

Description of four new species of Crambidae from the Afrotropical region (Lepidoptera: Pyraloidea: Crambidae)

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Abstract: Four new species from the Afrotropical region are described: *Pioneabathra flammea* sp.nov.; *Diathrausta media* sp.nov.; *Udeoides invaginalis* sp.nov. and *Pyrausta rosecentralis* sp.nov. Adult moths and their genitalia are illustrated.

Key words: Lepidoptera, Pyraloidea, Crambidae, sp.nov., Africa.

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INTRODUCTION

While compiling a checklist of the Crambidae of Africa, type species of described species were systematically dissected to establish the identity of these species and if possible, their generic placement. During this process a number of undescribed species were found. This paper deals with species that could be placed in known genera.

MATERIAL AND METHODS

The material studied comes from different field trips in Africa and from additional material found in collections from different museums. Each studied specimen is followed by the abbreviation of the collection where the material is deposited. Dissection method and terminology of tympanal organs follows Maes (1985).

Abbreviations

ABSRC: AgroBioSys reference Collection, Belgium.
NHM: The Natural History Museum, London, UK.

DESCRIPTIONS OF NEW SPECIES

Pioneabathra flammea sp. nov. (Figs 1a, 2a, 3a)
urn:lsid:zoobank.org:act:B4BA2556-C978-476B-B99A-B263021A5EFF

Type material. HOLOTYPE (♂): CAMEROON Center Yaoundé Mt Phébé 1070 m. vi.1993, Gen. prep. K. Maes nr.♂1584, ABSRC1001217, (ABSRC); 6 Paratypes: same data, Gen. prep. K. Maes nr.♂1167, ABSRC1001219, (ABSRC); same data, Gen. prep. K. Maes nr.♀1170, ABSRC1001218, (ABSRC); same data, Gen. prep. K. Maes nr.♂1172, ABSRC1001216, (ABSRC); 1♀: same data, ABSRC1001220, (ABSRC); 1♂: same data, ABSRC1001221, (ABSRC); 1♀: CAMEROON Centre, Nkonmeyos 750 m (Yaoundé) 25.ix.1992 K. Maes,

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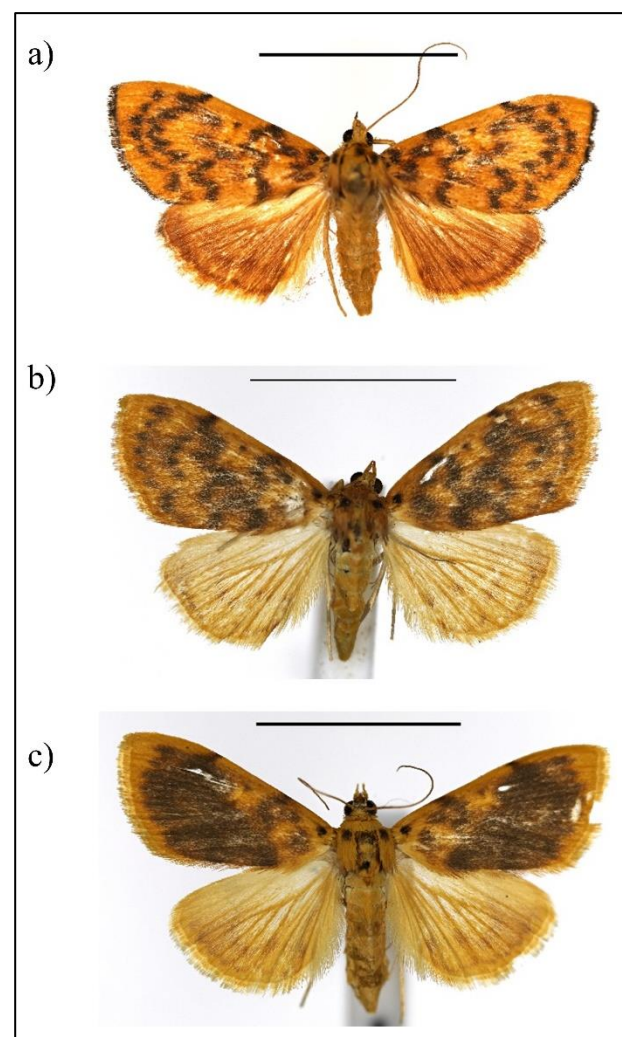


Figure 1 – a) *Pioneabathra flammea* sp. n. (paratype), b) *Pioneabathra olesialis* (Walker, 1859) (typical form), and c) *Pioneabathra olesialis* (Walker, 1859) (dark form). Scale bar = 10 mm.

ABSRC1001222, (ABSRC); 1♂: CAMEROON Centre Region Savannah-Rainforest edge near Magong SE of Yoko. 05°23'38.5"N 12°30'48.4"E. 732 m. Black/MV lights. 4–11.vi.2019. K. Maes; ABSRC1000213; (ABSRC); 1♀: same data, ABSRC1001224, (ABSRC);

1♂: CAMEROON Centre Savannah-Rainforest edge near Magong SE of Yoko. 05°23'38.5"N 12°30'48.4"E 732 m 15Watt Black Light 9–11.vi.2018; K. Maes., ABSRC1000213, (ABSRC); 1♂: same data, ABSRC1000211 (ABSRC); 1♀: same data, ABSRC1000217, (ABSRC).

Description. **Head:** Labial palps porrect, triangular, yellow with third segment black (third segment yellow in *P. olesialis*); maxillary palps rather short, yellow, curved over the base of the scaled proboscis. **Thorax:** orange red as fore wings, with a black spot on the patagium and one on the tegulae; legs orange yellow with black scaling on dorsal side of femur of front legs, black scaling near the epiphysis; second tarsal segment front legs black; medium legs with black scaling near the tip of the femur; hind legs orange-yellow; spurs: 0,2,4. **Wings** (Fig. 1a): Broad triangular with apex somewhat rounded and external margin rounded externally; wing colour orange-yellow with several black diffused lines, basically as with *P. olesialis* but postmedial fascia consisting of a continuous serrated line in contrast with the partial line in *P. olesialis*; hind wings orange-yellow, faint black post-medial line; underside wings orange-yellow with a faint impression of the post-medial line on fore and hind wings; frenulum simple in males, double in females; retinaculum consisting of a series of elongated scales; subcostal retinaculum hook absent. **Wing span:** 23–24 mm. **Tympanal organs:** Deeply invaginated, fornix tympani clearly under the venula prima; bulla tympani large, bean-shaped; no differences between *P. olesialis* and *P. flammea*.

Male genitalia (Fig. 2a). Uncus slender, bilobed, strongly sclerotized; subscaphium present in tuba analis; valva strongly modified: costa forming a long sclerotized arm extending towards the uncus, dorsally covered at the apex with some simple, long setae; rest of costa more membranous, continuing toward a rectangular apex, valva on outer part, strongly incised towards the vinculum and ventrally forming a rounded extension; inner part of valva with a long, narrow extension reaching the top of the costal arm where it is bend for 90°; ventral part of valva with evenly separated long simple setae. Aedeagus as a short tube, apically tapering, vesica with some minute scobinations near the apex of the aedeagus and a small sclerotized plate; juxta and saccus: V-shaped.

Female genitalia (Fig. 3a). Papillae anales, rounded, with long and short setae; apophyses posteriores about half the length of the apophyses anteriores; ostium bursae membranous continuing in a short, sclerotized antrum; ductus bursae has the first part just under the antrum somewhat narrow, naked to continue in a more dilated part, covered with some minute scobinations for the first part, then again membranous, spiraled only one turn, somewhere near the middle of the length of the ductus bursae, ductus seminalis just under the single bend; corpus bursae rounded, ovoid, with a rounded signum consisting of minute scobinations; appendix bursae originating somewhere near the middle of the appendix bursae.

Diagnosis. More orange-red compared to the straw-yellow of *P. olesialis* (Walker, 1859). This species differs from *P. olesialis* (Walker, 1859) (Figs 1bc) by the bifurcated uncus (simple in *P. olesialis*) (Fig. 2b), the

ventro-terminal extension of the valva and the triangular saccus in the male genitalia. The vesica in the aedeagus is only covered with some minute scobinations compared to the small spicula in *P. olesialis*. The female genitalia are quite similar with only some minute differences in the shape of the antrum (Figs 3ab).

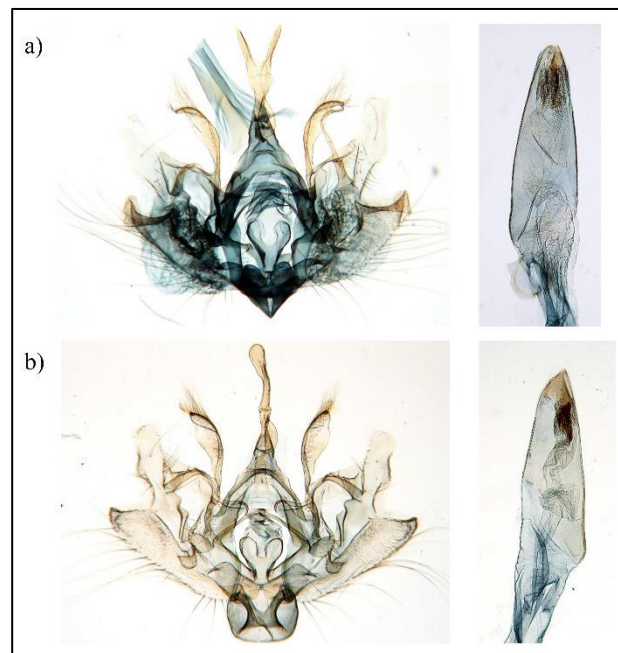


Figure 2 – a) *Pioneabathra flammea* sp.n. Gen. Prep. K. Maes nr.♂1584 (aedeagus at right side) (holotype) and b) *Pioneabathra olesialis* (Walker, 1859) Gen. Prep. K. Maes nr.♂1585 (aedeagus at right side). Kenya Coast Tsavo West national Park, Kilaguni Lodge, 02°54'33"S 38°03'36"E 580 m Mercury vapor light 10–11.iv.1999. leg. K. Maes.

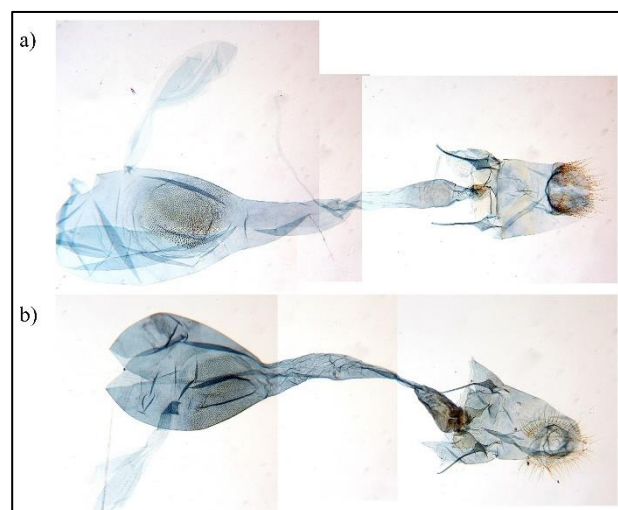


Figure 3 – a) *Pioneabathra flammea* sp.n. Gen. Prep. K. Maes nr.♀1172 (paratype) and b) *Pioneabathra olesialis* (Walker, 1859) Gen. Prep. K. Maes nr.♀1171 Tanzania, Iringa, Baptist conf. Center, 7°46'05.4"S 35°40'58.5"E 1575 m Black/MVlights 8.vi.2001. leg. K. Maes.

Life cycle. Unknown.

Distribution. Cameroon.

Etymology. The name refers to the orange colour of the adult moth (latin: flammeus).

Systematic placement. The genus *Pioneabathra* was

erected by Shaffer & Munroe in 2003 (2007) for the species *Ebulea olesialis* Walker, 1859: 748 from the “Congo”. It is placed in the Crambidae, Pyraustinae based on the structure of the male and female genitalia. The basic structure of the male genitalia place this genus and its species close to the genera *Hyalobathra* Meyrick, 1885, and *Cryptosara* Martin, 1956.

***Diathrausta media* sp. nov.** (Figs 4, 5)

urn:lsid:zoobank.org:act:2D4879CB-2B42-43FC-8B79-730368A87263

Type material. HOLOTYPE ♂: CAMEROON Dschang, 1400 m 30.xi.1990 K. Maes; Gen. Prep. K. Maes nr. ♂1333, ABSRC1001226, (ABSRC). Paratypes: 1 ♂: CAMEROON Dschang 1400 m 5.ii.1991 K. Maes, (abdomen lost), ABSRC1001225, (ABSRC); 1 ♂: CAMEROON Dschang 1400 m 8.i.1991 K. Maes, (abdomen lost), ABSRC1001227, (ABSRC).



Figure 4 – *Diathrausta media* sp.n. (holotype). Scale bar = 10 mm.

Description. **Head:** Labial palps correct, elongated triangular, black with some yellow/light-brown scaling on the ventral side; maxillary palps well developed at the base of the scaled proboscis; scaling head black. **Thorax:** black, femora front and median legs black, tibia of front legs also black, tarsal segments with some light brown scaling on the ventral side; median legs already interspersed with yellow scaling on tibia and hind legs with interspersed black/light-brown scaling over the different segments. **Wings:** (Fig. 4) as a typical *Diathrausta* species: but is blacker than the brown colour in *D. semilunalis* Maes, 2006 and with a diffuse antemedian and postmedian line. Yellow spots smaller; frenulum simple with some elongated scales on the frowning as retinaculum. **Wing span:** 11.5–13mm. **Tympanal organs:** Bull tympani bean-shaped, invaginated; fornix tympani rather broad above the venula prima.

Male genitalia (Fig. 5). Uncus dorsally with small setae, strongly build and bend over the dorsal side of the valva; valve with a curved costa continuing almost to the apex of the valva and terminating in an area with some well-developed setae; fibula well developed and progressing beyond the ventral edge of the valve; aedeagus tubular with a simple cornutus.

Female genitalia. Unknown.

Diagnosis. Ground colour very dark, black, fore wing with a black ante-medial and post-medial line, hardly visible; a

yellow spot at the inner side of the post-medial line; fringe alternating black and yellow; male genitalia with a large and broad fibula; strongly sclerotised uncus and aedeagus with a small simple cornutus. The species is close to *D. semilunalis* Maes, 2006 but differs in its smaller size, it is blacker in colour and has a larger fibula in the male genitalia.

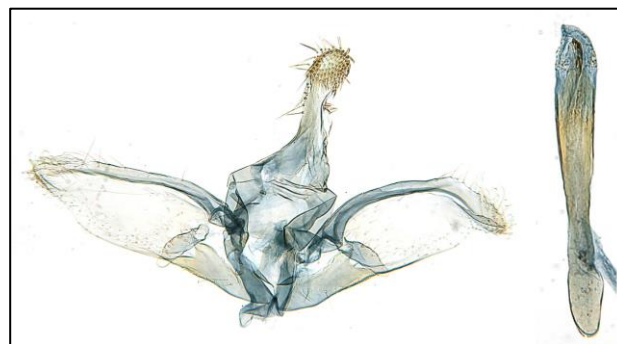


Figure 5 – *Diathrausta media* sp.n. Gen. Prep. K. Maes nr. ♂1333 (aedeagus at right side) (holotype).

Life cycle. Unknown.

Distribution. Cameroon. Only collected from Dschang in the Western region at 1400 m altitude near a swampy area.

Etymology. The name refers to origin of the species: Central Africa (*medius-a-um*).

Systematic placement. The species is placed in the genus *Diathrausta* Lederer, based on the wing pattern and the male genitalia (typical form of the valva and the sella, uncus and tegumen).

***Pyrausta rosecentralis* sp. nov.** (Figs 6, 7)

urn:lsid:zoobank.org:act:8443F3F0-3DDE-48B3-A722-F16F515D32BA

Type material. HOLOTYPE ♀: Kenya Coast Voi 2000 ft. 19.iv.1999 D. J. L. Agassiz, Gen. Prep. K. Maes nr. ♀1526 (ABSRC).



Figure 6 – *Pyrausta rosecentralis* sp.n. (holotype). Scale bar = 10 mm.

Description. **Head:** Labial palps, elongated triangular, third segment long, ventral part with long, loose scaling; maxillary palps at base of labial palps, dorsally with a white line. **Thorax:** Dorsally lightbrown; legs white, tibia front legs light-brown on the dorsal part; spurs: 0,2,4. **Wings:** (Fig. 6) broad triangular, from base towards the outer edge fuchsia red, outer edge yellow as last part of the costa towards the apex; hind wings yellow as outer

edge of front wings although a little lighter coloured; underside front wing with a black spot where the fuchsia red spot is on the fore wings; hind wings yellow; retinaculum double in female. Wing span: 14.5 mm. Tympanal organs: Bullae tympani invaginated with a rather broad fornix tympani; saccus tympani shallow; venula secundae well developed, extending over the whole length of the sternite.

Male genitalia. Unknown.

Female genitalia (Fig. 7). Papillae anales pointed, triangular; apophyses posteriores long and slender, about twice the length of the broad apophyses anteriores; ostium bursae membranous, terminating in a tubular antrum; ductus seminalis at limit between antrum and ductus bursae; the latter: membranous, coiled over all its length; corpus bursae ovoid with a rhomboid signum and a lateral membranous appendix bursae.

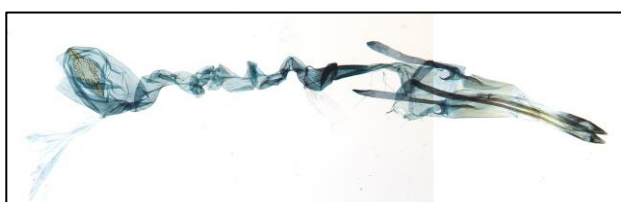


Figure 7 – *Pyrausta rosecentralis* sp.n. Gen Prep. K. Maes nr. ♀1526 (holotype).

Diagnosis. Fore wings fuchsia red with a yellow terminal band along the outer margin, starting slightly before the apex. Hind wings very light straw-yellow. The female genitalia are typical “*Pyrausta*” (coiled ductus bursae, corpus bursae with rhomboid signum and appendix bursae).

Life cycle. Not known. The fine triangular papillae anales indicate that this species lays its eggs inside some substrate.

Distribution. Kenya.

Etymology. The name refers to the fuchsia red colour in the central part of the fore wings (*roseus*).

Systematic placement. The female genitalia (typical coiled ductus bursae, rhomboid signum, membranous appendix bursae) place this species in the genus *Pyrausta* Schrank, 1802 in the subfamily Pyraustinae.

***Udeoides invaginalis* sp. nov.** (Figs 8, 9)

urn:lsid:zoobank.org:act:9D8237B9-2F70-4A44-A24A-822DF28129D7

Type material. Holotype ♀: Ghana: Volta Biakpa 480 m. 6°51'3"N 0°25'19"E 24.x.2011 D. J. L. Agassiz (Coll. D. J. L. Agassiz, deposited in NHM), Gen Prep. K. Maes ♀ 20953.

Description. Head: Labial palps porrect, maxillary palps thickly scaled at base of labial palps; antenna filiform. Wings: (Fig. 8) fore wings triangular, slightly rounded near apex; basal field black, as part of costa; median field white with some diffuse black scaling, second part of median field black; subterminal field delimited by a white line, the field itself brown near the costa, a black triangular, almost rectangular dot near the median veins

and inner part of the field, brown again. Hind wings black with a light brown scaling near the termen. Termen itself black and brown. Wing span: 14 mm. Tympanal organs: bulla tympani bean-shaped, large; fornix tympani rather broad and partly above the venula secondae; saccus tympani present but shallow; zona glabra tympani devoid of scales, rather small.

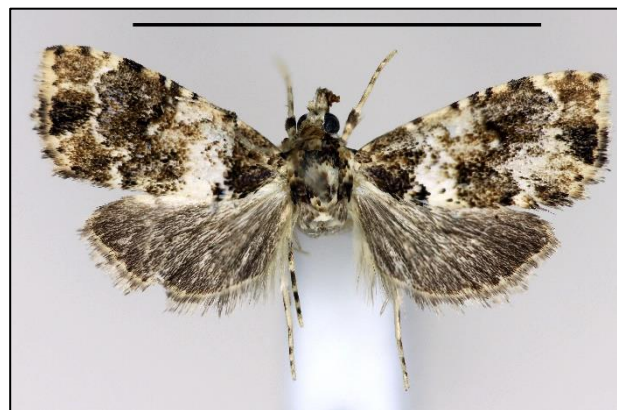


Figure 8 – *Udeoides invaginalis* sp.n. (holotype). Scale bar = 10 mm.

Male genitalia. Unknown.

Female genitalia (Fig. 9). Papillae anales membranous with long and short setae. Apophyses posteriores about half the length of the apophyses anteriores. Ostium bursae membranous with laterally, at both sides, a rounded sclerotized plate delimiting the ostium bursae. Antrum as a short tube, sclerotized; ductus bursae sclerotized, curved with ductus seminalis at limit between ductus bursae and antrum. Corpus bursae ovoid, almost completely covered with small, scobinate sclerotizations, signum lacking.



Figure 9 – *Udeoides invaginalis* sp.n. Gen. Prep. K. Maes nr. ♀20953 (holotype).

Diagnosis. Typical black and white pattern with triangular spot near the outer margin of the fore wings, this spot is much larger as the one in *Udeoides viridis* Maes, 2006 and *U. bonakandaiensis* Maes, 2006, also quite similar to *U. nolalis* (Felder & Rogenhofer, 1875) with whom it shares a similar black and white pattern in the fore wings; hind wings black. Female genitalia with two sclerotized plates lateral of the ostium; antrum as a sclerotised tube, ductus bursae sclerotized, bend.

Life cycle. Unknown

Distribution. Ghana.

Etymology. The name refers to the invaginated sinus vaginalis with the two sclerotized plates on each side.

Systematic placement. This species belongs to the genus *Udeoides* Maes, 2006 and is placed in the Crambidae, Spilomelinae based on the structure of the male and female genitalia (valva rather elongated with fibula, uncus as a rounded lobe with numerous setae; simple female genitalia without appendix bursae but a distinctive ductus bursae). Externally it is close to *U. nolalis* (Felder & Rogenhofer, 1875) because of the similar wing pattern in the fore wings (white markings near antemedian and postmedian line) but differs in the presence of the black triangular spot near the median veins in the fore wing and the dark hind wings. For the moment this is the only truly West African species of this genus.

DISCUSSION

The Pyraloidea from Africa were described mostly when the other zoogeographical regions had already been studied to a much higher extent. This may explain the relative paucity of described species for this zoogeographical region. A major setback to study the African Pyraloidea is the fact that most described species are placed in genera described from other zoogeographical regions. Correct placement is therefore often a problem. This paper deals with four species found to be new and that could be placed in established, known genera.

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