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Studies on African Crambidae I- a new genus and species from Africa (Pyraloidea: Crambidae: Spilomelinae)

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Abstract: A new genus and species is described from a series of specimens collected in the broad vegetation band from Mali to the Kenyan coast. It is placed close to *Metasia* (Spilomelinae) because of the bilobed uncus in the male genitalia. It seems to be linked to drier habitats.

Key words: *Metasibotys* **gen. nov.**; *Metasibotys guineasoudanensis* **sp. nov.**; genitalia, wing venation, tympanal organs.
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INTRODUCTION

Compared to the other zoogeographical regions, the Crambidae from Africa were studied late in history. This explains the fact that most species were placed in existing genera with type species from other zoogeographical regions. And although there are a number of cases of a typically "Old World" distribution, as expected, quite a number of endemics for Africa do exist. A number of studies have been done in the last decades with a checklist for the southern African region (Vári *et al.*, 2002; Krüger, 2020) and for Madagascar (Viette, 1990) but nothing covers the rest of the continent. The website Afromoths is a start but is based on literature. All this complicates the study of the African Crambidae. Over the last forty years the author was able to study material in museums that hold important Crambidae collections: The Natural History Museum, London, UK; Musée d'Histoire Naturelle, Paris, France; Museum für Naturkunde, Berlin, Germany; Museum d'Histoire Naturelle, Genève, Switzerland; Royal Museum for Central Africa, Tervuren, Belgium; National Museum of Kenya, Narobi, Kenya; Ditsong National Museum of Natural History, Pretoria, RSA. A database with images of adults and diagnostic characters was developed, first for African material but at a later stage the database was extended to include the world fauna of this group because of the problems mentioned above. At the same time a number of advances were made on the higher classification of the Pyraloidea and Crambidae (Solis & Maes, 2002; Mally, 2019). The present series of papers will look at the identification and classification at lower levels (genera, species) of taxa mostly from the African continent and in relation to the world fauna.
The species dealt with here came to the author's attention while studying material from the drier areas from Northern Cameroon (Faro National Park). It was quite rare and irregular on the light traps and the genitalia did not fit any known genus from Africa or beyond. When a large series of specimens from other localities were studied it became apparent that this species seems to occur in a broader belt from Western Africa towards the coastal forests of Kenya.

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METHODS AND MATERIALS

Genitalic dissections

Genitalia were dissected following Maes (1985) except that now the abdomen is opened lateraly to show better the characters on sternites and tergites.

Wing venation

The wings were cleaned and stained following a method described by Zimmerman (1978)

Digital processing of images

Images of the adults were taken with a Canon Eos 5D Mark IV with a Macro lens EF 100mm 1:2.8 using Helicon remote (ver. 3.9.11M) and the stacking of images with Helicon focus (ver.8.1.0).

Acronyms and abbreviations

ABSRC: AgroBioSys Reference Collection, Wetteren, Belgium.
KVNM: K.V.N. Maes
MFN: Museum für Naturkunde, Berlin, Germany
MV: Mercury vapour

RESULTS

Crambidae Latreille, 1810
Spilomelinae Guenée, 1854

Description of new genus

Metasibotys **gen. nov.**
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Gender: male.

Tribe (provisional): Spilomelini

Type species: *Metasibotys guineasoudanensis* **sp. nov.**

Head: Frons rounded; maxillary palps above base labial palps, scaled; labial palps porrect, triangular, length about 1.5 times the diameter of the eye; antenna filiform, dorsally scaled, ventrally with short setae, length of setae about double those of males.

Wing venation: (Fig. 1 ♂) Wings triangular. Forewing: Sc from the base of the thorax, R1 from the middle of the Rs stem, R2 from the upper corner of the cell as R3+4 and R5, R3+4 fused R5 for a short distance, R3 before angle of fore wing, R4 in angle of fore wing; R5 parallel with M1; M1 from the middle of the transversal vein of the cell in males, closer to the upper angle in females, curved ventrally near its base in males, straight in females; M2, M3 and CuA1 from the lower angle of the cell, separated at their base; CuA2 close to lower angle of cell; rounded zone devoid of scales between R5 and M1 near the transversal vein in the cell of male specimens, absent in females. Frenulum simple in male, double in females. Retinacumum consisting of a series of long scales near the base of the Median stem. Hind wings as typical Pyraustinae: Sc+R1 anastomosed for about half its length beyond the upper angle of the cell; R5 from Sc+R1; M1 from upper angle of the cell; M1, M2 and CuA1 from lower angle of the cell, separated at the base; CuA2 near lower angle of cell about parrale to upper angle of cell; CuP, A1 and A2 from base of hind wing.

Figure 1 – *Metasibotys guineasoudanensis* sp. nov. ♂. Wing venation – above: forewing; below: hind wing. PT 2129.

Tympanal organs: (Fig. 2 ♀) praecinctorium bilobed, medium size; tympanal organs invaginated; fornix tympani narrow with a well developed processus tympani; saccus tympani very small, shallow; zona glabra tympani small; venula prima narrow continuing towards the base of the praecinctorium, venula secunda absent.

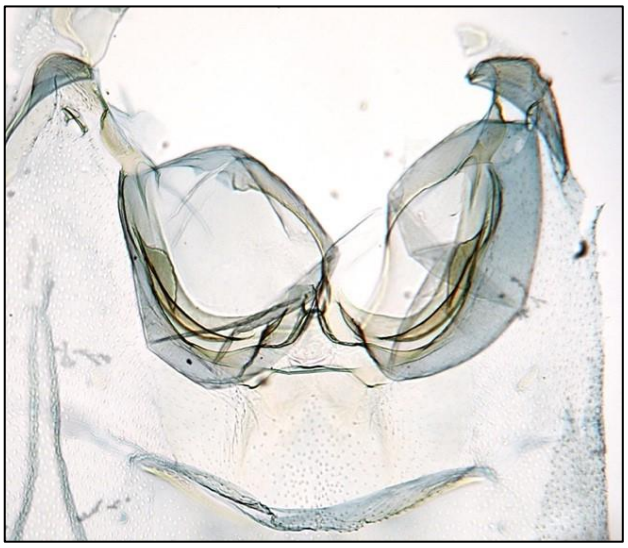

Figure 2 – Tympanal organs of *Metasibotys guineasoudanensis* sp. nov. ♀ K. Maes Gen.Prep. nr. 1848.

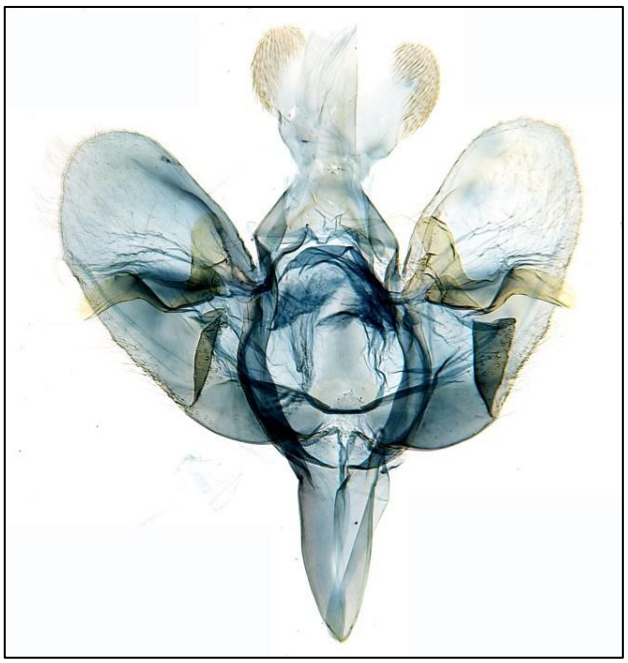

Figure 3 –*Metasibotys guineasoudanensis* sp. nov. holotype ♂ genitalia. Gen.Prep. nr. 1119, KVNM.

Figure 4 – *Metasibotys guineasoudanensis* sp. nov. holotype ♂ aedeagus. Gen.Prep. nr. 1119, KVNM.

Male genitalia: (Figs 3–4) Uncus bilobed, dorsally with flattened bifurcated setae; tegumen dorsally narrow, ventrally more widened, saccus long and pointed; juxta as a narrow shield: ventrally slightly biloded, dorsally as one piece; valva rounded with a large sella from the dorsal edge to the ventral edge consisting dorsally of a large flap,

ventrally of a more pointed extension passing beyond the ventral edge of the valva, sacculus valva with a large rounded sclerotized flap; aedeagus simple, tubular, cornutus consisting of a series of simple triangular plates and several well-developed spines, vesica slightly covered with minute plates.

Figure 5 – *Metasibotys guineasoudanensis* sp. nov. ♀ genitalia. Gen.Prep.nr. 2130, KVNM.

Female genitalia: (Fig. 5) Papillae anales well developed, covered with long and short setae; apophyses anteriores and posteriors of about equal length; ostium bursae membranous with two patches of small spines; ductus bursae as a broad S-shaped sclerotization; corpus bursae membranous with a small triangular signum composed of small spines.
Diagnostic characters: Externally the specimens have a typical "Pyraustinae" habitus, but the genitalia place it in the Spilomelinae. (valva, uncus; bursa copulatrix). The bilobed uncus and the complicated sella on the simple rounded valva of the male genitalia resemble typical *Metasia* species, but it is different in the base of the uncus, and the structure of the sella on the valva, which has a dorsal fold with ventral extension, second fold near inner part of ventral side and.a strongly sclerotised part near the costa which is lacking in true "Metasia" species. The female genitalia have a strongly sclerotised ductus bursae. Sexual dimorphism with androconical scaling in the male forewing near the cell is also unique to this genus and lacking in *Metasia* species.
Distribution: Currently only known from the type species, which occurs from Mali to the Kenyan coast. Basically south of the Sahara and north of the rainforest belt.
Host plant: Not known.
Etymology: The name is composed of the genus name "Metasia" and the old Pyralid name "Botys".

Description of new species

***Metasibotys guineasoudanensis* sp. nov.** (Figs. 1–7).
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Figure 6 – *Metasibotys guineasoudanensis* sp. nov. holotype ♂

Type material:

Holotype: ♂: **Cameroon**, North Prov. near Hippo camp, Mayo Konoué: 08°22'29.0"N; 12°51'16.0"E 295m. Black/MV lights 27–30.xi.2003 leg. KVNM. Gen.Prep. nr. 1119 ♂ABSRC1000499, KVNM.
Paratypes: 1♀: **Kenya**, Rift Valley, Lake Baringo Country Club: 0°38′N; 35°05′E; 1050m. MV light. 5.vii.1999. leg. KVNM. Gen.Prep. ♀ABSRC1002395, KVNM. 1♂ **Kenya** Coast, Watamu, "Mrs Simpson": 3°23′S; 39°59′E; 5m. MV light. 10–13.vii.1999. leg. KVNM, Gen. Prep. ♂ABSRC1002394, KVNM. 1♀ as above. Gen.Prep.nr. 2130. Wings ♀ABSRC1002393, KVNM. 1♀: **Kenya**

Figure 7 – *Metasibotys guineasoudanensis* sp. nov. ♀

Coast, Watamu MV light 10.iii.1989. leg. R. Schouten 108. (MFN). 1♂: **Kenya**, Kilifi Coastal forest edge: 3°37′S; 39°50′E; 75m. MV light. 3.i.1997. leg. KVNM, Gen.Prep. nr. 1580 ♂ABSRC1002382, KVNM. 1♀ as above Gen.Prep.nr. 1581 ♀ABSRC1002383, KVNM. 1♂ as above Gen.Prep.nr. 2129 Wings ♂ABSRC1002385, KVNM. 1♂ as above Gen.Prep. ♂ABSRC1002387, KVNM. 1♂ as above Gen.Prep. ♂ABSRC1002388, KVNM. 1♂ as above Gen.Prep. ♂ABSRC1002389, KVNM. 1♂: as above. Gen.Prep. ♂ABSRC1002390, KVNM. 1♂: as above. Gen.Prep. ♂ABSRC1002391, KVNM. 1♂: as above. (MFN). 1♀: **Mali**, Banamba 3.xii.1991. At light. leg. J.Beerlink., Gen.Prep. ABSRC1002384, KVNM. 1♀: as above. Gen. Prep. nr. 1583, ♀ABSRC1002381, KVNM. 1♂: **Cameroon**, North Prov., Hippo Camp, near Faro N.P. 8°23′36.4″N; 12°49′26.03″E; 297m. Black/MV lights. 7–12.xii.2021. leg. KVNM. Gen.Prep. ABSRC1002358, KVNM. 1♀: as above. Gen.Prep. ABSRC1002359, KVNM. 1♂: as above. By hand. 10.xii.2019. Gen. Prep. nr. 2127 ♂ABSRC1001486, KVNM. 1 ♀: **Cameroon**, North Prov., Hippo Camp, bordering Faro River and Voko. 8°26′44.78″N; 12°47′06.04″E; 300m. MV Light. 22.i–5.ii.2019. leg. KVNM. Gen. Prep. nr. 1848, ♀ABSRC1000485, KVNM. 1♀: as above. Gen. Prep. ♀ABSRC10001485, KVNM. 1♂: **Cameroon**, North. Prov., Hippo Camp, near Faro N.P. 8°23′36.4″N; 12°49′26.03″E; 297m. Black/MV lights. 20.i.2021. leg. KVNM. Gen. Prep. ♂ABSRC1001562.

Description of holotype (Fig. 6)

Head: frons rounded, straw-brown-yellow with some white scaling on the dorsal margins of the compound eyes, base of antenna (scape) and dorsal side of the antenna; maxillary palps neat base labial palps, terminally tufted, labial palps, triangular, porrect, dorsally straw-brown-yellow, ventrally white.
Thorax: Forewing straw-brown-yellow, triangular, darker near the costa, ligth coloured near the inner edge; antemedial fascia brown, slightly curved, postmedial fascia same color, slightly bend outwards; small reniform stigma on transversal vein of cell; termen combined with dark and light-yellow scales; hind wings light yellow with some darker scales near the outer parts of the wing, no wing markings. Underside thorax white; fore legs with some brown scaling on the dorsal side of femur and tibia; middle legs with straw-brown-yellow scaling on dorsal side of tibia.
Tympanal organs: as for the genus.
Male genitalia: as for the genus.
Female genitalia: as for the genus.
Distribution: Mali, Cameroon, Kenya
Host plant: unknown.
Etymology: the name refers to the Sudan-guinea savanna biomes South of the Sahara.
Remarks: As for the genus, but this species has sexual dimorphism in the wings: the male has a zone devoid of scales near the transversal vein of the forewing. This is lacking in the females.

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