

SYSTEMATICS AND PHYLOGENY

The Crambinae from Ethiopia and Mozambique collected by the University of Molise expeditions in 2008 and 2009 (Lepidoptera: Pyraloidea: Crambidae, Crambinae)

G. Bassi,¹ P. Trematerra²¹Amateur Entomologist; ²Department of Agricultural, Environmental and Food Sciences, University of Molise, Campobasso, Italy

Abstract

This study stems from samples of Crambinae specimens collected in Ethiopia and Mozambique by the University of Molise, Italy. A list species with their known distribution is given; *Ancylolomia parentii* Bassi, sp. n., *Angustalius casandra* Bassi, sp. n., *Calamotropha dagamae* Bassi, sp. n., *Calamotropha virginiae* Bassi, sp. n., and *Crambus bellinii* Bassi, sp. n. are described. The new synonymy *Chrysocatharylla agraphellus* (Hampson, 1919)=*Chrysocatharylla fusca* Bassi, 1999, syn. n. and *Angustalius malacellus* (Duponchel,

1936)=*Crambus hapaliscus* Zeller, 1852, syn. rev. are established. A lectotype for *Crambus hapaliscus* Zeller, 1852 is designated and the female genitalia of *Ancylolomia melanothoracia* Hampson, 1919 and *Ancylolomia obscurella* de Joannis, 1927 are illustrated for the first time.

Correspondence: Graziano Bassi, Via Sant'Agostino 51, 10051 Avigliana (TO), Italy. Tel. +39.335.7662721.
E-mail: graziano.bassi@alice.it

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Introduction

The present study is mostly based on a small collection made by four Italian expeditions of the entomologists of the University of Molise to southeast Ethiopia and southern Mozambique in 2008 and 2009, supplemented by data from hundreds of specimens from several collections studied by the senior author.

All Crambinae specimens were collected in the following areas: Ethiopia (Omo Valley, Harenna Forest, Sanetti Plateau and Asella); Mozambique (Maluana and Zitundo Tintigala Lodge forest).

The results of these expeditions referring to the Lepidoptera Tortricidae fauna were reported by Razowski & Trematerra (2008, 2010, 2012).

Ethiopia

Omo Valley

Omo Valley, Tarcha, 1400 m. This ecosystem is characterized by *Anogeissus leicocarpa*, *Combretum* spp. and *Terminalia* spp. (Combretaceae), *Oxytenanthera abyssinica* (Poaceae), *Boswellia papyrifera* (Burseraceae), *Sterospermum kunthianum* (Bignoniaceae), *Pterocarpus lucens* and *Lonchocarpus laxiflorus* (Fabaceae), *Albizia malacophylla* and *Entada africana* (Fabaceae-Mimpoideae), *Lannea* spp. (Anacardiaceae). These are small trees with fairly large deciduous leaves, which often occur with the lowland bamboo *O. abyssinica* (Poaceae). The understory is a combination of herbs and grasses. The herbs include *Justicia* spp. and *Barleria* spp. (Acanthaceae), *Eulophia chlorophyllum* (Orchidaceae), *Hossolunda opposita* and *Ledebouria* spp. (Asteraceae); the grasses include *Cymbopogon*, *Hyparrhenia*, *Echinochloa*, *Sorghum* and *Pennisetum* (Poaceae), etc.

Harenna Forest

Harenna Forest (Bale Mountains), 2350 m. The dominant trees at this elevation, *Aningeria adolfi-friderici* (Sapotaceae), *Podocarpus falcatus* (Podocarpaceae) and *S. guineense* (Myrtaceae), are 50 m tall; there is also a closed canopy below which include *Alangium chinense* (Cornaceae), *Olea capensis* (Oleaceae), *Ocotea kenyanensis* (Lauraceae) and *Strychnos mitsis* (Loganiaceae). *Podocarpus falcatus* (Podocarpaceae) is not generally found above 2400 m and *S. guineense*

(Myrtaceae) is the dominant tree along with *Schefflera abyssinica* (Araliaceae) and other montane forest trees. There are also patches of *Arundinaria alpina* (Poaceae). The tree canopy is not very dense at this high elevation and so there is a rich herb flora in the forest.

Sanetti Plateau

Sanetti Plateau (Bale Mountains), 4000 m. Large trees are absent at such high elevations, although some bushes and shrubs such as *Hypericum revolutum* (Hypericaceae) do occur. The main vegetation types are moorland, grassland and herb meadow. Much of the montane vegetation is a heathland scrub around 0.5-1.0 m high, dominated by *Philippia* and *Erica arborea* (Ericaceae) and other shrub species. Between the shrubs, the soil is bare and there are smaller plant species, such as *Helichrysum* (Asteraceae), *Alchemilla* (Rosaceae), *Cerastium* (Cariophyllaceae), and the grasses *Koeleria* spp. and *Aira* spp (Poaceae). Steep rocky slopes and cliffs in the high-elevation regions support very little vegetation, while the sedge *Carex monostachia* (Cyperaceae) dominates flat swampy areas. A distinctive feature of the vegetation in this zone is the giant *Lobelia ptychopetalum* (Myristicaceae).

Asella

Asella, 2500 m (in tsetse trap). The collecting site was located near a stream where the vegetation was a mixed deciduous woodland with *Hagenia abyssinica* (Rosaceae), *Schefflera abyssinica* (Araliaceae) and *Hypericum revolutum* (Hypericaceae). Far from the stream, *Eucalyptus* (Myrtaceae) plantations dominate the landscape. Cereal and horticultural crops were also present in the area.

Mozambique

Maluana

Maluana, 10 m. Maluana is a rural area situated just North of Maputo. The vegetation falls within the savanna biome, *i.e.* a mosaic of scrub forests, evergreen and semi-evergreen bush-land and thicket, in a matrix comprising secondary and wooded grasslands. At the collecting site, the vegetation was shrub land strongly modified by agricultural activities with crops such as maize, cassava, groundnuts and pumpkin.

Zitundo Tintigala Lodge forest

The site is located at the southern border of the Maputo Elephant Game Reserve. The three main vegetation types are grasslands dominated by *Hyparrhenia* spp., *Themeda triandra*, *Cynodon dactylon*, *Sporobolus virginicus* and *Dactyloctenium aegyptium* (Poaceae); fire-restricted woodlands dominated by *Azelia quanzensis* (Pod mahogany) (Leguminosae-Caesalpinioideae), *Ochna natalitia* (Ochnaceae), *Mimusops caffra* (Sapotaceae), *Euclea natalensis* (Ebenaceae), *Psyrax locuples* (Rubiaceae); and riverine forests of *Acacia* spp. (Mimosaceae) with reed beds characterizing the seasonal rivers and lake sides.

Material and Methods

The descriptions are based on all available specimens. The length of the labial palpus is compared to the maximum diameter of the composite eye in side view. We follow Robinson (1976) for dissection genitalia technique and Klots (1970) for terminology.

Moths were collected at night on a white sheet placed behind a 160-watt mercury vapour lamp. In most cases only a single specimen was found at any one locality.

Abbreviations

Distribution lists are integrated with data of specimens studied from the collections cited in the following abbreviations list:
 BMNH=Natural History Museum, London, England.
 CB=Bassi Collection, Avigliana (Torino), Italy.
 GS...GB=Genitalia slide.... G. Bassi.
 GS...SB=Genitalia slide.... S. Bleszyński.
 MFNB=Museum für Naturkunde, Leibniz-Institut für Evolutions-und Biodiversitätsforschung an der Humboldt-Universität zu Berlin, Berlin, Germany.
 MHNG=Muséum d'histoire naturelle, Geneva, Switzerland.
 NHRM=Naturhistoriska Riksmuseet, Stockholm, Sweden.
 RMCA=Royal Museum for Central Africa, Tervuren, Belgium.
 RSA=Republic of South Africa.
 SAM=Iziko South African Museum, Cape Town, Republic of South Africa.
 TMSA=Distong National Museum of Natural History (formerly the Transvaal Museum), Pretoria, Republic of South Africa.
 ZMUC=Natural History Museum of Denmark, Copenhagen, Denmark.
 ZSM=Zoologische Staatssammlungen München, Munich, Germany.

List of taxa

Crambinae Latreille, 1810

Type genus *Crambus* Fabricius, 1798.

Tribe Argyriini Munroe, 1995

Type genus: *Argyria* Hübner, 1818.

Chrysocatharylla agraphellus (Hampson, 1919)

Crambus agraphellus Hampson, 1919a: 290. Type locality: Seychelles.
Chrysocatharylla fusca Bassi, 1999: 179, figs. 65, 78. Type locality: RSA. Syn. n.

MATERIAL EXAMINED. 1♂, Mozambique, Maputo Province, Maluana (lux), 22.I.2008, leg. Palladino, Sciarretta, GS 5391 GB, CB.

DESCRIPTION (Figure 1G). Bassi, 1999: 179; Shaffer & Munroe, 2007: 69. In the forewings the zigzag shaped medial and post-medial streaks are more or less (Bassi, 1999, fig. 78) evident.

MALE GENITALIA. Bassi, 1999: 178, figs. 34, 35; Shaffer & Munroe, 2007: 69, figs. 342-344.

FEMALE GENITALIA. Bassi, 1999: 179, fig. 65; Shaffer & Munroe, 2007: 69, fig. 336.

REMARKS. Species described from Aldabra, Seychelles. After the examination of additional fresh material of both sexes this species proved to be distributed in coastal African areas from Tanzania to South Africa. It has a rather variable habitus, light brown to dirty white. *Chrysocatharylla fusca* (Bassi, 1999) is a dark form for which the genitalia perfectly match those of Aldabran and other African females.

DISTRIBUTION. Seychelles, Tanzania, Mozambique and northern RSA coast until Durban.

Chrysocatharylla oenescentellus (Hampson, 1986)

Crambus oenescentellus Hampson 1896: 933-934. Type locality: [Kenya] British East Africa.

MATERIAL EXAMINED. 1♂, Mozambique, Maputo Province, Zitundo Tintigala Lodge forest (lux), 19.I.2008, leg. Palladino, Sciarretta, GS 5378 GB, CB.

DESCRIPTION. Hampson, 1896: 933-934.; Bassi, 1999: 171, 172, fig. 80.

MALE GENITALIA. Bassi, 1999: 172, figs. 43, 44.

FEMALE GENITALIA. Bassi, 1999: 172, fig. 47.

DISTRIBUTION. Kenya, Mozambique, RSA. A species found from coastal level up to 600 m.

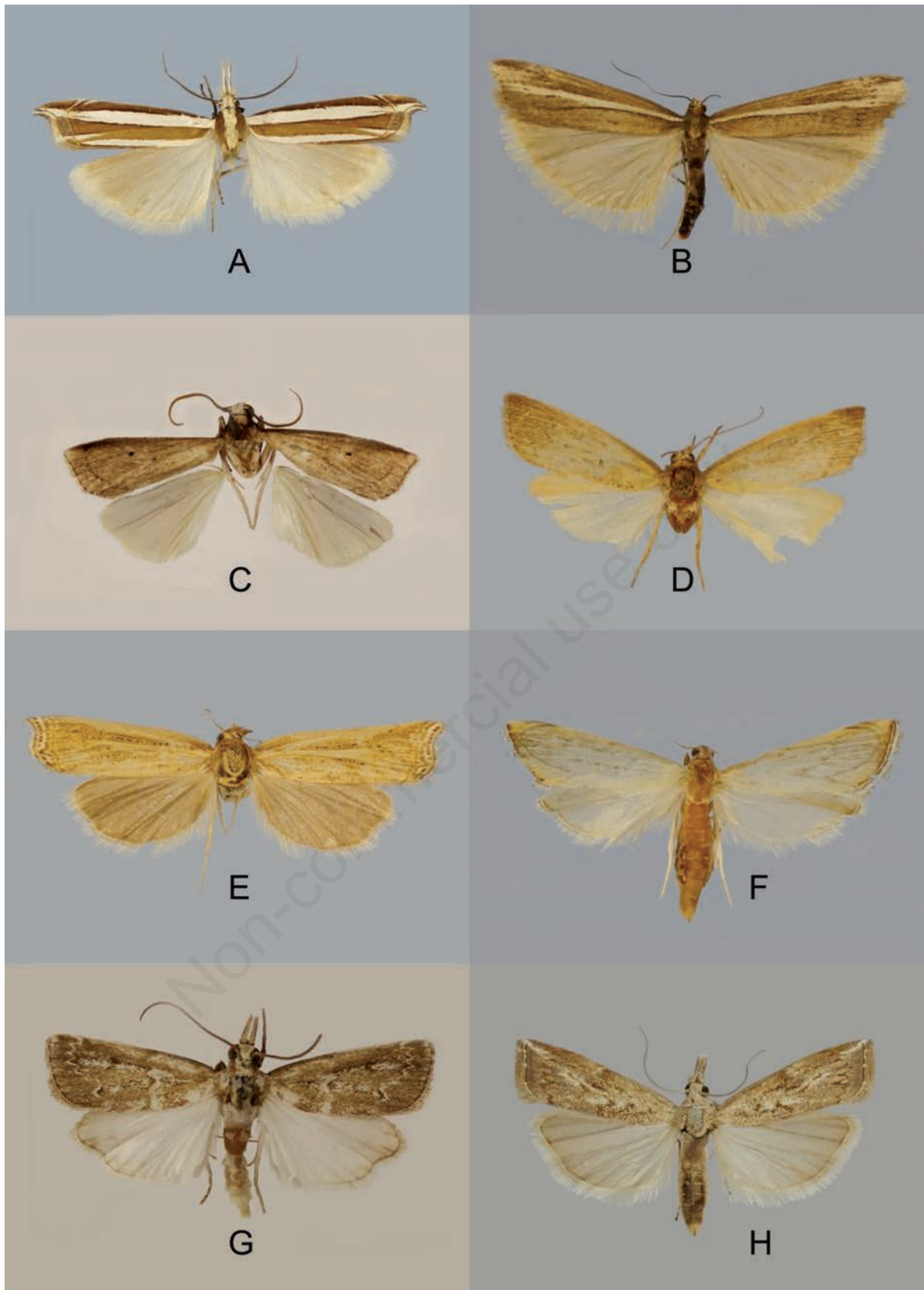


Figure 1. Adults of Crambinae spp. A) *Angustalius casandra* Bassi sp.n., male paratype, RSA, wingspan 26 mm. B) *Crambus bellinii* Bassi sp. n., holotype, wingspan 29 mm. C) *Calamotropha virginiae* Bassi sp. n., holotype, wingspan 20 mm. D) *Calamotropha dagamae* Bassi sp. n., holotype, wingspan 28 mm. E) *Ancylolomia parentii* Bassi sp. n., female paratype, wingspan 24.5 mm. F) *Donacoscaptes* sp., female, Mozambique, wingspan 16 mm. G) *Chrysocatharylla agraphellus* (Hampson), male, RSA, wingspan 20 mm. H) *Culladia achroellum* (Mabille), female, Ethiopia, wingspan 17 mm.

Tribe Chiloini Heinemann, 1865

Type genus: *Chilo* Zincken, 1817.

Chilo orichalcociliella (Strand, 1911)

Diatraea orichalcociliella Strand, 1911: 91. Type locality: Tanzania.

Diatraea argyrolepis Hampson, 1919b: 54. Type locality: [Malawi] Br[itish] C[entral] Africa.

MATERIAL EXAMINED. 1♂, Mozambique, Maputo Province, Zitundo Tintigala Lodge forest (lux), 19.I.2008, leg. Palladino, Sciarretta, CB; 1♂, 2♀♀, Mozambique, Maputo Province, Maluana (lux), 22.I.2008, leg. Palladino, Sciarretta, CB.

DESCRIPTION. Bleszyński 1970a: 162, 164, 165, pl. 2 fig. 5.

MALE GENITALIA. Bleszyński 1970a: 164, figs. 85-87.

FEMALE GENITALIA. Bleszyński 1970a: 164, figs. 91, 100.

DISTRIBUTION (in brackets if not verified by GB). Botswana, Democratic Republic of the Congo, [Kenya], [Madagascar], Malawi, Mozambique, RSA, Swaziland, Tanzania.

Tribe Crambini Latreille, 1810

Type genus: *Crambus* Fabricius, 1798.

Crambus bellinii Bassi, sp. n.

MATERIAL EXAMINED. Holotype ♂: 1 - Ethiopia, Bale Mts. Sanetti Plateau, 4000 m, 28.IX.2009 Leg. Palladino, Parisi, Sciarretta; 2 - Holotypus *Crambus bellinii* sp. n. G. Bassi det. 2012; 3 - Collezione Bassi n° 43990. CB.

Paratypes: 2 ♂♂, same data as holotype, GS 5380 and 5510 GB, CB and MHNG.

ETYMOLOGY. The species is named after the Italian composer Vincenzo Bellini (1801-1835).

DIAGNOSIS. *Crambus bellinii* Bassi sp. n. is most similar in facies to *C. sjoestedti* Aurivillius (Bassi 1992, fig. 3), but the ground colour of *C. bellinii* is darker (Figure 1B). The male genitalia are close to those of *C. sjoestedti* Aurivillius (Bassi 2000, figs. 22-24), but the male genitalia of *C. bellinii* (Figure 2A) are distinct in possessing a more abundantly spined costal process on the valva and the vesica with several cornuti, compared to the less spined costal process and vesica with four cornuti in *C. sjoestedti*.

DESCRIPTION (Figure 1B). Head: labial palpi 3.1 times diameter of compound eye, bronze brown with inner surface white; maxillary palpi basally dark brown, distally bronze brown; antenna laminate, black with bronze brown costa; ocelli well developed; chaetosemata moderate; frons rounded, clearly produced, brown; vertex brown. Thorax: patagium brown, medially paler; tegulae bronze brown; notum brown, medially white; legs bronze brown with inner surface paler and tibial spurs thin and delicate; hindlegs with tarsomeres spined. Forewing: wingspan 28-30 mm; ground colour bronze brown sprinkled with black scales; apex rounded; medial stripe white, going through the cell, expanding distally toward termen; two terminal black dots near tornus; fringe white tipped brown near apex, bronze brown around tornus. Hindwing white suffused yellowish brown; fringe pale yellow with short scales darker. Abdomen bronze brown with paler anal tuft.

MALE GENITALIA (Figure 2A). Uncus 1.3 longer than gnathos, slightly enlarged medially and down curved apically. Gnathos ring-forming, strongly down curved at half its length. Tegumen elongated, partially fused with uncus, bearing two small apical pedunculi. Vinculum broad, subrectangular, slightly bilobed dorsally and slightly produced dorsally; membrane behind junction tegumen - vinculum with many long and narrow scales. Pseudosaccus well developed. Juxta small, bifurcate. Valva with strong costal process bent downward and with many pointed teeth. Cucullus bent upward, membranous. Sacculus basally strongly sclerotized, then narrower and membranous. Phallus with phallobase bent upward; vesica with sub-apical row of at least 7 small cornuti and many scobinations.

FEMALE. UNKNOWN.

DISTRIBUTION. The new species is only known from the type locality in Ethiopia.

Angustalius malacellus (Duponchel, 1836)

Crambus malacellus Duponchel, 1836: 61, 62, Pl. 270, fig. 5. Type locality: Malaga, Spain.

Crambus concinellus Walker, 1863: 165. Type locality: unspecified. Synonymy doubtful.

Crambus hapaliscus Zeller, 1852: 71, 72. Type locality: RSA. Syn. rev. Lectotype (present designation) ♂: 1 - Caffraria [printed], 2 - 236 [handwritten], 3 - *Crambus hapaliscus* [handwritten]; 4 - Lectotypus *Crambus hapaliscus* Zeller, G. Bassi des. 2013, NHRM.

MATERIAL EXAMINED. 1♀, Ethiopia, Omo Valley, Dowro Zone, Tarcha, 1400 m, (lux), 16.IV.2009, legit Sciarretta & Spina.

DESCRIPTION. Bleszyński, 1965: 230, pl. 13 fig. 143.

MALE GENITALIA (Figure 3I-N). Uncus 0.6 length of valva, distally gently downcurved, with moderately pointed tip. Gnathos rounded, 0.3 length of uncus. Tegumen narrow, with two small pedunculi and basally two small appendices angulares. Vinculum with subtriangular dorsal extension. Pseudosaccus well developed. Juxta membranous. Valva with costa sinuate, cucullus rounded and broad subtriangular saccular process. Phallus slightly longer than valva; vesica with one large cornutus and many tiny cornuti and scobinations. Variation: uncus length and size of cornuti are slightly variable (Figure 3J-L); a male from Botswana shows a smaller but well defined second cornutus (Figure 3N).

FEMALE GENITALIA (Figure 3B-H). Papillae anales subrectangular, with setae mostly moderate in length. Apophyses posteriores and anteriores absent. Abdominal segment VIII narrow and lightly sclerotized. Sterigma with lamella antevaginalis produced, with tip concave to gently rounded. Ductus bursae longer than corpus bursae, basally sclerotized, then sinuate, and distally wrinkled. Ductus seminalis originating medially from ductus bursae. Corpus bursae suboval, scobinate, with two signa. Variation: shape of tip of lamella antevaginalis of sterigma (Figure 3C-H) and size of corpus bursae.

DISTRIBUTION. Southern Europe, Middle East, Africa (in brackets, if not verified by GB): Angola, Botswana, Democratic Republic of the Congo, Ethiopia, Kenya, Malawi, Mauritius, Mozambique, Namibia, RSA, [Ruanda], Swaziland, Sierra Leone, [Tanzania].

REMARKS. The status of *Crambus hapaliscus* has been in a state of confusion ever since the description. Zeller (1852) described the species from at least two male specimens (p. 72, wingspan) caught by Wahlberg in *terra natalensis*, but he expressed some doubts on the validity of the species as he (p. 71) wrote: *Crambo malacello adeo similis, ut de specierum diversitate dubitem* [*C. malacellus* is so similar that I have some doubts on diversity between these species]. Afterward, it was considered a valid species, a synonym of *Crambus malacellus* (Turner 1904: 163), and a subspecies of *C. malacellus* (Bleszyński & Collins 1962: 218; Vari *et al.*, 2002: 96). The lectotype's abdomen seems to have been lost in these last few years as it is still present in a recent picture published on the Stockholm Museum website http://www2.nrm.se/en/lep_nrm/h/crambus_hapaliscus.html. The other specimen (paralectotype) appears to be lost. We found a second specimen determined as *C. hapaliscus* in the Zeller's collection, BMNH, but it was not collected by Wahlberg, so it was probably acquired by Zeller after the description of *C. hapaliscus*; it is a female and, moreover, it belongs to a different species, described below. The examination of the types of the two species and a large number of African, European and Middle Eastern specimens confirmed that *malacellus* and *hapaliscus* are conspecific as no critical genitalic differences were found between dissected specimens.

Crambus concinellus Walker was described from 6 specimens from South Africa, Ceylon [Sri Lanka] (2), Sydney (2), and Moreton Bay [Australia] without specifying either holotype or type locality. Turner

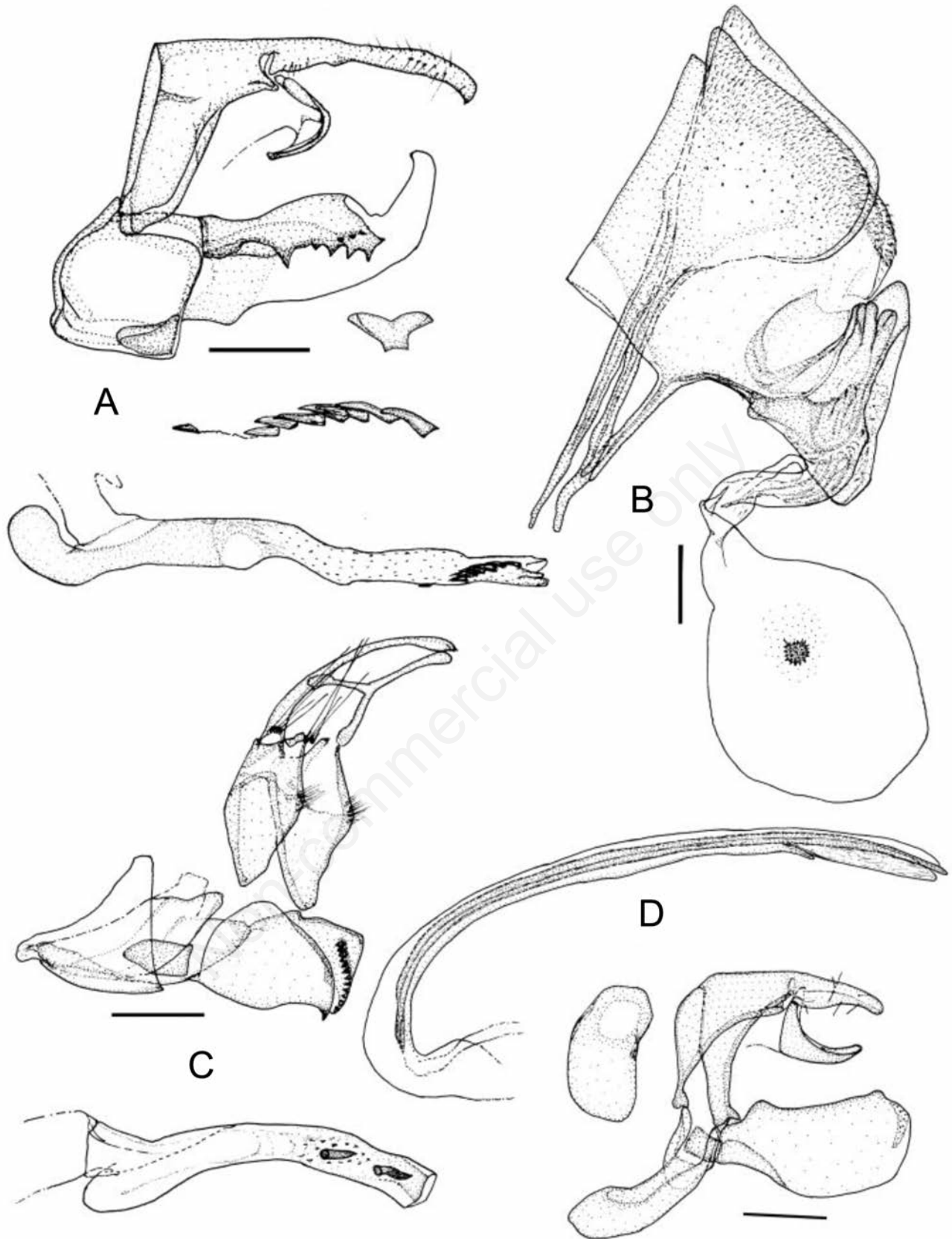


Figure 2. Genitalia of Crambinae spp. A) *Crambus bellinii* Bassi sp. n., male paratype, GS 5380 GB, whole genitalia without phallus and juxta; juxta, cornuti enlarged, phallus with everted vesica. B) *Donacoscytes* sp., female GS 5383 GB, Mozambique. C) *Calamotropha virginiae* Bassi sp. n., male holotype. D) *Ancylolomia parentii* Bassi sp. n., male holotype, juxta between phallus and rest of genitalia.

(1904: 163) and Bleszyński & Collins (1962: 218) considered it as a synonym of *C. hapaliscus*. Unfortunately, the type series is mixed as the Australian specimens (3, GS 3725 GB) belong to another species while the South African specimen is *A. malacellus*. This nomenclatural problem will be treated in a forthcoming paper after the study of the Sri Lankan syntypes.

Angustalius casandra Bassi sp. n.

MATERIAL EXAMINED. Holotype ♀: 1 - [Mozambique, Maputo Province, Maculane, 26°51'S, 32°21'E] Type [circular red-edged label]; 2 - Makulane 1906 [handwritten, green ink]; 3 - Coll. Dr. Audéoud; 4 - GS 2719 SB; 5 - [GS] 70 MHNG; 6 - *C. brachiiferus* Hmps. [handwritten, red ink, rectangular green-edged determination label of J. de Joannis 1922]; 6 - *Bleszynskia casandra* Bl. det. Bleszyński ♀; 7 - Holotypus ♀ *Angustalius casandra* G. Bassi det. 1995, MHNG.

Paratypes: RSA, Kwa-Zulu Natal. - 1 ♀, Dukuduku forest, 28 32 AD, 20-29 Dec[ember] 1962, Collector unknown, GS 3302 GB, TMSA; 1 ♂, same labels, 01 Jan[uary] 1963, GS 3441 GB, TMSA; 1 ♀, Karkloof, 25 Jan[uary] [19]17, A.J.T. Janse, GS 3783 GB, TMSA; 1 ♀, Karkloof, Natal, 10 Jan[uary] [19]17, A.J.T. Janse, GS 3798 GB, CB; 1 ♀, *Cr. hapaliscus* Z. Caffr[orum terra] Dohiman, Z[eller], Zell[er] Coll[ection] 1884, GS 5598 BM, BMNH(E)#1054423, BMNH; 1 ♂: Natal, Van Reenen, Drakensberg, Dec[ember] 1926, R.E. Turner Brit. Mus. 1927-25, B-368, GS 1283 SB (5751 BM), BMNH; 1 ♂: Umkomaas, 24.I.[19]14, A.J.T. Janse: 1919-17, GS 1300 SB (5754 BM), *Crambopsis* det. Bleszynski 1960, BMNH; 1 ♀: Umkomaas, 28.I.[19]14, A.J.T. Janse, 1919-17: BMNH, GS 1284 SB (5753 BM), *Crambopsis* det. Bleszynski 1960, BMNH; 1 ♂, Umkomaas, 18.I.[19]14, A.J.T. Janse, GS 3797 GB, TMSA; 1 ♂, Nyalazi Forest, 25-28.III.1968, Potgieter & Goode, GS 3679 GB, TMSA. RSA, Gauteng. - 1 ♀, Pretoria, 20.10.[19]11, A.J.T. Janse, GS 3790 GB, TMSA. RSA, Limpopo. - 1 ♂, W[est] T[rans]v[er]v[er], Waterberg, Farm Sterkfontein, 24°26'S 27°51'E, 21-24.XI.1994, M. Krüger legit, GS 3835 GB, CB. ZAMBIA. - 1 ♂, Livingstone, Miss Powell 1912 - 320 - *Crambus brachiiferus* Hmps, GS 3617 GB, SAM.

ETYMOLOGY. The species is probably named after Spanish spelling of the eponymous character of the greek mythology, legendary Trojan figure, daughter of Priam and Hecuba.

DIAGNOSIS. In wing pattern this species closely resembles its congeners *A. malacellus* and *A. besucheti* (Bleszyński). However, it is usually larger than *A. malacellus* and its medial stripe is silvery white without the subterminal maculation (only a line in some males) present in *A. besucheti*. The new species is also distinguished by features of the male and female genitalia. The main differences in male genitalia between these three species are: i) the presence on the tegumen of well-developed appendices angulares, reduced in *A. malacellus* and shorter in *A. besucheti* (Bleszyński, 1963b, fig. 56); i) a phallus longer than the whole genitalia with a strong cornutus; both phallus and cornutus are shorter in *A. malacellus* and in *A. besucheti*. The female genitalia are easily recognized by the long and wide ductus bursae medially strongly bulged.

DESCRIPTION (Figure 1A). Male. Head: labial palpi white above, bronze brown below; maxillary palpi basally bronze brown, then white; antennae thickened, basally white, then brown with bronze brown costa; ocelli and chaetosemata well developed; frons dirty white, rounded, moderately produced; vertex white with posterior margin of compound eye bronze brown. Thorax: patagium medially white and laterally bronze brown; tegulae bronze brown; notum white suffused yellowish. Legs: forelegs dark bronze brown, mid- and hindlegs bronze brown with inner surface dirty white and tarsomeres bronze brown annulated with white, tibial spurs white with upper margin bronze brown. Forewing: wingspan 23-26 mm; ground colour bronze brown; costal line bronze brown basally and dirty white distally; apex strongly hooked; medial stripe large, bordered black lines, crossed by subterminal lines, ending at termen, in some males with short, brown longitudinal dash before subterminal lines; dorsum with white stripe ending at subterminal lines; dorsal line basally

white and black or bronze brown distally; white subtriangular stria from tornus to 0.7; subterminal lines brown and silvery white, angled at hook level; subterminal area with white scales tipped black or brown; terminal line black to brown; fringe white, tipped bronze brown at apex, then grey brown, more whitish near tornus at ending of subtriangular stripe. Hindwing white suffused brown; fringe white.

Female. Essentially as described for male except wingspan 24-28 mm, antenna simple and ground colour slightly darker.

MALE GENITALIA (Figure 3O). Uncus subcylindrical, distally down curved with moderately pointed tip. Gnathos 0.6 length of uncus, suboval. Tegumen stout, shorter than uncus; appendices angulares 0.6 length of uncus, distally downcurved and with rounded tip. Vinculum stocky, 0.6 length of tegumen, with moderate dorsal extension. Pseudosaccus poorly developed. Juxta membranous. Valva basally broad and sclerotized, with inner margin weakly crested; distally membranous, narrow, with rounded cucullus. Phallus longer than vinculum + valva, with well-developed phallobase; vesica with one conical cornutus 0.5 length of phallus, and some scobinations.

FEMALE GENITALIA (Figure 3A). Papillae anales stout, with very short apophyses posteriores. Abdominal segment VIII lightly sclerotized; apophyses anteriores absent. Sterigma well sclerotized with lamella antevaginalis produced and with upper margin weakly concave. Ductus bursae 1.4 longer than corpus bursae, wrinkled and rather sclerotized basally, strongly bulged medially and wrinkled distally. Corpus bursae suboval, scobinate, with two large signa. Ductus seminalis emerging medially from bulge of ductus bursae.

DISTRIBUTION. Mozambique, RSA, Zambia.

REMARKS. The species name, *casandra*, was a manuscript name of S. Bleszyński. We select as holotype the only female with Bleszyński's original label *holotype* both on the adult pin and on the genitalia slide.

Crambopsis de Lattin, 1952 is a junior homonym of *Crambopsis* Walker, 1865: 634 (Lepidoptera: Noctuidae). *Bleszynskia* de Lattin, 1961 was established as the objective replacement name for *Crambopsis* de Lattin, 1952. It was synonymized with *Angustalius* by Bleszyński (1965: 229).

Makulane was a Swiss Mission in the Maputo Province active in the last decades of the 1800s and first decades of the 1900s. We were not able to trace this locality on modern maps, but we know from de Joannis (1927: 181) and from some pictures of the early 1900s published on the International Mission Photography Archive of the University of Southern California Digital Library, <http://digitallibrary.usc.edu/cdm/search/field/rightsc/searchterm/DM-%C3%A9change> that it was South of Maputo, close (2 kilometres) to the Amatongaland (NE corner of Kwa-Zulu Natal, RSA) border and to the Maputo (Usutu) River, 80 to 100 kilometres away from the sea. Thus, it was most probably situated in today's area between the Maputo River and Maculane - Lagoa Maculane, 26°51'S, 32°21'E.

The paratype from Zeller's collection (BMNH) is quite atypical, especially in wingspan, only 16 mm (K. Tuck, pers. comm.), and in genitalia, with the ductus bursae basally less sclerotized than in other specimens. However, the medial bulge of the ductus bursae and other characteristics well match those of the holotype of *A. casandra*.

Pediasia ferruginea Bleszyński, 1963

Pediasia ferruginea Bleszyński, 1963a: 2,3. Type locality: Ethiopia.

MATERIAL EXAMINED. 1 ♂, Ethiopia, Asella, 2500 m, 2.III.2008, in tsetse trap, Leg. Sciarretta, Trematerra, CB.

DESCRIPTION. Bleszyński 1963a: 2, 3, figs. 20, 21.

MALE GENITALIA. Bleszyński 1963a: fig. 6.

FEMALE GENITALIA. Bleszyński 1963a: fig. 7.

DISTRIBUTION. Ethiopia, Kenya, RSA, Tanzania.

Culladia achroellum (Mabille, 1900)

Crambidion achroellum Mabille, 1900: 748. Type locality: Madagascar.

MATERIAL EXAMINED. Ethiopia, 1 ♀, Bale Mountains, Harena forest,

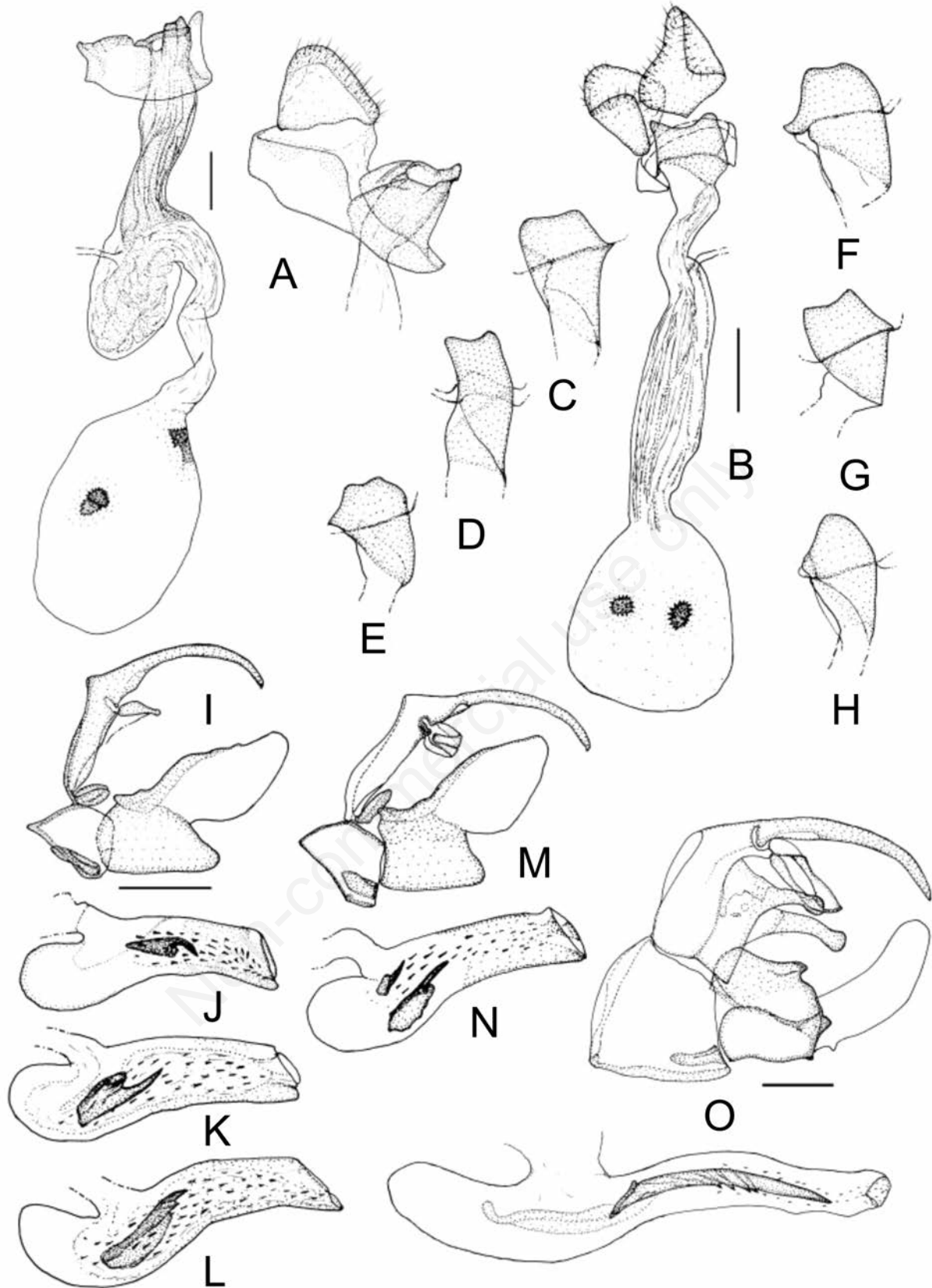


Figure 3. Genitalia of Crambinae spp. A) *Angustalius casandra* Bassi sp. n., female paratype, GS 3798 GB, RSA; lateral view of papillae anales, abdominal segment VIII and sterigma of holotype. B) *Angustalius malacellus* (Duponchel), females: holotype, GS 998 GB, Spain, Malaga; C), sterigma, GS 3274 GB, Tanzania; D), sterigma, GS 5175 GB, Mauritius; E), sterigma, GS 3465 GB, RSA; F), sterigma, Italy, Piedmont, GS 3503 GB; G), sterigma, Italy, Calabria, GS 1137 GB, H), sterigma, Italy, Piedmont, GS 2284 GB. I) *Angustalius malacellus* (Duponchel), males; Sierra Leone, GS 3135 GB; J) the same, phallus; K) phallus, Italy, Piedmont, GS 3502 GB; L) phallus, Italy, Basilicata, GS 5484 GB; M) Botswana, GS 3760 GB; N) the same, phallus. O) *Angustalius casandra* Bassi sp. n., male paratype, GS 3441 GB, RSA.

Karcha Camp, 2350 m, (lux) 26.IX.2009, Leg. Palladino, Parisi, Sciarretta, CB.

DESCRIPTION. Bleszyński, 1970b: 47, 48. We show an adult image (Figure 1H), not published in 1970 Bleszyński's revision of the genus *Culladia*.

MALE GENITALIA. Bleszyński, 1970b: fig. 1.

FEMALE GENITALIA. Bleszyński, 1970b: fig. 4.

DISTRIBUTION (in brackets, if not verified by GB). Botswana, [Democratic Republic of the Congo], Ethiopia, Gambia, Kenya, Madagascar, Mauritius, Mozambique, Namibia, Nigeria, Réunion, RSA, Saudi Arabia, Seychelles, Sudan, Tanzania, Yemen, Zimbabwe.

Tribe Haimbachiini Landry, 1995

Type genus: *Haimbachia* Dyar, 1909.

Donacoscapes sp.

MATERIAL EXAMINED. 2 ♀♀, Maputo Province, Zitundo Tintigala Lodge (lux), 19.I.2008, leg. Palladino, Sciarretta, GS 5383 GB, CB.

DESCRIPTION (Figure 1F). Head: labial palpi grey brown irrorated with white scales, 3 times diameter of compound eye; maxillary palpi light brown; antenna simple, yellow brown with white costa; ocelli absent; chaetosemata moderate; frons rounded, slightly produced, white; vertex white. Thorax: patagium white; tegulae white; notum white, medially yellow brown; forelegs blackish brown with outer surface pale yellow; mid and hindlegs pale yellow; outer tibial spur slightly longer than inner one. Forewing: wingspan 16 mm; ground colour yellow brown with costa yellow; apex rather acute, pale yellow; wing venation marked by brown striae between postmedial and subterminal fasciae; postmedial fascia rather indistinct, oblique; subterminal fascia double, curved, zigzag-shaped at dorsum, ending at costa with two dark brown dashes; subterminal area yellow, irrorated with dark brown scales in middle; terminal line dark brown; fringe with both long and short scales ivory white tipped dark brown. Hindwing pale yellow sprinkled with brown scales; indistinct terminal line brown; fringe with short scales white tipped brown and long scales white. Abdomen pale yellow.

MALE. Unknown.

FEMALE GENITALIA (Figure 2B). Papillae anales stocky, distally moderately upturned. Apophyses posteriores twice the length of apophyses anteriores. Abdominal segment VIII well developed, with sternite less sclerotized, with well-developed bridge to sterigma. Apophyses anteriores narrower than apophyses posteriores. Ostium bursae opening in sterigma as long as ductus bursae; sterigma with lamella antevaginalis produced and triangular, less sclerotized than the bilobed lamella postvaginalis. Ductus bursae basally wrinkled. Ductus seminalis originating basally on ductus bursae. Corpus bursae 1.7 longer than ductus bursae, scobinated up to single signum.

REMARKS. This species is very probably new to science, but tribe Haimbachiini needs a whole revision both at the generic and the specific levels. We prefer to prevent further possible confusion by describing the species informally until a revision can be undertaken and more material studied. We use the generic name *Donacoscapes* Zeller because it is the oldest available name among the Haimbachiini genera grouped by Bleszyński (1967) under *Acigona* Hübner. *Acigona* usage is incorrect for Crambinae species as it was demonstrated a Noctuidae genus, but we think Bleszyński studies must be the basis to start any revision of the tribe.

Tribe Prionapterygini Landry, 1995

Type genus: *Prionapteryx* Stephens, 1834.

Surattha africalis Hampson, 1919

Surattha africalis Hampson, 1919 a: 67-68. Type locality: Tanzania.

MATERIAL EXAMINED. 1♂, Mozambique, Maputo Province, Maluana (lux), 22.I.2008, leg. Palladino, Sciarretta, CB.

DESCRIPTION. Bassi & Mey, in Mey 2011: 236, pl. 36, fig. 4.

MALE GENITALIA. Bassi & Mey, in Mey 2011, figs. 253-266.

DISTRIBUTION. Botswana, Mozambique, Namibia, RSA, Tanzania.

Unplaced genera

The following species belong to genera of unclear attribution to actual Crambinae tribes.

Calamotropha paludella (Hübner, 1823-1824)

Tinea paludella Hübner [1824] 1796: Pl. 68, figs 452-453. Type locality: Europe.

Chilo obtusellus Stainton, 1856: 33. Type locality: England.

Chilo parramattellus Meyrick, 1879: 178. Type locality: Australia.

Conocrambus calamosus Hampson, 1919 a: 443. Type locality: RSA.

Crambus carpherus Hampson, 1898: 159. Type locality: RSA.

Crambus durandi D. Lucas, 1931: 95. Type locality: France.

Crambus typhivorus Meyrick, 1932: 344. Type locality: India.

DESCRIPTION. Bleszyński, 1965: 145, pl. 6 fig. 77.

MALE GENITALIA. Bleszyński, 1965: 145, pl. 46, fig. 77.

FEMALE GENITALIA. Bleszyński, 1965: 145, pl. 95, fig. 77.

MATERIAL EXAMINED. 1♀, Mozambique, Maputo Province, Maluana (lux), 22.I.2008, leg. Palladino, Sciarretta, CB.

DISTRIBUTION (in brackets, if not verified by GB). Worldwide, except America. In Africa: Botswana, Democratic Republic of the Congo, Gambia, Kenya, [Madagascar], Mozambique, RSA, Uganda.

Calamotropha virginiae Bassi, sp. n.

HOLOTYPE ♂: 1 - Mozambique, Maputo Province | Maluana (lux), 22.I.2008 leg. Palladino, Sciarretta; 2 - GS 5382 GB; 3 - Holotypus *Calamotropha virginiae* sp. n. G. Bassi det. 2012; 3 - Collezione Bassi n° 44010. CB.

ETYMOLOGY. The new species is named in honour of Dr. Virginia Aguiar, Portugal, for her support during the entomological expeditions to Mozambique.

DIAGNOSIS. *Calamotropha virginiae* Bassi sp. n. is most similar to *C. heliocausa* Wallengren, *C. wallengreni* Bleszyński, *C. bicornutella* Bleszyński and *C. psaltrias* (Meyrick) (Bleszyński, 1961, pl. XLI: 85, 86, 88; pl. XL: 83) in having a thick brown costal streak, but it is distinguished by the well-defined subterminal fascia and smaller wingspan. The male genitalia are distinguished from those of its congeners by the blunt cucullus of the valva associated with a row of subterminal teeth.

DESCRIPTION (Figure 1C). Head: labial palpi 3 times diameter of compound eye, basally dark brown, distally dirty white sprinkled with dark brown scales, with inner surface white; maxillary palpi dark brown with dirty white tip; antenna deeply serrate, brown with bronze brown costa; ocelli subvestigial; chaetosemata reduced; frons rounded, rather produced, white; vertex white. Thorax: patagium greyish white, laterally dark brown; tegulae dark brown with brown tip; notum brown; legs bronze brown with inner surface creamy brown and tibial spurs of different length: inner one 0.3 length of tarsomere I, bronze brown, outer one 0.6 length of tarsomere I, creamy brown. Forewing: wingspan 20 mm; ground colour pale brown irrorated with brown scales; large costal area dark brown; apex rather acute; a small brown dot at half of wing length; a larger blackish brown dot in cell; subterminal fascia narrow, curved, dark brown; terminal line complete, blackish brown; fringe with short scales white and long scales pale brown. Hindwing white with grey and yellowish grey suffusion; fringe white.

MALE GENITALIA (Figure 2C). Uncus 1.3 longer than gnathos, gently down curved distally and with pointed tip. Gnathos delicate, with rounded tip. Tegumen wide, largely membranous in distal third and slightly bulged ventrally. Vinculum wide, slightly shorter than valva, with pointed dorsal extension. Pseudosaccus well developed. Juxta

membranous. Valva with blunt and sclerotized cucullus and arched row of subapical teeth; internal fold of valva ending with a tooth. Phallus slightly down-curved, distally with lateral sclerotizations; vesica with two cornuti and scarce scobinations. Distal end of valva, median fold of valva, both sides of uncus, and tegumen on ventral bulge with various modified setae.

FEMALE. Unknown.

DISTRIBUTION. The new species is only known from the type locality in Mozambique.

REMARKS. Genus *Calamotropha* Zeller, 1863 is one of the most successful genera of Crambinae in the humid areas of the Old World. At present in GLOBIZ (Nuss *et al.*, 2014) list 107 species under this genus, 46 of which are present in the Afrotropical Region. *Calamotropha virginiae* and the following, *C. dagamae* Bassi, sp. n., seem to be well characterized both in facies and in genitalia, but a revision of all African species is needed. For example, two South-Eastern African species, *C. anticella* Walker, 1866, and *C. stachi* Bleszyński, 1961, are known only from the holotype without abdomen while another, *C. argenteociliella* Pagenstecher, 1893, is unknown as its type series is probably lost and no specimens determined as such are available.

Calamotropha dagamae Bassi, sp. n.

HOLOTYPE ♀: 1 - Mozambique, Maputo Province | ZitundoTintigala Lodge forest (lux), 19.I.2008 leg. Palladino, Sciarretta; 2 - GS 5417 GB; 3 - Holotypus *Calamotropha dagamae* sp. n. G. Bassi det. 2012; 4 - Collezione Bassi n° 44020. CB.

ETYMOLOGY. The species is named after the Portuguese explorer Vasco da Gama (1469-1524).

DIAGNOSIS. *Calamotropha dagamae* Bassi sp. n. differs from *C. stachi* Bleszyński, *C. bradleyi* Bleszyński (Bleszyński, 1961, pl. XXXVIII, figs. 74-76), and *C. toxophorus* de Joannis (1927: 152) in the yellow brown colouration of the wings and oblique subterminal fascia. It differs from *C. anticella* Walker (Bleszyński, 1961, pl. XXXV, fig. 62) in the oblique termen, in the absence of discal dot, and in the longitudinal medial strike in the forewing medially. The female genitalia are distinguished by the long apophyses posteriores associated with a moderately produced sterigma.

DESCRIPTION (Figure 1D). Head: labial palpi brown with upper margin creamy yellow and inner surface whitish, 3.2 X diameter of eye; maxillary palpi creamy yellow sprinkled with brown scales; antenna simple, brown with paler costa; ocelli sub-vestigial; chaetosemata absent; frons rounded, slightly produced, creamy yellow; vertex white suffused with pale brown scales. Thorax: patagium pale brown, laterally darker; tegulae brown, laterally paler; notum pale brown; legs yellow brown with inner side paler and tibial spurs long and thin. Forewing: wingspan 28 mm; ground colour pale yellow brown with costa paler; apex rather acute, brown; termen oblique; subterminal area brown with wing venations marked by whitish yellow streaks; streak along vein M2 continues below the cell up to wing basis; subterminal fascia thin, oblique, rather indistinct, dark brown; 6 terminal small black dots; fringe brown. Hindwing white suffused ivory yellow; fringe with short scales ivory yellow and long scales white.

MALE. Unknown.

FEMALE GENITALIA (Figure 4C). Papillae anales elongated, dorsally up-curved and ventrally down curved, covered by few long and many medium and short setae. Apophyses posteriores 1.3 longer than apophyses anteriores, narrow and only slightly bulged basally. Apophyses anteriores sub-triangular. Abdominal segment VIII ventrally membranous. Ostium bursae sub-oval, with sterigma strongly bulged and produced half the length of abdominal segment VIII. Ductus bursae slightly shorter than sterigma, wrinkled and moderately sclerotized. Ductus seminalis originating distally from ductus bursae. Corpus bursae 5.7 X longer than sterigma, completely scobinate, sub-cylindrical basally until 0.6, ending oval.

DISTRIBUTION. So far this species is known only from the type locality in Mozambique.

Ancylolomia parentii Bassi, sp. n.

HOLOTYPE ♂: 1 - Mozambique, Gaza Prov[ince] | Bilene, Laguna Camp, 5.XII.2011, lux | G. Bassi legit; 2 - GS 5460 GB; 3 - Holotypus *Ancylolomia parentii* sp. n. G. Bassi det. 2012; 4 - Collezione Bassi n° 44000. CB.

PARATYPE ♀: Mozambique, Maputo Province, Maluana (lux), 22.I.2008, leg. Palladino, Sciarretta, GS 5475 GB, CB.

ETYMOLOGY. The new species is named in honour of Prof. Dr. U. Parenti, University of Torino, well known specialist of Lepidoptera Elachistidae and mentor of the senior author, in appreciation for his precious advice and teaching.

DIAGNOSIS. *Ancylolomia parentii* Bassi sp. n. is superficially similar to *A. arabella* Bleszyński, 1965, but the medial stripe is creamy brown as opposed to dirty white in *arabella*. The male genitalia of *A. parentii* are most similar to those of *A. arabella* (Bleszyński, 1965: 418, pl. 29, fig. 337) and *A. nigrifasciata* Bassi (2004: 216, 217, figs. 3, 4), but those of *A. parentii* have an up-curved gnathos with a spoon-like tip, a dorsal extension of the vinculum of intermediate length, a stout valva without costal process, and a more strongly curved phallus.

The female genitalia of *A. parentii* (Figure 4A) are similar to those of *A. arabella* (Bassi 1990: 392, figs 9, 12), *A. melanothoracia* Hampson (Figure 4D), *A. obscurella* de Joannis (Figure 4B), and *A. nigrifasciata* (Bassi, 2004: 216, 217, fig. 5), differing in the stout papillae anales, the produced and broadly rounded lamella antevaginalis, and the lightly sclerotized lateral extension of the corpus bursae basally.

DESCRIPTION (Figure 1E). Male. Head: labial palpi brown, 2 times diameter of compound eye; maxillary palpi brown; antenna serrate, brown with paler costa; ocelli well developed; chaetosemata moderate; frons rounded, slightly produced, brown; vertex brown, paler distally. Thorax: patagium brown; tegulae dark brown, with long scales paler; notum basally brown, distally creamy brown; legs bronze brown with inner side creamy brown and tibial spurs small. Forewing: wingspan 17 mm; ground colour brown, paler in costal, dorsal and post-medial area; medial stripe creamy brown, ending below the cell; cell ochre brown with median row of black scales and bordered with silvery scales; wing veins around cell marked with short silver, ochre brown, and black stripes; sub-terminal band brown on inner side and silver on outer side, with mid-distal tooth reaching terminal line; sub-terminal area dirty white with 9 black dots above and 4 below mid-distal tooth; termen strongly sinuate with terminal line pale yellow; fringe with short scales silver and long scales white with silvery tip. Hindwing chestnut brown with yellow suffusion; fringe with short scales ivory yellow with brown tip and long scales dirty white.

FEMALE. Essentially as described for male except wingspan 24.5 mm, antenna thickened and ground colour slightly darker.

MALE GENITALIA (Figure 2D). Uncus stout, distally slightly down curved, with rounded tip. Gnathos as long as uncus, distally up curved, with spoon-like tip. Tegumen sub-triangular, basally enlarged. Vinculum narrow with broad dorsal extension 0.8 times as long as valva. Pseudosaccus sub-rectangular, moderate. Juxta slightly concave, plate-like. Valva moderately sclerotized, distally broadly rounded, with thickened costa and sacculus; areola with sensorial scales concentrated near cucullus. Phallus 3 X length of valva, down curved; vesica thick and wrinkled with very long and pointed cornutus as long as phallus shaft.

FEMALE GENITALIA (Figure 4A). Papillae anales wide, covered with dense modified setae. Apophyses posteriores three times longer than apophyses anteriores. Abdominal segment VIII well developed, laterally with sinuous sclerotization. Ostium bursae slightly produced. Sterigma with lamella antevaginalis broadly rounded and clearly produced. Ductus bursae 0.5 length of corpus bursae, more sclerotized medially. Corpus bursae suboval, basally delicately wrinkled; lateral extension

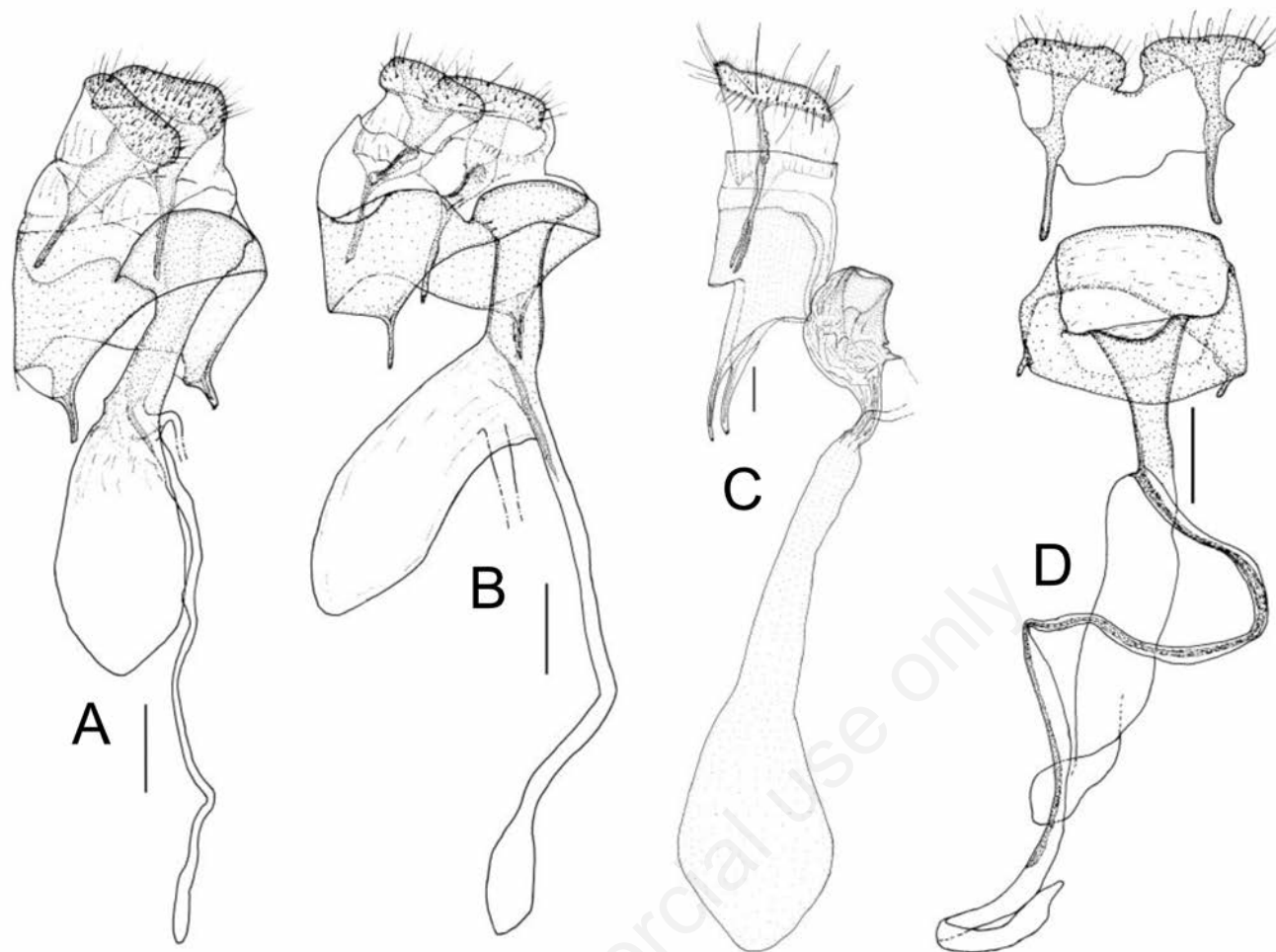


Figure 4. Female genitalia of Crambinae spp. A) *Ancylolema parentii* Bassi sp. n., paratype, GS 5475 GB. B) *Ancylolema obscurella* de Joannis, paratype GS 5434 GB. C) *Calamotropha dagamae* Bassi sp. n., holotype. D) *Ancylolema melanothoracia* Hampson, holotype.

thin, basally slightly sclerotized, twice as long as corpus bursae, ending in moderate bulge. Ductus seminalis opening basally on corpus bursae.

REMARKS. *A. melanothoracia* Hampson (1919: 143, 144) is only known from the BMNH female holotype labelled: 1 - Holotype; 2 - [TANZANIA, 05°06'S, 32°39'E] Germ[an] E[ast] Africa, Lulanguru n[ear] Tabora, leg. Carpenter; 3 - GS 7519 B[ritish] M[useum] Pyral[idae].

A. obscurella de Joannis (1927: 197) is distributed in Mozambique and Namibia. It was described as a variety of *A. lentifascialis* Hampson on a male type and 5 females cotypes. In effect it is a valid species and the holotype, undissected, is a female, not a male as said in the original description, bearing labels: 1 - [Mozambique, Maputo Province] Makulane X-XII. [19]07; 2 - *Ancylolema lentifascialis* v. *obscurella* n. v. type ♂ de Joannis [type ♂ bordered red]; 3 - *Ancylolema obscurella* de J. det. E.L. Martin 1954, 54 09 55. The holotype and remaining 4 paratypes (GS 5434 GB) are preserved in the MHNG. The 5th paratype was not located.

These two species belong to a complex in the *A. inornata* group (Bleszynski, 1970c; Bassi, 2013) well represented in the Afrotropical Region. This complex, which will be fully treated in a forthcoming paper, also includes *A. arabella* Bleszyński, *A. parentii* Bassi sp. n., *A. prepriella* Hampson and *A. nigrifasciata* Bassi.

DISTRIBUTION. The new species is only known from Southern Mozambique.

Conclusions

The material examined is too scarce to draw any zoogeographical conclusions, but even the study of such a small series of Crambinae allowed us to clarify the status of some species, improve our faunistic knowledge on the known taxa, and increase the number of species. Moreover, thanks to the expedition data, we know a little about the habitats in which the species were collected.

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