

***Thivolleo*, a new genus with two new species from Africa (Lepidoptera: Pyraloidea, Crambidae, Pyraustinae)**

Koen MAES

AgroBioSys Intl., Kleine Smetledestraat 192, B-9230 Wetteren, Belgium.

Email: kvmaes@belgacom.net

***Thivolleo*, a new genus with two new species from Africa (Lepidoptera: Pyraloidea, Crambidae, Pyraustinae).**- *Thivolleo* gen. n. is erected for three species, one known: *T. xanthographa* Hampson, 1913 comb. n., and two new species: *T. albicervix* sp. n. and *T. meruensis* sp. n. The three species occur in Africa. The genitalia and adults of all species are illustrated. The genus is tentatively placed near *Pronomis* Munroe & Mutuura, 1968.

Keywords: *Thivolleo* new genus - new species - Pyraustinae - Africa.

INTRODUCTION

The Pyraloidea of the African continent are poorly studied. The number of species when compared to other continents is quite low (number of valid species of Crambidae: African region: 1431; Oriental region: 2408; Palaearctic region: 1695; and Neotropical region: 2888 [personal database]). History shows that the African continent was explored late when compared to the exploration of other continents. It happened also when the peak of natural history explorations started to decline. This may explain the low number of known species.

The same is applicable for the subfamily Pyraustinae of Africa; at the moment I counted only 147 known species compared to 432 in the Palaearctic region, 384 in the Oriental regions, and 306 in the Neotropical region. It is possible that in the Palaearctic and Oriental regions the numbers are too high because of the inclusion of a number of Spilomelinae, but the fauna of the Neotropical region is better studied (Munroe, 1995) and the figure is more reliable. The African region has a number of typical Old World genera such as *Crypsitya* Meyrick, 1894, *Euclasta* Lederer, 1855, *Hyalobathra* Meyrick, 1885, *Placosaris* Meyrick, 1897, to name only a few, but also a number of endemics such as *Ethiobotys* Maes, 1997, *Paschiodes* Hampson, 1913, *Pseudognathobotys* Maes, 2001, *Herpetobotys* Maes, 2001, and *Cybalobotys* Maes, 2001. This new genus is also restricted to Africa and it contains three species. Based on the morphology of the male genitalia *Thivolleo albicervix* sp. n. and *T. xanthographa* (Hampson, 1913) are most closely related. They also both occur in the forested areas of Africa. The third species, *T. meruensis* sp. n. is more distant from the former two because of the rectangular uncus and the more elongated valva, but the general pattern of the male genitalia is identical. This third species is restricted to the drier areas of East Africa.

Several museums were so kind to put material at my disposal and numerous collecting trips added to a better knowledge of the distribution patterns of this group.

This paper is the result of research on the Crambidae of Africa that has been ongoing for several years (Maes, 1996 a, b; 1997, a, b; 1998, 2000, 2001a, b, c; 2002a, b; 2003).

ABBREVIATIONS USED:

ABSRC AgBioSys Reference Collection, Wetteren, Belgium.

BMNH The Natural History Museum, London, UK.

MHNG Muséum d'histoire naturelle, Genève, Switzerland.

NMK National Museums of Kenya, Nairobi, Kenya.

RMCA Royal Museum for Central Africa, Tervuren, Belgium.

SYSTEMATIC PART

Thivolleo gen. n.

TYPE SPECIES: *Thivolleo albicervix* sp. n. Gender: feminine.

ETYMOLOGY: The genus is named after Mr. J-P. Thivolle, with whom I had the pleasure to share several expeditions in Africa.

DISTRIBUTION: Nigeria, Cameroon, Central African Republic, Democratic Republic of Congo, Uganda, Kenya, and Tanzania.

DIAGNOSIS: Characteristic white collar, tibia of fore legs and femur of middle legs; male genitalia with a strongly developed and elongate sella and editum near the central part of the valva; female genitalia with a cup-shaped ostium bursae.

DESCRIPTION:

Head: frons flat, slightly protruding, forming small transversal ridge; labial palps porrect, about as long as diameter of compound eye; maxillary palps above proboscis, clearly visible, densely scaled.

Wings: fore wing triangular, with R1 free, R2 and R3+4 very close and parallel for most of length, both arising before the upper angle of cell; R3 short, before termen; R4 ending in termen; R5 from upper angle of cell, parallel with M; M2 and M3 separated for some distance at base, both forming lower angle of cell; Cu1 before lower angle of cell; Cu2 parallel with Cu1; A1 present. Both sexes with retinaculum consisting of series of bristles near M-stem of cell, males with additional subcostal retinaculum; frenulum hook simple in males, triple in females; wingspan: 18-31mm.

Legs: males with enlarged femur, spurs: 0, 2, 4.

Tympanal organs deeply invaginated with well-developed saccus tympani; venula prima continuing in strongly sclerotized venula secunda, latter extending beyond edge of saccus tympani.

Male genitalia: uncus broad or narrow triangular with simple setae dorsally; dorsal part of tegumen with setae on both sides; vinculum V-shaped, saccus small, laterally with membranous extension of various size forming base for bunch of simple setae; valva distally dilated and rounded or terminally narrowing; editum directed towards juxta, consisting of series of modified, flattened, apically forked setae; sella in

central part of valva, inner part forming base of editum, outer part strongly sclerotized and forming specific structure; both valvae connected by membranous transtilla; juxta V- or U-shaped, rather small; aedeagus tubular tube with larger part of vesica covered with minute, short spines; anellus with few setae.

Female genitalia: papillae anales membranous with short and long setae; length apophyses posteriores about half or about two thirds of apophyses anteriores; sinus vaginalis membranous without sclerotization; ostium bursae wide, cup-shaped, depth of cup specific; antrum V-shaped, rather small; ductus bursae turned just beneath the antrum, of moderate length; corpus bursae with small, rounded signum and well-developed appendix bursae.

LIFE CYCLE: unknown.

SYSTEMATIC POSITION: The genus is placed in the Pyraustinae because of the typical sella and editum in the male genitalia and the presence of an appendix bursae in the female genitalia. In male genitalia the genus shows some resemblance with the *Pronomis* Munroe & Mutuura, 1968, *Nomis* Motschulsky, [1861]1860 and *Paranomis* Munroe & Mutuura, 1968 group. The structure of the sella in *Thivolleo* is different; it is clearly separate from the editum. The female genitalia of *Pronomis-Nomis-Paranomis* group have the ductus bursae coiled near the corpus bursae close to the appendix bursae. The female genitalia of *Thivolleo* have no coil in the ductus bursae.

Thivolleo xanthographa (Hampson, 1913) comb.n.

Figs 1 C, 3 B, 4 A.

Pionea xanthographa Hampson, 1913: 16

TYPE MATERIAL: Holotype ♀: Nigeria, Lagos, Pyr.Br.Mus.slide n° ♀ 17157 (BMNH).

ADDITIONAL MATERIAL EXAMINED: Democratic Republic of Congo: 1♂, 1♀ [D.R.C.] Kitobola 1911 Rovere, K.Maes Gen.Prep.nr.♂ 14292 & ♀ 14293 (RMCA).

DISTRIBUTION: Nigeria, Democratic Republic of Congo.

DIAGNOSIS: Overall colour straw-yellow; male genitalia with distinctive sella.

DESCRIPTION:

Head: frons slightly protruding; labial palps porrect, length about 1.5 times diameter of compound eye, base of first segment white, other segments concolourous with ground colour of fore wings; maxillary palps well developed, last segment covering base of proboscis.

Thorax and abdomen: white collar on ventral part of thorax; rest yellow as ground colour of fore wings; abdomen slightly paler yellow; colouration of fore legs as described for genus.

Wings (Fig. 1 C): ground colour straw-yellow with light brown antemedial and postmedial fascia; also with faint, slightly curved subterminal fascia in fore and hind wings; wingspan: 28 mm.

Male genitalia (Fig. 3 B): uncus short triangular, dorsally with simple setae; valva with editum consisting of flattened, terminally forked setae on large protrusion near base of valva, protrusion larger here than in the other two species; sella placed more outwards on valva, near the middle, consisting of numerous small spines and series of stronger ones on the inner part, the whole sclerotization is much smaller as in *T. albicervix* sp. n.; apical part valva rectangular; aedeagus short and thick, larger as in the other two species.

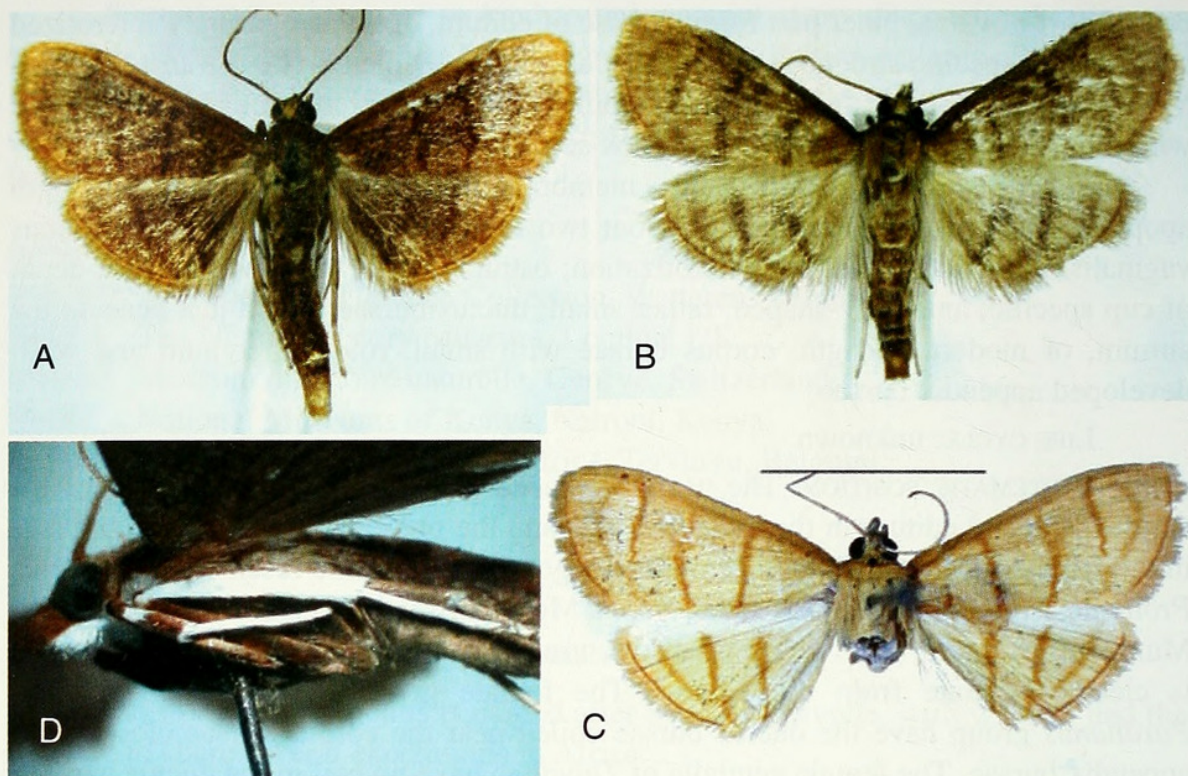


FIG. 1

Adults. (A) *Thivolleo albicervix* sp. n. Holotype. (B) *Thivolleo meruensis* sp. n. Paratype. (C) *Thivolleo xanthographa* (Hampson, 1913). (D) Lateral view adult moth *Thivolleo albicervix* sp. n. Scale: black bar equals 1 cm.

Female genitalia (Fig. 4 A): length apophyses posteriores about two thirds length of apophyses anteriores; ostium bursae wide, bulbous, antrum narrow, well sclerotized; ductus bursae starting narrow to widen immediately, almost as wide as corpus bursae.

***Thivolleo albicervix* sp.n.**

Figs 1 A, 2 A-D, 4B

TYPE MATERIAL: Holotype ♂: Cameroon, Centre, Yaoundé, Mt. Phébé 1070m, 6.vi.1993 (ABSRC); 28 Paratypes: 1 ♂: Cameroon, Centre, Yaoundé, Mt. Phébé 1070m, vi.1993 (ABSRC); 1 ♂: Cameroon, Center Prov., Batchenga, 19.vi.1993, K.Maes, (ABSRC); 1 ♂: Cameroon, Centre, Nkolbisson 16.xi.1992 K.Maes, K.Maes Gen.Prep.nr. ♂ 591 (ABSRC); 1 ♂: Cameroon, Dschang, 1800m, 8.x.90 K.Maes (ABSRC); 3 ♂: Cameroon, Dschang, 18.viii.92, K.Maes (ABSRC); 3 ♂: Republic of Central Africa, Bangui, Chasseurs Africains, Collection Jacques Plante (MHNG); 1 ♂: Democratic Republic of Congo, Elisabethville, 25.xi.1949, Ch.Seydel (RMCA); 1 ♀: Uganda, Bw[a]mba, May 1956, R.Carcasson, K.Maes Gen.Prep. nr. ♀ 20428 (NMK); 1 ♂: Uganda, Bwamba, Sept.1961, N.Mitton (NMK); 1 ♂: Uganda, Kibale Forest, Toro, May 1966, R.H.Carcasson (NMK); 1 ♂: Kenya: Kakamega Forest, W.Kenya 5000ft., June 1961, J.G.Williams (NMK); 5 ♂: Kenya, Kakamega, Rainforest Edge "Quarry" 0.17N34.47E, 1800m, Mercury Vapor Light, 7.v.1997, K.Maes (ABSRC); 1 ♂: ibidem, K.Maes Gen.Prep.nr. ♂ 904 (ABSRC); 3 ♂: Kenya, Kakamega Forest, Rondo Retreat, ca 1700m, 5-8.v.1997, Réc. U.Dall.Asta (RMCA); 1 ♂: Kenya Kakamega Forest, 1575m, 00°19'N 034°52'E, 31.iii.2003, Leg. J.& W. De Prins (RMCA); 1 ♂: Kenya, Western, Kakamega Forest, Rondo Retreat 00°13.38'N34°53'07"E, 1588m, Mercury Vapor Light, 26.viii.1999, K.Maes, K.Maes Gen.Prep.nr. ♂ 909 (ABSRC); 1 ♀: ibidem, K.Maes Gen.Prep.nr. ♀ 910 (ABSRC); 1 ♂: Tanzania, Kigoma, Kasekera, nov.1972, J.Kielland, K.Maes Gen.Prep.nr. ♂ 903 (ABSRC).

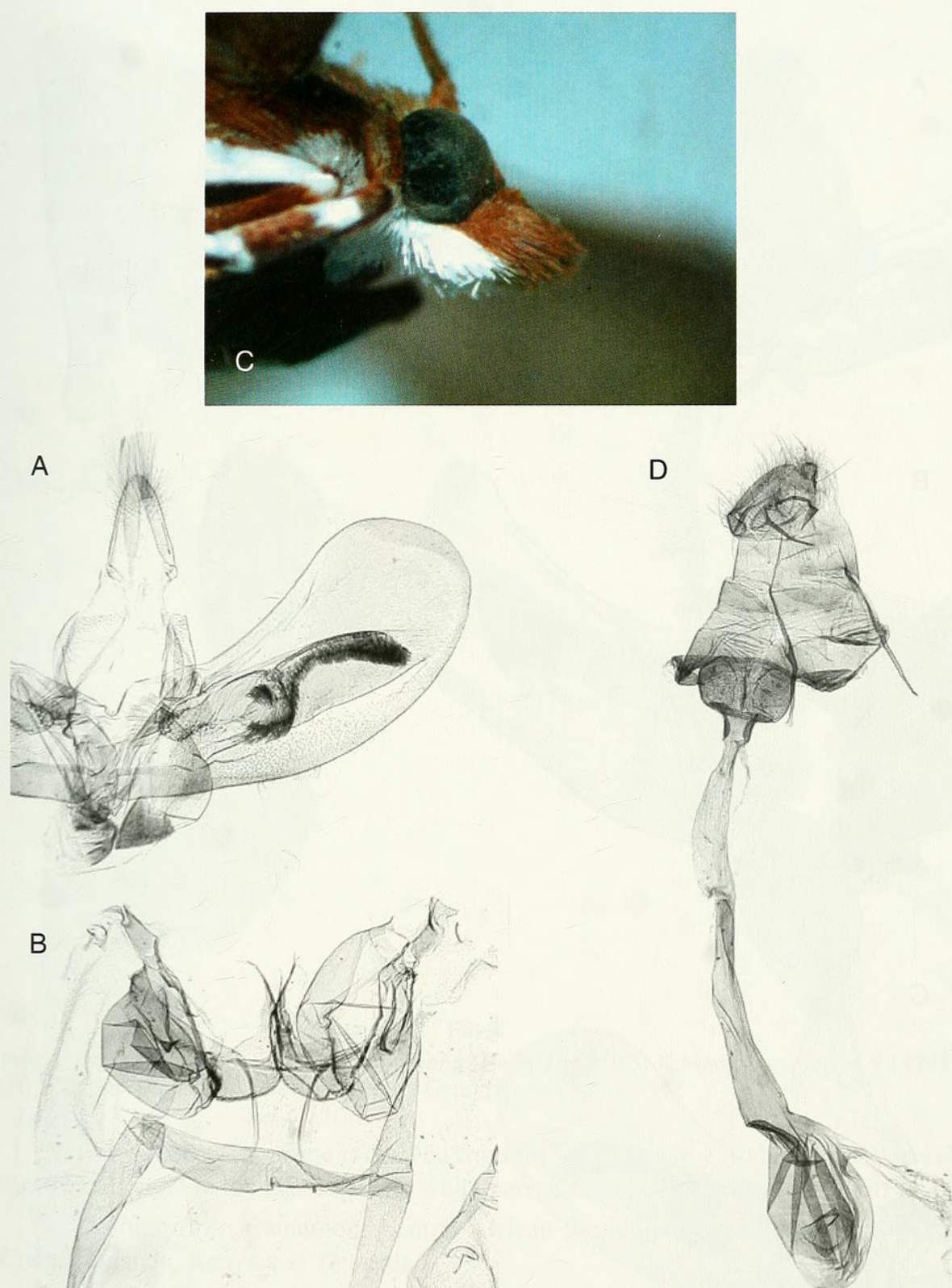


FIG. 2

Generic type: *Thivolleo albicervix* sp. n. (A) male genitalia with aedeagus illustrated underneath, K.Maes Gen.prep.nr. ♂ 591. (B) tympanal organs, K.Maes Gen.Prep.nr. ♂ 904. (C) lateral view head. (D) female genitalia, K.Maes Gen.Prep.nr. ♀ 910.

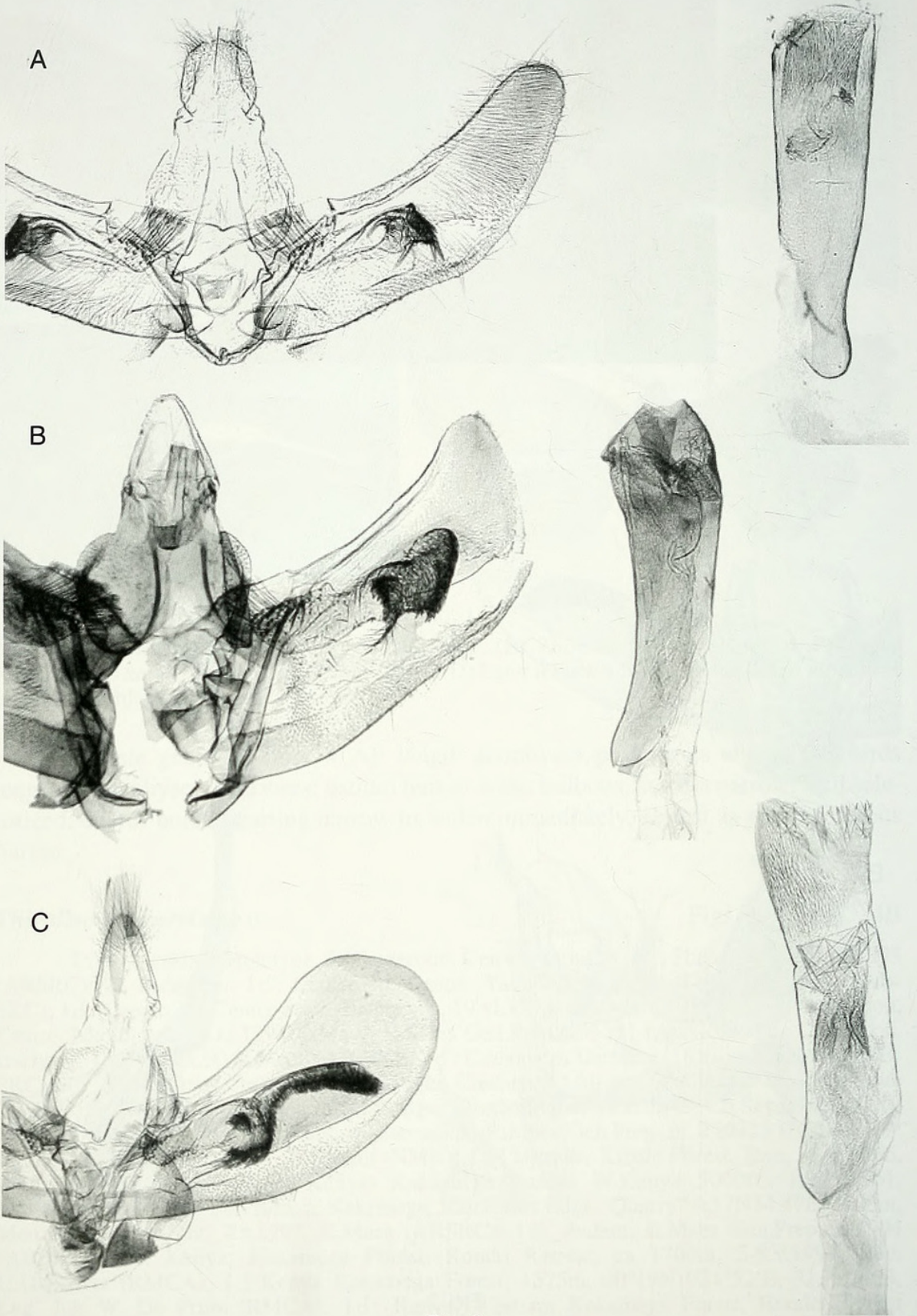


FIG. 3

Male genitalia. (A) *Thivolleo meruensis* Holotype. (B) *Thivolleo xanthographa* (Hampson, 1913). (C) *Thivolleo albicervix* Paratype K.Maes Gen.prep.nr. ♂ 591

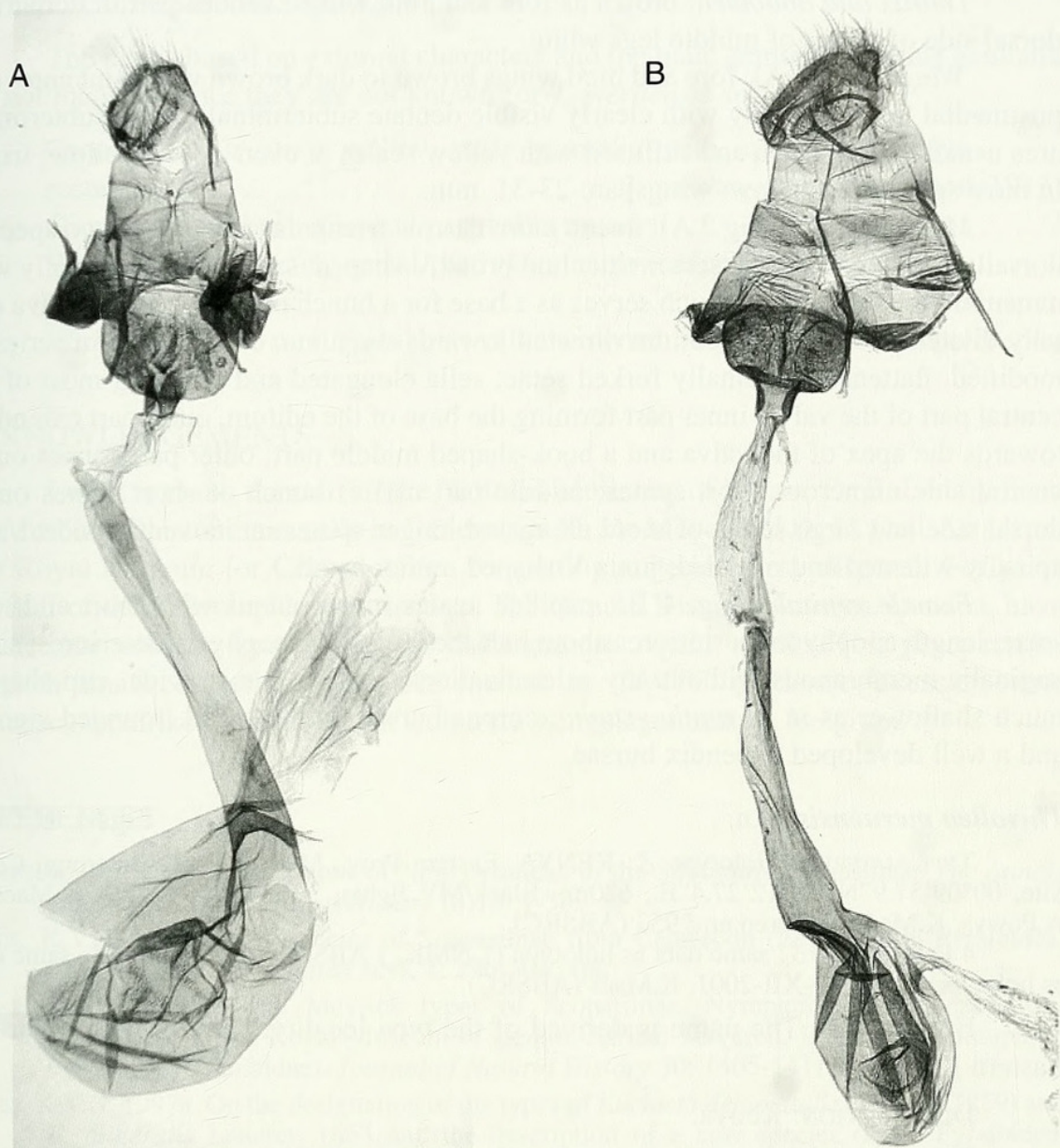


FIG. 4

Female genitalia. (A) *Thivolleo xanthographa* (Hampson, 1913) K.Maes Gen.prep.nr. ♀ 14293.
(B) *Thivolleo albicervix* Paratype K.Maes Gen.Prep.nr. ♀ 910.

ETYMOLOGY: The name is derived from the latin “*album-i*” (white) and “*cervix*” (neck) and refers to the characteristic white part of the ventral part of the collar.

DISTRIBUTION: Cameroon, Central African Republic, Democratic Republic of Congo, Uganda, Kenya and Tanzania.

DIAGNOSIS: Labial palps porrect but rather short. Male genitalia with characteristic sella and editum (Fig. 2 A).

DESCRIPTION:

Head: frons brown, laterally delimited by some yellow scales; labial palps porrect but rather short, base of first segment of labial palps white, other segments brown.

Thorax and abdomen: brown as fore and hind wings; ventral part of collar and dorsal side of femur of middle legs white.

Wings (Fig. 1 A): fore and hind wings brown to dark brown with faint ante- and postmedial fascia; usually with clearly visible dentate subterminal fascia; subterminal area usually light brown and suffused with yellow scales or even clearly yellow; fringe in most specimens yellow; wingspan: 23-31 mm.

Male genitalia (Fig 2 A): uncus more narrow triangular as in other two species; dorsally with some simple setae; vinculum broad V-shaped, saccus small, laterally with a membranous extension which serves as a base for a bunch of simple setae; valva distally dilated and rounded; editum directed towards the juxta, consisting of a series of modified, flattened, terminally forked setae; sella elongated and covering most of the central part of the valva, inner part forming the base of the editum, outer part extending towards the apex of the valva and a hook-shaped middle part; outer part carries on its ventral side numerous short spines; middle part carries bunch of short spines on its dorsal side and large series of more elongated longer spines on its ventral side; valva apically widened and rounded; juxta V-shaped, rather small.

Female genitalia (Fig. 4 B): papillae anales membranous with short and long setae; length apophyses posteriores about half the length of apophyses anteriores; sinus vaginalis membranous without any sclerotizations; ostium bursae wide, cup-shaped, much shallower as in *T. xanthographa*; corpus bursae with a small, rounded signum and a well developed appendix bursae.

***Thivolleo meruensis* sp.n.**

Figs 1 B, 3 A.

TYPE MATERIAL: Holotype ♂: KENYA, Eastern Prov., Meru N.P., Bwatherongi Camp Site, 00°09'57.9"N. 38°12'27.4"E., 620m., Black/MV lights, 30 to 31-XII-2001. K.Maes & A.Powys, K.Maes Gen.prep.nr.♂ 953 (ABSRC).

4 Paratypes: 3 ♂: same data as holotype (1 NMK, 1 ABSRC, 1 RMCA); 1 ♂: same data as holotype except 30-XII-2001, K.Maes (ABSRC).

ETYMOLOGY: The name is derived of the type locality: Meru National Park in Eastern Kenya.

DISTRIBUTION: Kenya.

DIAGNOSIS: Male genitalia with sella bearing two large strongly sclerotized spines.

DESCRIPTION:

Head: labial palps porrect, length about two times diameter of compound eye; maxillary palps long, covering base of proboscis.

Thorax and abdomen: concolourous with fore wings; abdomen rather dark, each segment apically with pale band.

Wings (Fig. 1 B): fore wings triangular, somewhat rounded at apex; ground colour grey- brown, fore wing darker than hind wing, latter more yellow with clearly distinguishable ante- and postmedian lines; wingspan: 18-19mm.

Male genitalia (Fig. 3 A): uncus rectangular, dorsally with simple setae; valva long and slender; sella strongly sclerotized with two prominent inwards directed large spines and some smaller spines on ventral side of sclerotization; juxta U-shaped; aedeagus short with some minute spines on vesica.

Female genitalia: unknown.

KEY FOR THE SPECIES OF *THIVOLLEO*

The key is based on external characters and the male genitalia. Female genitalia are not included since they are not known for *T. meruensis* sp. n.

- 1 Ground colour straw-yellow, male genitalia with apical part valva rectangular *T. xanthographa* (Hampson, 1913)
- Ground colour brown, apical part valva rounded 2
- 2 Wingspan 18-19 mm, apical part valva narrow, elongated and apically rounded *T. meruensis* sp.n.
- Wingspan 23-31 mm, apical part valva widened, rounded . . . *T. albicervix* sp.n.

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