antrum round and enlarged, membranous; bursa copulatrix longitudinal-ovoid, without signum.

Diagnosis

*Homogyna dukei* n. sp. is very similar to *H. xanthophora*. Using external characters, *H. dukei* can be best separated by the less extensive, rather clearly defined orange coloration of the forewing, the partially hyaline external transparent area, the reduced hindwing discal spot, the – especially in male – much smaller hindwing margins (orange forewing coloration not clearly circumscribed; external transparent area opaque throughout; hindwing discal spot well developed in *H. xanthophora*), and the black second abdominal sternite (whitish in *H. xanthophora*). *H. ignivittata* and *H. sanguipennis* can be distinguished by the coloration of the forewing, which is more extensive red and lacks the broad, black apical area. For differentiation of the male genitalia from related species see *H. ignivittata*. The female genitalia differ from that of *H. sanguipennis* and *H. xanthomelaena* by the membranous, round, enlarged ductus bursae (membranous, long and slender in *H. sanguipennis*; slightly enlarged with sclerotized signum in *H. xanthomelaena*). *H. sanguipennis* differs further by the presence of a signum of the bursa copulatrix.

Biology and behaviour

Unknown. A male, feeding nectar on flowers of *Hibiscus aetiopicus* (Malvaceae), which may possibly be the host plant, is figured at <http://www.ispotnature.org/node/582446?nav=related>.

*Homogyna xanthomelaena* n. sp.

(Figs. 55, 56, 83)

**Holotype** ♀ (Figs. 55, 56): Namibia, NW Okahandja, Farm Ongombeanavita, 9 Nov 1958 (TMSA).

Paratypes (3): 2 ♀♀, same data as holotype; 1 ♀, Namibia, Abachaus, 10 Mar 1952 (BARTSCH gen.-prep. 2013-13, Fig. 83) (all TMSA).

#### Etymology

From ancient Greek xanthos (= yellow) and melas (= black).

#### Description

Female. Wingspan 18–20 mm, forewing length 7.7–8.5 mm, antennal length 6.5 mm, body length 10–11 mm. – Head: Labial palpus white, first palpomere distally with narrow black ring, other palpomeres dorsally mottled with black; frons glossy white, medially dark grey; vertex black; pericephalic scales white; antenna black. – Thorax: Black; patagia black with blue-metallic gloss, laterally orange-yellow; tegula caudally, mesothorax (except for medial part) dorsally, and metathorax dorso-medially orange-yellow; dorso-lateral scale tufts of metathorax pale grey. Legs black; fore coxa cream-coloured; mid and hind femur ventrally with white, long hair-like scales; mid tibia ventrally with orange-yellow medial patch and some orange-white distally; hind tibia medially and distally with broad orange-yellow ring; tarsomeres of all legs proximally white; spurs white, ventrally black. Wings black; forewing with costal area yellow, transparent areas well developed, longitudinal one reaching down to discal spot, external one consisting of 6 cells, discal spot broad, apical area narrow; hindwing hyaline, discal spot reduced; fringes of all wings pale grey, at hindwing dorsum white. – Abdomen: Black; tergites 1–3 dorso-medially densely mottled with orange-yellow, remaining tergites orange-yellow, sublaterally mottled with black; anal tuft dorsally and laterally orange-yellow, ventrally black. Genitalia (Fig. 83) as stated in the genus diagnosis. Papillae anales and segment 8 rather broad; ductus bursae rather short, somewhat enlarged, S-curved, with narrow sclerotized signum; bursa copulatrix ovoid, clearly separated, without signum.

Male unknown.

#### Diagnosis

*Homogyna xanthomelaena* n. sp. occupies a somewhat isolated position within the genus. The well-developed transparent areas of the forewing and the orange-yellow pattern of the body are unique features. Superficially, *Pseudomelittia berlandi* from Tanzania is somewhat similar. It differs by the much broader hindwing dorsal area, the narrower antenna, the absence of orange-yellow markings and the presence of a narrow longitudinal scale line of the anterior transparent area of the forewing. The female genitalia are characterized by the rather short, somewhat enlarged and slightly S-curved ductus bursae with small, sclerotized signum (ductus bursae in congeners without sclerotization, long and narrow in *H. sanguipennis*, short and enlarged in *H. xanthophora*).

#### 5.8 *Echidgnathia* Hampson, 1919

Type species: *Tinthia vitrifasciata* Hampson, 1910, by original designation.

Literature: DALLA TORRE & STRAND 1925: 151; GAEDE 1929: 531; NAUMANN 1971: 16; HEPPNER & DUCKWORTH 1981: 43; FLETCHER 1982: 56; VÁRI et al. 2002: 67; PÜHRINGER & KALLIES 2004: 44.

#### Diagnosis

*Echidgnathia* is here defined by the following characters: (1) gnathos present, very large; (2) subscaphium and tuba analis short; (3) vinculum reduced; (4) valva highly specialized, ventro-proximally sclerotized and strongly modified, taking over the function of the vinculum, dorso-distally weak with scarce hairs; (5) phallus simple, distally somewhat tapering, coecum penis reduced, vesica with strong sclerotized thorns; (6) female genitalia with prominent, well sclerotized antrum. The absence of the vinculum and the extreme specialization of the valva may well be synapomorphic.

For differentiation from related genera see diagnosis of *Homogyna*.

#### Composition and distribution

Currently *Echidgnathia* is represented by two species which both occur in southern Africa, but some further, undescribed species are known from eastern Africa, northwards to Somalia.

#### *Echidgnathia khomasana* Freina, 2011 (Figs. 57, 74)

Type material examined: Holotype ♂ (Figs. 57, 74) Namibia, 30–40 km ENE Omaruru, 1500 m, 21–23 Jan 1998, leg. J. J. DE FREINA (CMWM, later in ZSM).

*Echidgnathia khomasana* was described from a single somewhat descaled male. The specimen was dissected and the abdominal segments were discarded, the phallus was damaged with the vesica lost. Nevertheless, *E. khomasana* is easily distinguished from *E. vitrifasciata* by the much paler, almost uniformly grey forewings, which have a narrow black discal spot. The male genitalia (Fig. 74) differ by the long, bifurcate setae of the two lateral protrusions of the uncus (short, thorn-like in *E. vitrifasciata*), the distally broad, spatulate gnathos (narrow, curved in *E. vitrifasciata*) and the dense, ventro-proximal patch of setae of the valva (absent in *E. vitrifasciata*). Similar bifurcate setae of the uncus are present in *Homogyna* and may represent a convergent development in the two genera.

*Echidnathia vitrifasciata* (Hampson, 1910)  
(Figs. 58–60, 75)

*Tinthia vitrifasciata* HAMPSON, 1910: 150.

*Echidnathia vitrifasciata*: HAMPSON 1919: 97; DALLA TORRE & STRAND 1925: 151; GAEDE 1929: 531; HEPPNER & DUCKWORTH 1981: 43; VÁRI et al. 2002: 67; PÜHRINGER & KALLIES 2004: 44.

Type material examined: Syntypes 3 ♀♀ (Fig. 58), Mashonaland, Umtali [Zimbabwe, Mutare], Dec 1900 (BMNH).

Other material examined (conspecificity questionable): 1 ♂ (Figs. 59, 60), South Africa, KwaZulu-Natal, vic. Hluhluwe, Farm “Sydafrica”, 30–100 m, 7 Dec 2010, leg. D. BARTSCH (BARTSCH gen.-prep. 2013-07, Fig. 75) (CDB).

I have no doubt about the conspecificity of the type series and refrain from the designation of a lectotype. Males of *E. vitrifasciata* are unknown. Four badly damaged females in TMSA, which have destroyed abdomina, may belong here but are not taken into account. A single, somewhat descaled male from KwaZulu-Natal (Figs. 59, 60) is also not considered, as its conspecificity is not clear. This specimen is similar to that of the type series, but differs by the lack of the yellowish-white, dorso-medial band of the abdomen.

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