

## ***Udeoides* gen.n., a new genus of Spilomelinae from Africa (Lepidoptera: Pyraloidea, Crambidae)**

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### **Abstract**

A new genus *Udeoides* is created for three described and two new species. The placement in different families/subfamilies of the described species is discussed and the current placement in the Spilomelinae is explained. Adults and diagnostic characters are illustrated. The distribution of this genus is restricted to Africa.

**Keywords:** *Udeoides* gen.n., Spilomelinae, Africa.

### **Samenvatting**

Een nieuw genus, *Udeoides* wordt hier opgericht voor drie reeds eerder beschreven soorten en twee nieuwe soorten. De plaatsing van de beschreven soorten in verschillende families/onderfamilies en genera wordt gegeven. De huidige combinatie in dit nieuwe genus en zijn plaatsing in de Spilomelinae wordt verklaard. Afbeeldingen worden gegeven van de vlinders en hun diagnostische kenmerken. De verspreiding van de soorten van dit genus is beperkt tot Afrika.

### **Introduction**

This paper is the result of a revision and curator work on the Pyraloidea, Crambidae of the African fauna that I have conducted for the last 15 years. Specimens from different collections (BMNH, RMCA, ABSRC, NMK, TMP, see below) and fieldwork were brought together and studied.

*Udeoides* groups a number of species, which seem to be closely related in wing pattern, colouration and genitalia. The affinities are discussed under the generic description.

The type species of this new genus, *U. nolalis*, is described by FELDER & ROGENHOFER in 1875 in the genus *Scoparia* HAWORTH, 1811 that is the type genus of the subfamily Scopariinae. Indeed the wing pattern of this species resembles a number of Scopariinae and can explain this historical placement. HAMPSON (1913) described two other species, *muscosalis* and *nigribasalis*,

and placed them in the genus *Pionea* GUENÉE [1845]1844 at the time a "dustbin" genus in the "Pyraustidae", a family which consisted of a mixture of Odontiinae, Evergestinae, Pyraustinae and Spilomelinae. At present the genus *Pionea* is a junior objective synonym of *Evergestis* HÜBNER, [1825]1816 the type genus of the subfamily Evergestinae. NUSS (1999) placed *Scoparia nolalis* FELDER & ROGENHOFER, 1875 in the genus *Udea* GUENÉE, [1845] 1844, Pyraustinae based on similarities in the wing pattern and the male genitalia. In this publication the known species are grouped together with two new species in a separate genus that is placed in the subfamily Spilomelinae close to *Udea*. Its placement in this subfamily is based on the combination of characters in the male and female genitalia (male genitalia with fibula (sella and editum lacking), female genitalia with simple corpus bursae, appendix bursae lacking. In addition, males and females have a series of elongated scales as is typical for most Spilomelinae and thus lack the retinaculum formed by a subcostal sclerotized hook, as present in the males of most genera of the Pyraustinae.

Abbreviations used are ABSRC: AgroBioSys Reference Collection, Wetteren, Belgium; BMNH: The Natural History Museum, London, UK; NMK: National Museums of Kenya, Nairobi, Kenya; RMCA: Royal Museum for Central Africa, Tervuren, Belgium; TMP: Transvaal Museum, Pretoria, South Africa.

## Description

### *Udeoides* gen.n.

Gender: male

Type species: *Scoparia nolalis* FELDER & ROGENHOFER, 1875.

### Diagnosis

Typical wing pattern with green colour, male genitalia with a slender, stalked uncus, well developed saccus and valva with a slender fibula extending towards the ventral edge of the valva; aedeagus with a series of strongly sclerotized spines; female genitalia with a characteristic ductus and corpus bursae: ductus bursae slender with longitudinal folds or broad and rather short but then strongly sclerotized.

### Description

Head: frons rounded, maxillary palps terminally tufted, labial palps correct, length about 1.5 to 2 times the diameter of the compound eye.

Thorax and abdomen: spurs on legs: 0, 2, 4; front legs with a small epiphysis.

Wings: fore wings triangular; wing pattern of the "Noctuid" type with clear demarcated antemedial, medial and postmedial fields; R1 starting parallel with the base of Cu2; R2 and R3+4 before the upper angle of the cell, R2 parallel with R3+4 for most of its length; R3 before and R4 ending in termen; R5 from the upper angle of the cell, parallel with M1; M2 and M3 close but separated

at base, both of them forming the lower angle of the cell; Cu1 parallel with base of upper cell; Cu2 at about 2 thirds of the length of the cubital vein; one anal vein present. Hind wings with Sc+R1 anastomosed with Rs beyond the cell; M2 and M3 originating from one point and forming the lower angle of the cell. Male and female with a series of elongated scales as a retinaculum on the cubital area of the fore wing, frenulum single in males and double in females.

Wingspan: 14-19 mm.

Tympanal organs: praecinctorium terminally bilobed; tympanal organs invaginated, except for the fornix tympani which is slightly beyond the venula prima; small saccus tympani present; fornix tympani rather narrow, no processus tympani visible; pons tympani rather broad with the rami tympani under an angle of 90°.

Male genitalia: uncus long and slender, apical part as a small knob, dorsally with short setae; tegumen large, vinculum slender and saccus well developed, large; valva long, slender or broad with a simple fibula; aedeagus tube-like with various cornuti and spines.

Female genitalia: papillae anales membranous with short and long spines; apophyses anteriores 1.5 to 2 times longer as the apophyses posteriores; sinus vaginalis membranous; antrum sclerotized, tube-shaped; ductus bursae narrow or broad, membranous or sclerotized; corpus bursae rounded, signum absent or present.

**Life cycle:** unknown

**Distribution:** Central, Eastern and Southern Africa.

**Etymology:** The name refers to the genus *Udea* GUENÉE [1845]1844.

**Systematic position:** The genus is placed close to the genus *Udea* (Pyraloidea, Crambidae, Spilomelinae) because of the similar form of the uncus and sella in the male genitalia. The new genus differs in the structure of the female genitalia, which have a characteristic ductus bursae (large and/or sclerotized) and a membranous bulbous corpus bursae. Representatives of the genus *Udea* have the female genitalia (ductus and corpus bursae) membranous with a single ovoid signum (MUNROE, 1966).

In addition, all species of this genus have a peculiar green wing pigment that shows very green in fresh specimens and tends to become less vivid and often brown in preserved specimens. This type of pigmentation was also observed in species of the genus *Ethiobotys* MAES, 1997. None of the *Udea* species show this type of pigmentation.

### Checklist

<i>Udeoides muscosalis</i> (HAMPSON, 1913)	comb.n.
<i>Udeoides muscosalis janseni</i> (STRAND, 1916)	comb.n.
<i>Udeoides nigribasalis</i> (HAMPSON, 1913)	comb.n.
<i>Udeoides nolalis</i> (FELDER & ROGENHOFER, 1875)	comb.n.
<i>Udeoides viridis</i>	sp.n.
<i>Udeoides bonakandaiensis</i>	sp.n.

**Key based on the male genitalia**

1. Aedeagus with a single set of cornuti ..... 2
- Aedeagus with a series of spines near its base and some apical spines .... 3
2. Aedeagus with numerous very short spines, valva rather broad  
*U. nigribasalis* (HAMPSON, 1913)
- Aedeagus with a series of strongly sclerotized spines near its base, valva slender  
*U. nolalis* (FELDER & ROGENHOFER, 1875)
3. Spines at the base of aedeagus arranged in an U-shaped pattern  
*U. viridis* sp.n.
- Spines at base of aedeagus arranged on a single line ..... 4
4. Spines at base of aedeagus very long, longest almost over half the length of the aedeagus  
*U. bonakandaiensis* sp.n.
- Spines shorter and narrower  
*U. muscosalis* (HAMPSON, 1913)

**Key based on the female genitalia**

1. Ductus bursae short, straight and membranous  
*U. nigribasalis* (HAMPSON, 1913)
- Ductus bursae if long: curled, if short: large and sclerotized ..... 2
2. Ductus bursae narrow, long and curled ..... 3
- Ductus bursae short, straight and sclerotized ..... 4
3. Corpus bursae as a pouch with two parts: one sclerotized, one membranous  
*U. viridis* sp.n.
- Corpus bursae as a single pouch with an oval signum  
*U. bonakandaiensis* sp.n.
4. Ostium with a two sclerotizations as music note-shaped structures  
*U. muscosalis* (HAMPSON, 1913)
- Ostium much narrower, such sclerotizations are lacking  
*U. bonakandaiensis* sp.n.

**Description of species*****Udeoides muscosalis* (HAMPSON, 1913) comb.n.**

Pl.1: D; Pl. 2: B; Pl.3: B.

*Udeoides muscosalis jansenis* (STRAND, 1916)Hampson, 1913 Ann.Mag.nat.Hist. (8)12:13 *Pionea*Strand, 1916 Arch.Naturgesch. 82, A3: 11 *Pionea muscosalis* abb.

**Diagnosis**

Ground colour fore wings green, post medial fascia in most specimens clearly visible. Male genitalia with valva narrowing towards the apex and aedeagus with a series of cornuti and a separate plate consisting of three hooks. Female genitalia with the ductus bursae very large and strongly sclerotized.

**Description**

Head: as for the genus.

Thorax and abdomen: as for the genus.

Wings: ground colour grass- to moss-green, quite dominant in most specimens, median band in some specimens suffused with black scales.

Wingspan: 17-19 mm.

Tympanal organs: as for the genus.

Male genitalia: (Pl. 2: B) apical knob uncus rather large compared with the other species of the genus; valva with fibula relatively short; valva broad at base, narrowing towards the apex; aedeagus with three spines near the apical end and a cornutus consisting of a series of spines.

Female genitalia: (Pl. 3: B) ductus bursae large and sclerotized, ending broad in the corpus bursae.

Life cycle: unknown.

Distribution: South Africa, Kenya.

Type material examined: HOLOTYPE ♂: [SOUTH AFRICA] Transvaal, Lekkerwater Kloof. 25.ix.[19]05 Pyr. Brit. Mus. slide n°♂ 20917 (BMNH).

Additional material examined: 1♂: KENYA: Nairobi Kenya May-June 1955 P.N. Muteshy Pyr. Brit. Mus. slide n°♂20922 (BMNH); 1♂: [KENYA]: Escarpement B.E.A. iii.[19]01 6500-9000ft (W. Doherty) Pyr. Brit. Mus. slide n°♂20918 (BMNH); 1♀: KENYA: Nairobi Kenya May-June 1955 P.N. Muteshy Pyr. Brit. Mus. slide n°♀20924 (BMNH); 1♀: KENYA: Nairobi Kenya May-June 1955 P.N. Muteshy Pyr. Brit. Mus. slide n°♀ 20928 (BMNH); 1♂: KENYA: Jacaranda Research Station Ruiru Kenya April 1956 Pyr. Brit. Mus. slide n°♀20926 (BMNH); 1♀: KENYA Taita Hills 13.vii.1998 Mwachora Hill U. Dall'Asta, K. Maes Gen.Prep.nr.♀14182 (RMCA); 1♂: KENYA Taita Hills 03.vii.1998 Ngangao Forest U. Dall'Asta, K. Maes Gen.Prep.nr.♂14168 (RMCA); 1♂: KENYA Taita Hills 09.viii.1999 Yale indig. Forest U. Dall'Asta (RMCA); 1♂: KENYA Aberdares Nat. Park Ruhuruini Gate 3.iv.2000 Electric Fence alt.2334m 00°23'S 36°49'E Ugo Dall'Asta (RMCA); 1♂: KENYA, Central, Gatamaiyu Forest. 00°58'00"S. 36°41'37"E. 2120m. MV Light. 26.xi.1999 K. Maes, K. Maes Gen.Prep.nr.♂1087 (ABSRC).

***Udeoides nigribasalis* (HAMPSON, 1913) comb.n.**

Pl. 1: C; Pl. 2: D; Pl. 3: C

HAMPSON, 1913 Ann.Mag.nat.Hist. (8)12:13 *Pionea*

**Diagnosis**

This species is easily recognizable by the black basal area on the fore wings. The male genitalia have a broad valva and the smallest saccus compared with the other species of this genus. Female genitalia have a broad, short, and membranous ductus bursae.

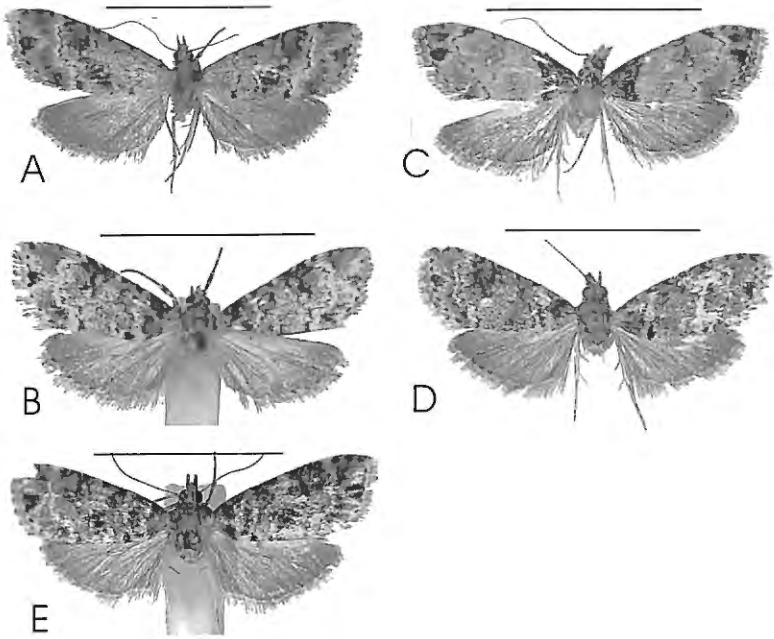


Plate 1 Adults. A: *Udeoides viridis* sp.n. Holotype; B: *Udeoides nolalis* (FELDER & ROGENHOFER, 1875); C: *Udeoides nigribasalis* (HAMPSON, 1913); D: *Udeoides muscosalis* (HAMPSON, 1913); E: *Udeoides bonakandaiensis* sp.n. Paratype.

### Description

Head: as for the genus.

Thorax and abdomen: as for the genus.

Wings: wing pattern as for the other species, except for the black basal area.

Wingspan: 17 mm.

Tympanal organs: as for the genus.

Male genitalia: (Pl. 2: D) uncus long and slender, apical knob small; tegumen rather small, vinculum narrow and saccus small; valva broad compared to other species, fibula well developed, long; aedeagus with a cornutus consisting of numerous minute spicula.

Female genitalia: (Pl. 3: C) antrum slightly sclerotized; ductus bursae broad, short and membranous ending in a bulbous corpus bursae which carries a plate-like signum.

**Life cycle:** unknown.

**Distribution:** Kenya.

**Type material examined:** HOLOTYPE ♂: [KENYA] Roromo Kikuyu B.E. Africa R. Crawshay 1900-51 14.ii.1900 Pyr. Brit. Mus. slide n°♂ 20936 (BMNH).

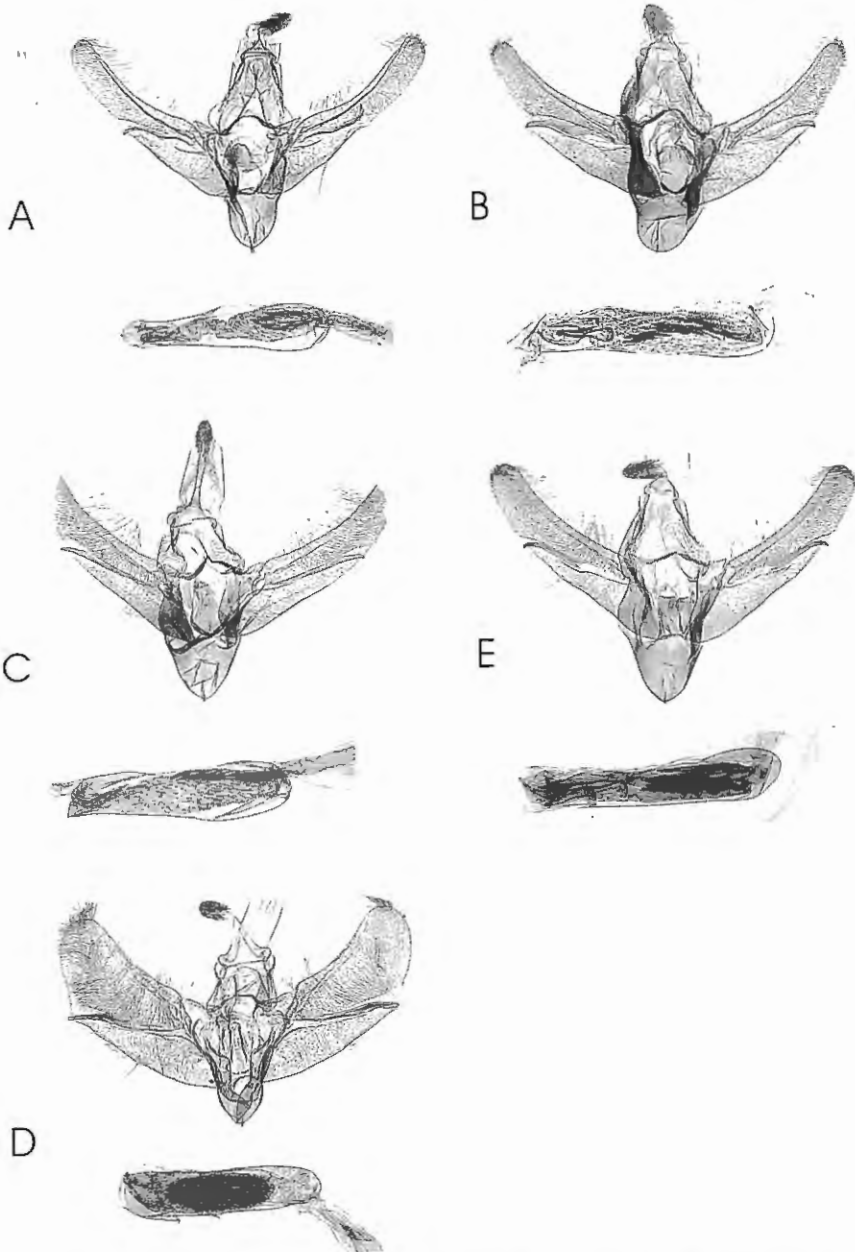


Plate 2 Male genitalia. A: *U. viridis* sp.n. Holotype Pyr. Brit. Mus. slide n° ♂20919; B: *U. muscosalis* (HAMPSON, 1913) Pyr. Brit. Mus. slide n° ♂20922; C: *U. nolalis* (FELDER & ROGENHOFER, 1875) Pyr. Brit. Mus. slide n° ♂20921; D: *U. nigribasalis* (HAMPSON, 1913) Holotype Pyr. Brit. Mus. slide n° ♂20936; E: *U. bonakandaiensis* sp.n. Holotype K. Maes Gen.Prep.nr. ♂742.

**Additional material examined:** 1♂ [KENYA] Escarpment B.E.A. iii.01, 6500-9000ft. (W. Doherty) (BMNH); 1♀: [KENYA] Escarpment B.E.A.iii.01, 6500-9000ft. (W. Doherty) Pyr. Brit. Mus. slide n°♀20937 (BMNH).

***Udeoides notalis* (FELDER & ROGENHOFER, 1875) comb.n.**

Pl. 1: B; Pl. 2: C; Pl. 3: D

FELDER & ROGENHOFER, 1875 Reise ost.Fregatte Novara (Zool.)Lep.(Het.) Pl. 134, fig. 41 *Scoparia*

**Diagnosis:** This species has a more pronounced black & white pattern compared to the other species. Male genitalia with a long slender uncus, longer as in the other species; aedeagus with a series of short, strongly sclerotized spines.

Female genitalia with a long and curled ductus bursae, corpus bursae with an oval signum.

**Description**

Head: as for the genus.

Thorax and abdomen: as for the genus.

Wings: ground colour grey with black and some green, the fore wing gives a chequered pattern; ante medial fascia diffuse, post medial fascia clearly delimited, white or light grey. Hind wings grey, postmedial area darker with some interneural dots.

Wingspan: 17-18 mm.

Tympanal organs: as for the genus.

Male genitalia: (Pl. 2: C) uncus long and slender; valva slim, with the fibula slightly extending beyond the ventral edge; saccus large; aedeagus with a series (6) of short, sclerotized spines.

Female genitalia: (Pl. 3: D) apophyses posteriores and anteriores of about equal length; sinus vaginalis membranous, ostium sclerotized, ductus bursae curled and with a series of longitudinal folds extending in the corpus bursae; oval signum present.

Life cycle: unknown.

Distribution: South Africa, Kenya.

**Type material examined:** HOLOTYPE ♂: [SOUTH AFRICA] Caffraria, Pyr. Brit. Mus. slide n°♂20278 (BMNH).

**Additional material examined:** 1♀: [SOUTH AFRICA] Durban June 01 G.J. Leigh, Pyr. Brit. Mus. slide n°♀ 20927 (BMNH); 1♀: [KENYA] Escarpment B.E. Africa iii.01 6500-9000ft. (W. Doherty) Pyr. Brit. Mus. slide n°♀20925 (BMNH); 1♂: [KENYA] Escarpment B.E. Africa iii.01 6500-9000ft. (W. Doherty), Pyr. Brit. Mus. slide n°♂20921 (BMNH).

***Udeoides viridis* sp.n.**

Pl.1: A; Pl. 2: A; Pl. 3:A

**Diagnosis**

Male genitalia with uncus on a very slender base; aedeagus with a series of short but strongly sclerotized spines near its base arranged in an U-shaped



pattern; in addition a single slim spine in the apical part of the aedeagus. Female genitalia close to *U. nolalis* but with a different sclerotization in the ostium and the shape of the corpus bursae is different: more as a separate pouch with different degrees of sclerotization.

#### **Description**

Head: as for the genus.

Thorax and abdomen: as for the genus.

Wings: ground colour green with black and some white; post medial fascia delimited with black as in *U. muscosalis*. Hind wings dark grey.

Wingspan: 17-18 mm.

Tympanal organs: as for the genus.

Male genitalia: (Pl. 2: A) uncus on a very slender base; valva long and slender, rather thin; fibula long and slender; aedeagus with a series of short but strongly sclerotized spines near its base arranged in an U-shaped pattern; a single spine, rather slim, in the apical part of the aedeagus. Saccus well developed but narrower as in *U. muscosalis*.

Female genitalia: (Pl. 3: A) apophyses posteriores slightly shorter as the apophyses anteriores; papillae anales well developed, covered with long setae; sinus vaginalis membranous, ostium sclerotized, with a two sclerotizations as music note-shaped structures. These are also present in *U. muscosalis*. The ductus bursae is narrow with a series of longitudinal folds; corpus bursae as a separate pouch with a sclerotized and a membranous part.

**Life cycle:** unknown.

**Distribution:** Kenya.

**Etymology:** The name refers to the vivid green colour in fresh specimens (Latin: green = *viridis*).

**Type material examined:** ♂ HOLOTYPE : [KENYA] Escarpment B.E.A. iii.01, 6500-9000 ft. (W. Doherty) Pyr. Brit. Mus. slide n° ♂ 20919 (BMNH); 1 ♀ PARATYPE: [KENYA] Escarpment B.E.A. iii.01, 6500-9000 ft. (W. Doherty) Pyr. Brit. Mus. slide n° ♀ 20920 (BMNH).

#### ***Udeoides bonakandaiensis* sp.n.**

Pl. 1: E; Pl. 2: E; Pl. 3: E

#### **Diagnosis**

This species is close to *U. muscosalis* but is different in male and female genitalia: the aedeagus has a series of strongly sclerotized spines which are much longer as in *U. muscosalis*, the same is applicable to the apical sclerotizations: they are much larger. The female genitalia are similar to those of *U. muscosalis* but the ostium is much narrower and the lateral music note-shaped sclerotizations are not present.

#### **Description**

Head: as for the genus.

Thorax and abdomen: as for the genus.

Wings: similar in wing pattern and colour as *U. muscosalis*.

Wingspan: 16-19 mm.

Tympanal organs: as for the genus.

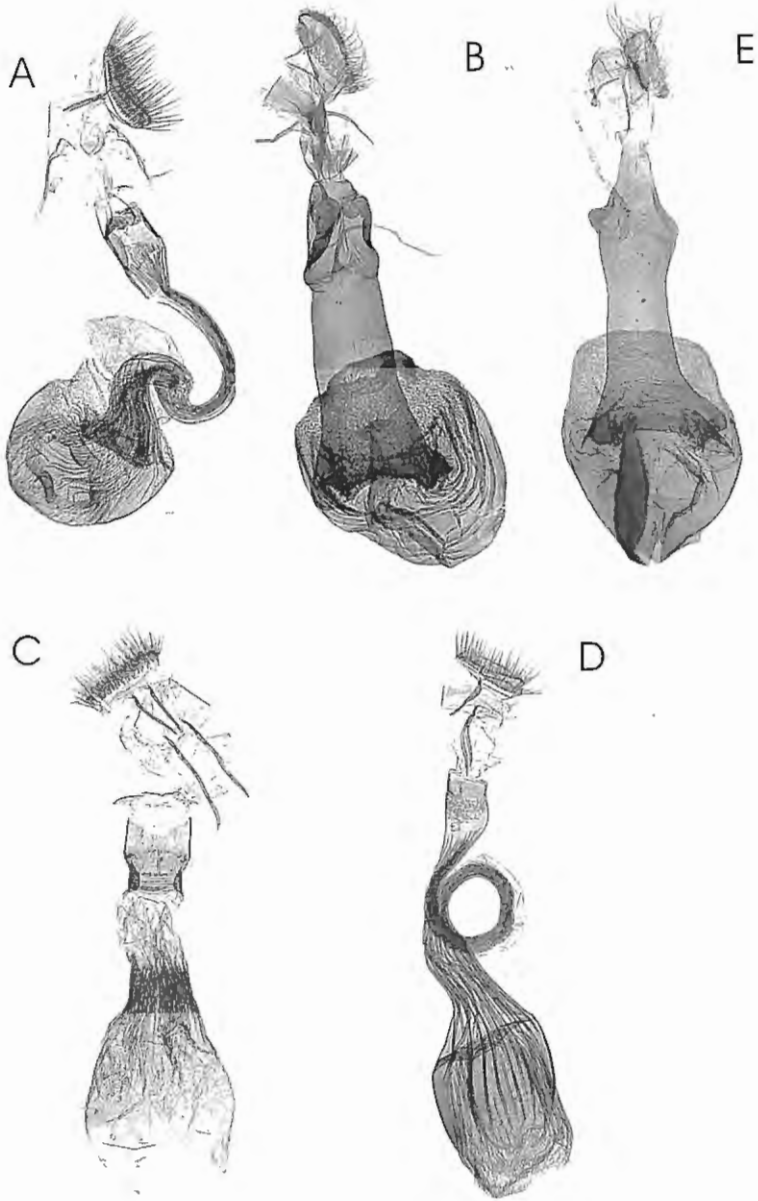


Plate 3 Female genitalia. A: *U. viridis* sp.n. Paratype Pyr. Brit. Mus. slide n° ♀ 20920; B: *U. muscosalis* (HAMPSON, 1913) Pyr. Brit. Mus. slide n° ♀ 20924; C: *U. nigribasalis* (HAMPSON, 1913) Pyr. Brit. Mus. slide n° ♀ 20937; D: *U. nolalis* (FELDER & ROGENHOFER, 1875) Pyr. Brit. Mus. slide n° ♀ 20927; E: *U. bonakandaiensis* sp.n. Holotype K. Maes Gen.Prep.nr. ♀ 1108.

Male genitalia: (Pl. 2: E) very similar with those of *U. muscosalis* but the fibula is narrower and longer; the juxta is more pointed; the sclerotized parts in the aedeagus are all much larger: the series of spines near the base of the aedeagus are longer and more strongly sclerotized, the apical spines are longer and larger.

Female genitalia: (Pl. 3: E) largely as *U. muscosalis* but with the ostium much narrower and with the lateral music note-shaped sclerotizations lacking.

**Life cycle:** unknown.

**Distribution:** Cameroon.

**Etymology:** The name is derived from the type locality "Bonakanda".

**Type material examined:** ♂ HOLOTYPE: CAMEROON S.W. Mt. Cameroon Bonakanda 1325m 29.xii.1988 K. Maes, K. Maes Gen.Prep.nr.♂742 (ABSRC); 1♀ PARATYPE: CAMEROON S.W. Mt. Cameroon Bonakanda 1325m 29.xii.1988 K. Maes, K. Maes Gen.Prep.nr.♀1108 (ABSRC).

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