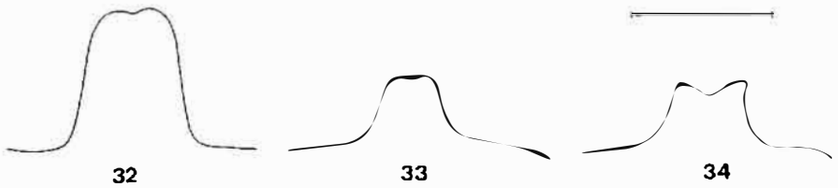
Edéage long de 0,56 mm; lame apicale de la capsule profondément échancrée (Fig. 34).

Etymologie: J'ai le plaisir de dédier cette espèce à mon très cher ami Jean-Claude MERCKX, en allusion à la réification de Franz KAFKA et au Cercle des Poètes Disparus (Ô capitaine, mon capitaine ...).

Matériaux examinés: Afrique du Sud, Cape Province, Lily Vlei Nature Reserve (33°56 S - 23°02 E), Gouna State Forest, II.1984, 1 ♂ (holotype) et 1 ♀ (J. KOEN leg.); Lily Vlei Nature Reserve (33°56 S - 23°02 E), IV.1983, 1 ♀, XII.1983, 1 ♀, I.1984, 1 ♀ (J. KOEN leg.); Lily Vlei Nature Reserve (33°56 S - 23°09 E), V.1983, 1 ♂ (J. KOEN leg.); Diepwallest Forest (33°56 S - 23°09 E), X.1983, 1 ♂ (J. KOEN leg.). Holotype et 4 paratypes (1 ♂, 3 ♀♀) au TMP, 2 paratypes (1 ♂, 1 ♀) dans ma collection.



Figs 32-34. Lame apicale de la capsule de l'édéage. 32: *Elaphidipalpus leleupi* JEANNEL; 33: *E. bansartae* n. sp.; 34: *E. merckxi* n. sp. Echelle: 0,1 mm.

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Some notes on the taxonomic status of the Pyraustinae (sensu MINET 1981 [1982]) and a check list of the Palaearctic Pyraustinae (Lepidoptera, Pyraloidea, Crambidae)

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Abstract

Remarks on the taxonomic rank of the Pyraustinae are followed by a redefinition of this group based on a combination of characters. A check list of the genera of the palaearctic Pyraustinae is given, some genera are transferred to other subfamilies.

Introduction

This checklist is a partial result of a morphological study on the Crambidae (sensu MINET, 1981 [1982]) where the systematic value of the tympanal organs is compared with other morphological structures (MAES, in prep.). Latinized nomenclature for the tympanal organs proposed earlier by MAES (1985) is used in this paper. The check list includes the taxa found in the Palaearctic region as delimited by DARLINGTON (1963).

At this moment there is some confusion about the taxonomic rank of the Pyraustinae: MUNROE (1976) considers the subfamily Pyraustinae with two tribes: the Pyraustini and Spilomelini. The same taxonomic ranks for these taxa are followed by HEPPNER and INOUE (1992) and in the check lists of the neotropical region (SOLIS, pers. comm.) and the australian region (SHAFFER, pers. comm.). The tribes Pyraustini and Spilomelini, sensu MUNROE, 1976 were given subfamilial rank by MINET 1981 [1982]. As defined here, the Pyraustinae or Pyraustini are considered monophyletic. For the moment I abstain from discussing the taxonomic rank (subfamily or tribe) since it remains to be investigated in relation to all other subfamilies and tribes in the Crambidae.

MINET 1981 [1982] defines the Pyraustinae on the basis of the following characters: in the tympanal organs, the spinulae are atrophied and venulae are convergent; in the male the mesothoracic tibia has a longitudinal groove where androconical scales are found; in the female genitalia the collar of the bursa copulatrix is often spinose.

In addition to the characters given by MINET (l.c.) the Pyraustinae are here defined on the combination of characters: males usually with subcostal retinaculum; valva with sella (after MARION (1952, 1961): medially directed clasper on the inside of the valva) and presence of an editum (= modified setae); tympanal organs with a narrow fornix tympani, in most genera this structure is clearly underneath the venula prima and the saccus tympani usually well developed; female genitalia with a rhomboid signum, a second signum may occur and in most species, an appendix bursae is present.

Not all species show all these characters simultaneously, some examples: The spinula is present in *Pagyda salvalis* WALKER, 1859 and *Paliga damastesalis* (WALKER, 1859), but the male genitalia of the former have a sella with editum, the fornix tympani is underneath the venula prima, the latter has a sella in the male genitalia, in the female genitalia, the corpus bursae bears a rhomboid signum and a second signum on the base of the appendix bursae.

The subcostal retinaculum is absent in *Lepidoplaga* WARREN, 1895, but characters from the genitalia (sella, rhomboid signum, appendix bursa) and tympanal organs (saccus tympani) place the genus in the Pyraustinae.

The appendix bursae and the signa are absent in *Paschiodes* HAMPSON, 1913, but the male genitalia and the tympanal organs place it in the "Pyraustinae".

The fornix tympani is rather broad in for example: *Achyra* GUENÉE, 1849, *Aurorobotys* MUNROE & MUTUURA, 1971, *Crypsiptya* MEYRICK, 1894, but the corpus bursae has two signa and an appendix bursa, the male genitalia have a sella with an editum, and the saccus tympani of the tympanal organs is obvious.

Genera of the Pyraustinae of the Palaearctic region

Achyra GUENÉE, 1849
  Dosara WALKER, 1859
  Eurycreon LEDERER, 1863
  Tritaea MEYRICK, 1884
  Achiria SHERBORN, 1932 misspelling
  Achyria SHERBORN, 1932 misspelling
Aglaops WARREN, 1892 — **Gen. Rev.** [1]
  Xanthopsamma MUNROE & MUTUURA, 1968 — **Syn. Nov.** [2]
Algedonia LEDERER, 1863

Anania HÜBNER, 1823
  Ennychia TREITSCHKE, 1828
  Ennichia DUPONCHEL, [1834] 1833 misspelling
  Ennychia LEDERER, 1863 homonym of *Ennychia* TREITSCHKE, 1828
Aurorobotys MUNROE & MUTUURA, 1971
Callibotys MUNROE & MUTUURA, 1969
Carminibotys MUNROE & MUTUURA, 1971
Circobotys BUTLER, 1879
Crypsiptya MEYRICK, 1894
  Coclebotys MUNROE & MUTUURA, 1969
Demobotys MUNROE & MUTUURA, 1969
Duzulla AMSEL, 1952
Ebulea DOUBLEDAY, [1849] 1850
Ecpyrrhorrhoe HÜBNER, [1825] 1816
  Ecpyrrhorrhoea HÜBNER, [1826] misspelling
  Ecpyrrhorrhoa AGASSIZ, 1846 misspelling
  Harpadispar AGENJO, 1952 — **Syn. Nov.** [3]
  Pyraustegia MARION, 1963
Euclasta LEDERER, 1855
  Ilurgia WALKER, 1859
Eumorphobotys MUNROE & MUTUURA, 1969
Eurrhypara HÜBNER, [1825] 1816
  Palpita HÜBNER, [1806] included in a rejected work
Gynenomis MUNROE & MUTUURA, 1968
Hyalobathra MEYRICK, 1885
  Isocentris MEYRICK, 1887
  Leucocraspeda WARREN, 1890
Lamprophaia CARADJA, 1925
Lepidoplaga WARREN, 1895 — **Gen. Rev.** [4]
Limbobotys MUNROE & MUTUURA, 1970
Loxostege HÜBNER, [1825] 1816
  Leimonia HÜBNER, [1825] 1816 — **Syn. Nov.** [5]
  Margaritia STEPHENS, 1827
  Boreophila GUENÉE, [1845] 1844
  Limonia AGASSIZ, 1847 misspelling
  Cosmocreon WARREN, 1892
  Maroa BARNES & MCDUNNOUGH, 1914
  Polingia BARNES & MCDUNNOUGH, 1914
  Parasitochroa HANNEMANN, 1964
Meridiophila MARION, 1963
Mutuuraia MUNROE, 1976
Nascia CURTIS, 1835
Nephelobotys MUNROE & MUTUURA, 1970
Opsibotys WARREN, 1890
Oronomis MUNROE & MUTUURA, 1968

Ostrinia HÜBNER, [1825]
Micractis WARREN, 1892
Eupolemarcha MEYRICK, 1937
Zeaphagus AGENJO, 1952
Pagyda WALKER, 1859
Paliga MOORE, [1886] 1884-7 **Gen. Rev.** [6]
Paracorsia MARION, 1959
Paratalanta MEYRICK, 1890
Microstega MEYRICK, 1890 **Syn. Nov.** [7]
Parbattia MOORE, 1888
Perinephela HÜBNER, [1825] 1816
Perinephele HÜBNER, [1826] 1816 misspelling
Perinephila HAMPSON, 1897 misspelling
Phlyctaenia HÜBNER, [1825] 1816
Polyctaenia HÜBNER, [1826] 1814 misspelling
Framinghamia STRAND, 1920
Placosaris MEYRICK, 1897
Prodasycnemis WARREN, 1892 **Gen. Rev.** [8]
Pronomis MUNROE & MUTUURA, 1968
Proteurrhypara MUNROE & MUTUURA, 1969
Psammotis HÜBNER, [1825] 1814
Psamotis HÜBNER, [1825] 1816 misspelling
Lemia GUENÉE, [1845] 1844
Lemiodes GUENÉE, 1854 an unjustified emendation of *Lemia*
Pseudopolygrammodes MUNROE & MUTUURA, 1969
Pyrausta SCHRANK, 1802
Botys LATREILLE, [1802]
Heliaca HÜBNER, [1806] rejected name
Heliaca HÜBNER, 1808 rejected name
Haematia HÜBNER, 1818
Heliaca HÜBNER, 1818 not nomenclaturally available
Pyraustes BILLBERG, 1820 an unjustified emendation of *Pyrausta* SCHRANK, 1802
Botis SWAINSON, 1821 an unjustified emendation of *Botys* LATREILLE, [1802]
Heliaca HÜBNER, 1822
Porphyritis HÜBNER, [1825] 1816
Syllythria HÜBNER, [1825]
Pyrausta HÜBNER, [1825] incorr. authorship
Panstegia HÜBNER, [1825] 1816
Perilypa HÜBNER, [1825] 1816
Ostreophana SODOFFSKI, 1837 misspelling
Ostreophena SODOFFSKI, 1837 unnecessarily replacement name for *Botis* SWAINSON, 1821
Rhodaria GUENÉE, [1845] 1844
Botis AGASSIZ, 1847 misspelling of *Botys* LATREILLE, [1802]
Herbula GUENÉE, 1854
Synchromia GUENÉE, 1854

Cindaphia LEDERER, 1863
Proteroeca MEYRICK, 1884 **Syn. Nov.** [9]
Sciorista WARREN, 1890
Autocosmia WARREN, 1892
Trigonuncus AMSEL, 1952
Rattana ROSE & PANJI, 1979
Sclerocona MEYRICK, 1890
Sinibotys MUNROE & MUTUURA, 1969
Sitochroa HÜBNER, [1825] 1816
Spilodes GUENÉE, 1849
Thliptoceras WARREN, 1890
Phycidicera SNELLEN, [1880] 1892
Mimocomma WARREN, 1895
Polychorista WARREN, 1896
Parudea SWINHOE, 1900
Toxobotys MUNROE & MUTUURA, 1968
Udonomeiga YAMANAKA, 1954
Uresiphita HÜBNER, [1825] 1816
Uresiphoetha AGASSIZ, 1847 unjustified emendation of *Uresiphita*
Mecyna GUENÉE, 1854 nec DOUBLEDAY, [1849] 1850
Yezobotys MUNROE & MUTUURA, 1969

Legend to the notes:

1: *Aglaops* WARREN was considered a synonym of *Pionea* GUENÉE, [1845] 1844 by HAMPSON (1899); the latter is a synonym of *Evergestis* HÜBNER, [1825] 1816. I consider *Aglaops* WARREN a good genus since the genitalia and tympanal organs are clearly different with those of *Evergestis* HÜBNER. (see also note nr. 2).

2: MUNROE & MUTUURA (1978) place *Botys furnacalis* GUENÉE sensu MEYRICK, 1886 = *Botys homaloxantha* MEYRICK, 1933 in the genus *Xanthopsamma* MUNROE & MUTUURA. The authors were not aware that this species is at the same time the type-species of *Aglaops* WARREN, 1892. *Xanthopsamma* MUNROE & MUTUURA is a junior subjective synonym of *Aglaops* WARREN.

3: The type species of *Harpadispar* AGENJO, *Botys diffusalis* GUENÉE, 1854, is congeneric (based on the valva, uncus and aedoeagus and ductus bursae and signa) with *Pyralis rubiginalis* HÜBNER, 1796 the type species of *Ecpyrrhorrhoe* HÜBNER.

4: *Lepidoplaga* WARREN was considered a synonym of *Pionea* GUENÉE, [1845] 1844 by HAMPSON (1899); the latter is a synonym of *Evergestis* HÜBNER, [1825] 1816. I consider *Lepidoplaga* WARREN a good genus.

5: *Leimonia* HÜBNER was placed as an unpublished synonym of *Pyrausta* SCHRANK, 1802 in the index at The Natural History Museum, London. The type-species of *Leimonia* HÜBNER, *Pyralis*

scutalis HÜBNER, [1813] 1796 is congeneric with the type-species of *Loxostege* HÜBNER, *Pyralis aeruginalis* HÜBNER, 1796 based on the genitalia and tympanal organs. *Leimonia* HÜBNER becomes a junior subjective synonym of *Loxostege* HÜBNER.

6: *Paliga* MOORE was considered a synonym of *Pyrausta* SCHRANK, 1802 by HAMPSON (1899). The genitalia and tympanal organs are clearly different from those of *Pyrausta* SCHRANK. I consider *Paliga* a good genus.

7: The type-species of *Microstega* MEYRICK, *Epicorsia pandalis* HÜBNER, [1825] 1816 is considered congeneric with the type-species of *Paratalanta* MEYRICK, *Botyodes ussurialis* BREMER, 1864. Both have the characteristic sclerotized hook on the valvae of the male genitalia. *Microstega* MEYRICK becomes a junior subjective synonym of *Paratalanta* MEYRICK.

8: *Prodasycnemis* WARREN was considered a synonym of *Pionea* GUENÉE, [1845] 1844 (HAMPSON, 1899), but *Pionea* GUENÉE is now a synonym of *Evergestis* HÜBNER, [1825] 1816. The genitalia of the type-species of *Prodasycnemis*, *Botys inornata* BUTLER, 1879, are typical of the Pyraustinae.

9: The type-species of *Proteroeca* MEYRICK, *Proteroeca comastis* MEYRICK, 1884 is congeneric with the type-species of *Pyrausta* SCHRANK, 1802, *Phalaena cingulata* LINNAEUS, 1758 based on the genitalia and tympanal organs. *Proteroeca* MEYRICK is a junior subjective synonym of *Pyrausta* SCHRANK.

In addition to the Pyraustinae genera discussed above, the following genera are transferred to another subfamily (sensu MINET, 1981 [1982]):

The type-species of *Panopsia* TURNER, 1913: *Metallarcha calliaspis* MEYRICK, 1884 is congeneric with the type-species of *Metallarcha* MEYRICK, 1884: *Metallarcha diplochrysa* MEYRICK, 1884.

Panopsia TURNER is a junior subjective synonym of *Metallarcha* MEYRICK. I place *Metallarcha* MEYRICK in the Spilomelinae based on the structure of the male and female genitalia and the tympanal organs.

Niphograpta WARREN, 1892 was considered a synonym of *Pyrausta* SCHRANK, 1802 (HAMPSON, 1899). I consider *Niphograpta* a good genus and based on characters of the genitalia and tympanal organs of the type species, *Epichronistis albiguttalis* WARREN, 1889 I place it in the Spilomelinae.

Osiriaca WALKER, [1886] 1865 and *Myriotis* MEYRICK, 1885 were both considered synonyms of *Pionea* GUENÉE, [1845] 1844, but *Pionea* is now a synonym of *Evergestis* HÜBNER, [1825] 1816. The type-species of both genera are congeneric, *Myriotis* MEYRICK becomes a junior subjective synonym of *Osiriaca* WALKER. Based on the structure of the genitalia and tympanal organs, these genera are placed in the Spilomelinae.

Plateopsis WARREN, 1896 was considered a synonym of *Loxostege* HÜBNER, [1825] 1816. The genitalia and the tympanal organs strongly differ from *Loxostege* HÜBNER. I consider *Plateopsis* a good genus and it belongs in the Spilomelinae.

Otiophora TURNER, 1908 was considered a synonym of *Pionea* GUENÉE, [1845] 1844, but *Pionea* is now a synonym of *Evergestis* HÜBNER, [1825] 1816. I consider *Otiophora* a good genus and it belongs in the Spilomelinae based on the characters found in the genitalia and the tympanal organs of the type species, *Pionea leucura* LOWER, 1903.

Udea GUENÉE, [1845] 1844 is placed in the Spilomelinae based on the following combination of characters: it has no subcostal retinaculum, the valva bear a fibula and not a sella or editum, the fornix tympani is broad and not underneath the venula prima, a venula secunda was not observed, the saccus tympani is absent or very poorly developed. Some characters in the tympanal organs are also found in the Evergestinae and Scopariinae: the fornix tympani is more or less bent rectangular.

Tetridia WARREN, 1890 was placed by HEPPNER & INOUE (1992) under the Pyraustini. Characters of the tympanal organs and male and female genitalia of the type species (broad fornix tympani, uncus and valva, no signa or appendix bursae on bursa copulatrix), clearly place it in the Spilomelinae.

Glauconoe WARREN, 1892 was placed by HEPPNER & INOUE (1992) in synonymy with *Paliga*. The type-species of *Glauconoe*, *Botys deductalis* WALKER, 1859 belongs to the Spilomelinae based on characters of the tympanal organs and male and female genitalia.

Ephelis LEDERER, 1863 was placed in the Odontiinae by MUNROE (1961). The type-species of *Ephelis* LEDERER, *Uresiphita cruentalis* GEYER, 1832 is congeneric with the type-species of *Epascestria* HÜBNER, [1825] 1816, *Pyralis pustulalis* HÜBNER, [1823] 1796 based on characters of the male, female genitalia and tympanal organs. *Ephelis* LEDERER becomes a junior synonym of *Epascestria* HÜBNER.

Irigilla SWINHOE, 1900 was considered as a synonym of *Pionea* GUENÉE, [1845] 1844, but *Pionea* GUENÉE is now a synonym of *Evergestis* HÜBNER, [1825] 1816. The male genitalia of the type species, *Rhodaria nypsiusalis* WALKER, 1859 have the characteristic uncus and valva of the Odontiinae. I consider *Irigilla* SWINHOE a good genus. It belongs in the Odontiinae.

The type-species of *Reskovitsia* SZENT-IVANY, 1942, *Ennychia alborivulalis* EVERSMANN, 1843 is a senior subjective synonym of *Evergestis canalesialis* HAMPSON, 1913. *Reskovitsia* SZENT-IVANY is a junior subjective synonym of *Evergestis* HÜBNER, [1825] 1816.

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Contribution à l'étude des Carabidae (Coleoptera) des cédraies d'Algérie Première partie

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Résumé

Des récoltes régulières ont été effectuées pendant plus d'une année dans de nombreux sites d'étude localisés dans les cédraies les plus importantes d'Algérie: Atlas de Blida, Djurdjura, Ouarsenis, Babor et Aurès-Bélezma. L'inventaire établi permet d'asseoir sur une base réactualisée la richesse spécifique en Carabidae terrestres dans les litières de ces forêts de montagne. Les données quantitatives, obtenues à intervalles de temps précis, pour 76 espèces, renseignent sur l'abondance relative des différents taxons rencontrés et sont exploitées pour déterminer les caractéristiques écologiques des espèces par analyse factorielle de correspondances.

Summary

During more than one year, regular captures were carried out in the most important Algerian cedar forests: Blidean Atlas, Djurdjura, Ouarsenis, Babor and Aurès-Bélezma. The results allows us to establish an actual checklist of the Carabids of these forests. The quantitatives data, obtained at monthly intervals for 76 species, informs about their relative abundance in each station. Compared to abiotic and biotic factors, and with the help of Detrented Correspondence Analysis, they inform about ecological characteristics of each species.

Introduction

Les forêts représentent pour l'écologiste un milieu intéressant du fait qu'au moins une partie de leur végétation a un long cycle biologique et