

***Powysia* gen.n., a new genus of Pyraustinae
for Eastern Africa
(Lepidoptera, Pyraloidea, Crambidae)**

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Abstract

A new genus *Powysia* with a new species, *P. roseolinea*, is described from specimens collected in Kenya and Tanzania. This genus is quite unique within the Pyraustinae because of its strongly modified valva in the male genitalia. The female genitalia with the appendix bursae, place it clearly in the Pyraustinae. The genus is thought to be endemic for the Rift Valley. The adult moth and the genitalia and tympanal characters are illustrated. Its systematic placement is discussed.

Keywords: *Powysia* gen.n., sp.n. Pyraustinae, Africa.

Samenvatting

Een nieuw genus *Powysia* en een nieuwe soort *P. roseolinea* worden hier beschreven gebaseerd op specimens afkomstig uit Kenya en Tanzania. Het genus is uitzonderlijk binnen de Pyraustinae omwille de vorm van de valva in de mannelijke genitalia. De structuur van de vrouwelijke genitalia met de goed ontwikkelde membraneuse appendix bursae, plaatsen het echter duidelijk in de Pyraustinae. De vlinder, genitalia en tympanaal organen worden afgebeeld. Er worden een aantal opmerkingen omtrent de systematiek van deze taxa gegeven.

Introduction

New taxa and combinations were discovered based on fieldwork in Africa and material from several museums. Recent studies (MAES, 1997, 1998a, b, 2000, 2001a, b, c, 2002a, b, 2002a, b, 2004a, b) and unpublished data have resulted in changes in the systematics of the Crambidae. The total number of

valid taxa of Crambidae in Africa is much lower than the number found in surrounding regions. A number of taxa seem to have a large distribution. For instance, *Crypsiptya* MEYRICK, 1894 and *Agrotera* SCHRANK, 1802 have species in the Afrotropical, Oriental and even Australian regions. These distribution patterns have slowed down the publication of results since all taxa have to be studied before conclusions can be made. Other taxa seem to have a strictly Afrotropical distribution. Common distribution patterns are the following: related species belonging to the same genus with a distribution over the western and eastern African highlands (*Paschiodes* HAMPSON, 1913; *Algedonia* LEDERER, 1863), a series of genera and species restricted to the forests of the Congo basin (several Spilomelinae) and some endemics restricted to the Rift valley in Eastern Africa. Southern Africa is rich in species compared to the rest of Africa and has several endemics (*Daunabotys* MAES, 2004; *Palpita tsisabiensis* MAES, 2004, several undescribed Odontiinae). The following genus is remarkable because it is restricted to the Rift valley with specimens collected in Kenya and Tanzania.

Abbreviations used: ABSRC: AgroBioSys Int. Reference Collection, Wetteren, Belgium. NMH: The Natural History Museum, London, UK. RMCA: Royal Museum for Central Africa, Tervuren, Belgium. TMP: Transvaal Museum, Pretoria, South Africa.

Description

Powysia gen.n.

Type species: *Powysia rosealinea* sp.n.

Gender: female

Diagnosis

Male genitalia with strongly modified valva: sella and editum very large, covering most of the central part of the valva.

Description

Head: frons protruding, as a pyramidal cone; labial palps porrect about the same length as the diameter of the compound eyes.

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

Wings: fore wings triangular; R1 starting before the base of Cu2; R2 before the upper angle of the cell, R3+4 from the upper angle of the cell, R3 separating short before termen, R4 ending in termen; R5 and M1 very close to each other at their bases but separated, parallel over most of their length; M2 slightly curved towards the base of M3, almost in the middle of the cell; M3 from the lower angle of the cell; Cu1 at about the same distance from the base of M3 as M2; Cu2 at about two thirds of the length of the Cubital vein; one anal vein present. Hind wings with a Sc+R1 anastomosed with Rs beyond the cell; M2 and M3 starting from one point out of the lower angle of the cell.

Male and female with a single frenulum and a series of elongated scales as a retinaculum on the cubital area of the fore wing, males with in addition a

subcostal retinaculum.

Wingspan: 18-23 mm.

Tympanal organs: praecinctorium terminally enlarged; tympanal organs invaginated, fornix tympani narrow and close to the venula prima; the latter continuing in the curved venula secunda which is long and covering the larger part of the sternite.

Male genitalia: uncus narrow triangular, tegumen bulbous, vinculum U-shaped with a narrow saccus; valva apically widened with a highly modified sella and editum covering most of the central area of the valva; editum consisting of a long ridge following the outline of the costa and delimited by a series of elongated simple setae; sella consisting of a dorsal part at the apical end of the editum and there consisting of a bunch of short but strongly sclerotized spines, the ventral part of the sella covering most of the mid-ventral part of the valva and consisting of a sclerotized shield covered with spines, smaller ones near the middle of the shield and larger ones near the ventral edge of the shield, in all gradually going from small to large; both valves medially connected by a transtilla consisting of two triangular plates covered with simple setae; juxta consisting of two bean-shaped sclerotizations with at the area of the anellus some simple setae; aedaeus short, tube-shaped with a half-moon shaped cornutus whose surface is covered with numerous minute short spines and a vesica consisting of a membrane covered with very short spines.

Female genitalia: papillae anales membranous with numerous long setae; apophyses posteriores slightly longer as the apophyses anteriores; anterior edges of the viiith segment laterally strongly sclerotized and forming a ridge covered with minute spines; antrum sclerotized and continuing in a membranous ductus bursae which is bend for 90° just underneath the antrum and has an enlarged pouch at the beginning of the ductus seminalis; ductus bursae long, slightly spiralled; corpus bursae with a rhomboid signum and a membranous appendix bursae.

Life cycle: unknown.

Distribution: Kenya, Tanzania.

Etymology: The genus is named after Mr. Gilfrid Powys, who lives on the Laikipia plateau in Kenya. His expert knowledge of plants and their habitats in the drier parts of East Africa was invaluable while sampling in that region.

Systematic position: This genus is placed closely to the genus *Achyra* GUENÉE, 1849 because of resemblances in the genitalia and the tympanal organs. In the female genitalia there is an enlarged part in the ductus seminalis near the antrum, the tympanal organs have a broad fornix tympani and the venula secundae are long and curved. The male genitalia have a simple narrow uncus with a dorsally bulbous tegumen. It is different from *Achyra* mainly in the structure of the valva in the male genitalia which in this genus are strongly modified on the edges and the inner area and do not resemble the simple lobe shaped form as found in *Achyra* and most other Pyraustinae.



Plate 1: Adult moth with details of dorsal and lateral view head (black bar = 1 cm).

Powysia roseolinea sp.n.

Diagnosis: characteristic male genitalia with strongly modified valva. Adult with a single transversal line from the apex of the fore wing.

Description:

Head: frons with scales of same colour as the ground colour of the fore wings, some white scales forming a white line as an eyebrow above the compound eyes; labial palps porrect, length about twice the diameter of the compound eye; third segment of the palps slightly down curved.

Thorax and abdomen: dorsal side of the thorax with scales of same colour as ground colour of fore wings, ventral side slightly lighter, front pair of legs are frontally dark brown, second pair of legs ventrally with a thin white line.

Wings: fore wings with ground colour light yellowish to light brown with no wing markings except an almost straight line starting from the apex of the fore wing and ending at about 2/3 of the length of the inner margin; hind wings with a greyish, rather straight postmedial line, ground colour hind wings even more lighter yellow to slightly transparent; males and females with a tuft

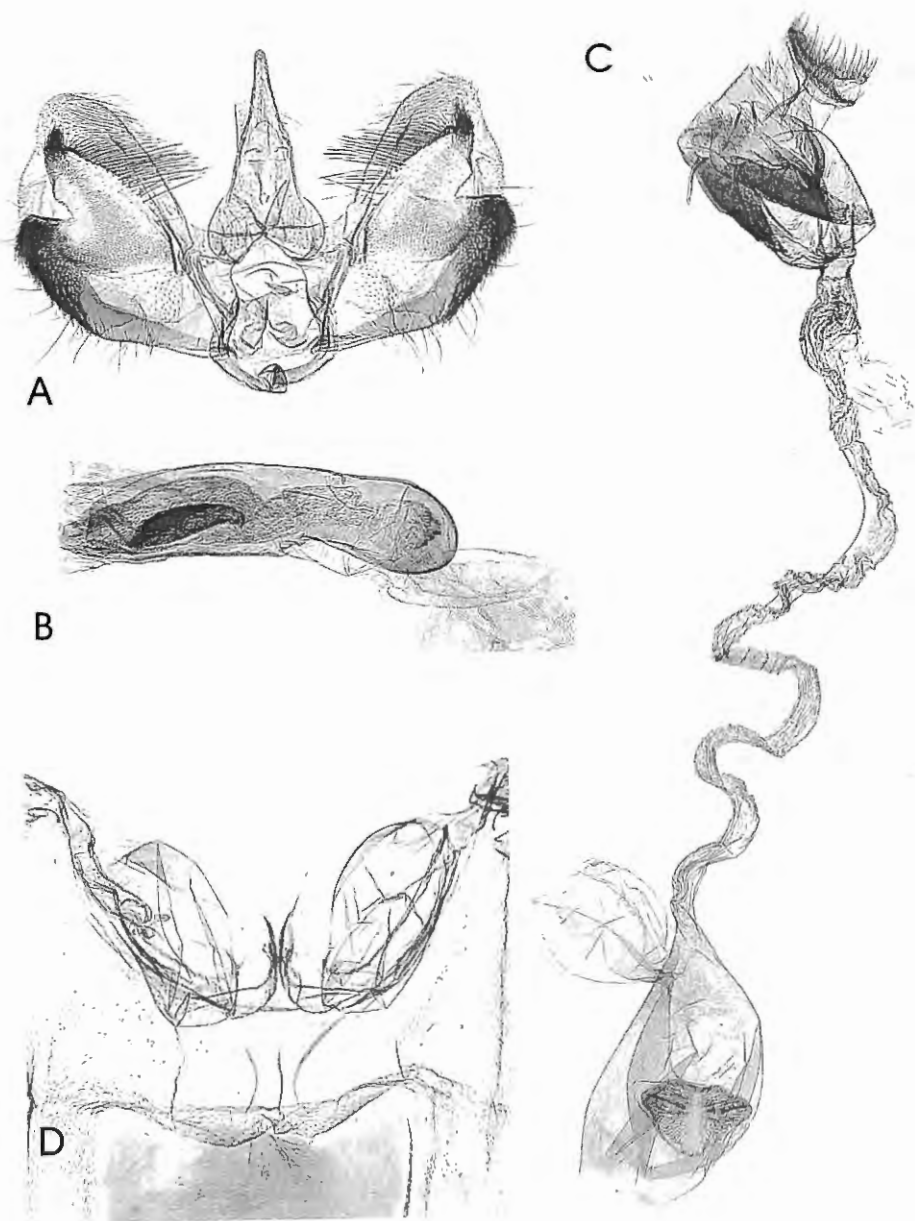


Plate 2: A: male genitalia Holotype K.MAES Gen.prep.nr.♂1067, B: aedeagus Holotype; C: female genitalia Paratype K.Maes Gen.prep.nr.♀1183, D: tympanal organs Holotype.

of enlarged scales on the cubital stem as a retinaculum, males with in addition a subcostal frenulum; frenulum simple in males and females.

Wingspan: 18-24 mm.

Tympanal organs: as for the genus.

Male genitalia: as for the genus.

Female genitalia: as for the genus.

Life cycle: unknown.

Distribution: Kenya, Tanzania.

Etymology: The name is derived from the latin: roseus-a-um (pinkish red) and linea-ae (line) referring to the reddish line near the apex of the fore wing.

Type material examined: HOLOTYPE ♂: KENYA, Rift Valley, Samburu Nat. Res. near Uaso Nyiro river, Intrepid Camp. 0°34'34,8"N. 37°39'36"E. 910 m. Black/MV lights. 13 to 14-xii-2002. K. Maes, K. Maes Gen.prep. nr. ♂1067 (ABSRC); 11 PARATYPES: 1♀: KENYA, Rift Valley, Samburu Nat. Res. near Uaso Nyiro river, Intrepid Camp. 0°34'34,8"N. 37°39'36"E. 910 m. Black/MV lights. 13 to 14-xii-2002. K. Maes, K. Maes Gen.prep.nr. ♀1068 (ABSRC); 1♀: same data as previous, K. Maes Gen.prep.nr. ♀1183 (ABSRC); 1♂: KENYA, Rift Valley, Samburu Nat. Res. near Uaso Nyiro river, Intrepid Camp. 0°34'34,8"N. 37°39'36"E. 910 m. Black/MV lights. 13-iv-2001. K. Maes (RMCA); 1♂: [TANZANIA] Great Craters Tanganyika ii-iii.1921 J. A. Barns, K. Maes Gen.prep.nr. ♂20714 (TMP); 1♀: KENYA, Mtito Andei Apr. 1966 R.H. Carcasson (NHM); 1♀: [KENYA] K.C. Namanga Nov.1951 J. Nagle (NHM); 1♀: [KENYA] K.C. Namanga 4500ft. March 1951 E. Pinhey (NHM); 2♀: [KENYA] K.C. Isiolo Apr.-May 1951 Mrs. Adamson (NHM); 1♀: [KENYA] K.C. Voi Nov.1951 D. Sheldrick (NHM); 1♀: KENYA, N.F.D. Isiolo Archer's Post Dec.1963 R.H. Carcasson (NHM).

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