

Chyromyidae (Diptera, Schizophora) of the Canary Islands and Madeira, with descriptions of new species

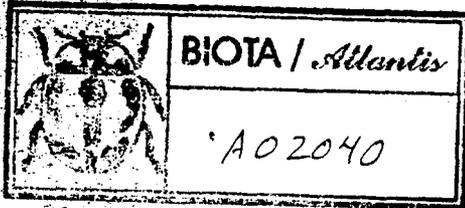
[Chyromyidae (Diptera, Schizophora) der Kanarischen Inseln und Madeira mit Beschreibungen neuer Arten]

by

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Abstract

This article brings together **all** that is **known** about the family Chyromyidae on the Canary Islands and Madeira. Seventeen species are **currently known from** these islands. Five new species are described: *Chyromya intermedia* spec. nov., *Gymnochyromyia fulvipygga* spec. nov., *Aphaniosoma ater* spec. nov., *A. baezi* spec. nov. and *A. pseudorufum* spec. nov. A **sixth** species, though apparently new, is not described because of inadequate material. **The** distribution of species of this family **on** the eight islands reveals that ten are known **from** Fuerteventura and nine from Tenerife, but only one species **from** La Gomera and Hierro. A single species, *A. rufum* FREY, 1935 is found **on** as **many** as **five** of the islands.

Key words

Chyromyidae, faunistics, new species, distribution, Canary Islands, Madeira

Zusammenfassung

Vorliegender Beitrag faßt alles bislang über die Fliegen der Familie Chyromyidae **Bekannte** der Kanarischen Inseln und Madeira **zusammen**. **Insgesamt** sind **nummehr** 17 Arten von diesen Inseln **bekannt**. **Fünf** neue Arten **werden** beschrieben: *Chyromya intermedia* spec. nov., *Gymnochyromyia fulvipygga* spec. nov., *Aphaniosoma ater* spec. nov., *A. baezi* spec. nov. und *A. pseudorufum* spec. nov. Eine sechste - offensichtlich auch neue Art - wird nicht beschrieben, da das zugängliche Material sich als unzureichend erwies. Eine Analyse der Verbreitung der Arten auf den acht Inseln führt zu dem Ergebnis, daß **10** Spezies von Fuerteventura **bekannt** sind, neun von Teneriffa und nur jeweils eine Art von La Gomera und Hierro. Eine einzige **Art**, nämlich *A. rufum* FREY, 1935 ist von **fünf** Inseln **bekannt**.

Stichwörter

Chyromyidae, Faunistik, neue Arten, Verbreitung, Kanarische Inseln, Madeira

Introduction

The Canaries are a heterogeneous group of volcanic islands. Their geographic location, just **off** the coast of north west Africa and their favourable climate support a rich diversity of flora and fauna. Endemism appears to be very high. In the Diptera, it is approximately 40 %, and this insect Order is not the one with the greatest number of endemics. It may be premature to reach firm conclusions about the rate of endemism in the Chyromyidae since the mainland fauna has not been investigated.

BECKER (1904) described *A. quadrinotatum* from **two** females collected in Tenenfe and Gran Canana. He also recorded *A. Zutfrons* LOEW, 1873 from La Palma. Later (BECKER 1908), he recorded *C. flava* (LINNAEUS, 1758) and *A. Zutfrons* also from Madeira. The record of *flava* is most probably correct. The type of *Zutfrons*, a female, has been examined (EBEJER 1998). It was not possible to differentiate it from females of several other species. Therefore, on current taxonomic criteria and methodology one cannot be confident of any records pertaining to this species. For this reason, BECKER's records of *latifrons* from La Palma and Madeira are not considered valid. FREY (1958) subsequently described the male of *quadrinotatum* and raised to species level another taxon, which he had previously described as form *rufa* of *quadrinotatum* (FREY, 1935).

Material and methods

The material available for this study was collected, in large part, by one of the authors (MB). Other collectors are acknowledged in the section "material examined" under each species. All dissected material is placed in glycerine tubes mounted on the same pin as the specimen. Unless specified, specimens are deposited in the collection of M. BÁEZ, Tenerife. The depositories of all other specimens are indicated by the following abbreviations or initials in brackets at the end of each citation under material examined:

BM	B. MERZ collection, Switzerland
MJE	M. J. EBEJER collection, Malta
NHXI	Natural History Museum, London
NMW	National Museum of Wales, Cardiff
SMO	Slezke zemske Muzeum Opava

In this article, the term postgonite has been adopted instead of gonostylus to refer to the (usually) haired, sclerite which articulates with the posterior end of the hypandrium (SINCLAIR, 2000). The following abbreviations have been used in the figures:

bac scl	- bacilliform sclerite	ph apd	- phallapodeme
cer	- cercus	sur	- surstylus
dist	- distiphallus	troch	- trochanter
ej apd	- ejaculatory apodeme	t5	- tergite 5
ep	- epandrium	t6	- tergite 6
hyp	- hypandrium	post gon	- postgonite

Chyromya flava (LINNAEUS, 1758)

There are no previous records from the Canary Islands or from Madeira. This species is very variable in size and degree of dilatation of the femora especially in the male. Large male specimens often have strongly dilated fore and hind femora. Some specimens can have pale brown stripes on the mesonotum; these are broad and better developed in the anterior part. The colouration of bristles (though never black) and the degree of their development can also vary, but all specimens have a well-developed presutural dorsocentral and a pair of minute crossed apicals on the scutellum.

Distribution: Holarctic.

Material examined: 1 ♀, La Palma, Dehesa, 19 Mar 1934, E. SANTOS-RODRIGUEZ; 1 ♀, La Palma, Dehesa, 19 May 1936, E. SANTOS-RODRIGUEZ; 1 ♀, La Palma, Dehesa, 24 Apr 1938, E. SANTOS-RODRIGUEZ; 1 ♀, La Palma, Dehesa, 11 Jul 1976, M. BÁEZ.

Chyromya intermedia EBEJER spec. nov.

(Figs 1-3)

Male. Head: yellow with frons barely longer than broad and almost parallel-sided with about 12 scattered fine pale yellow hairs; ocellar triangle black; occiput entirely yellow; gena deeper posteriorly, pale haired and ratio of height to height of eye 4:5; eye round, finely, but distinctly haired, hairs as long as those at apex of third antennal segment; arista black and finely black pilose, except basal segment which is yellow as the remainder of antenna; mouthparts all yellow; 3 fronto-orbitals, 1 inner and 1 outer vertical, postverticals as long as anterior fronto-orbital.

flava and in *miladae*; the main differences in the hypopygium are a more strongly curved surstylus, a simple distiphallus and a small ejaculatory apodeme which is rectangular instead of umbrella-shaped.

Material examined: holotype d, Lanzarote, Janubio, 22 Feb 1979, M. BÁEZ.

Chyromya oppidana (SCOPOLI, 1763)

Previous records from the Canary Islands and/or Madeira are given in FREY, 1958. However, LYNEBORG (1973) questioned the correctness of FREY's record when he examined a specimen from Fuerteventura. In LYNEBORG's opinion the correct identification should have been *robusta* HENDEL, 1931.

Distribution: Widely distributed in many parts of Europe and the Mediterranean.

Material examined: 1 ♀, Lanzarote, Janubio, 22 Feb 1979, M. BÁEZ.

Chyromya robusta HENDEL, 1931

Previous records from the Canary Islands and/or Madeira are given in FREY, 1958 (under the junior synonym *variegata* FREY, 1958) and LYNEBORG, 1973. This highly variable species can be mistaken for *oppidana* when in its pale form. Large specimens, especially males, have very dilated femora, which can be completely black or completely yellow. All the specimens from the Canaries have only the third antennal segment black, whereas some specimens from the eastern Mediterranean have all the antennal segments black. This is the only known species of *Chyromya* that has black palpi.

Distribution: Southern Spain, the Canaries and Egypt.

Material examined: 3 ♂♂ and 2 ♀♀, Fuerteventura, Madre del Agua, 8 May 1974, M. BÁEZ; 1 ♀, Fuerteventura, Jandía, 9 May 1974, M. BÁEZ; 1 d, Fuerteventura, La Oliva, 13 Feb 1977, M. BÁEZ; 1 ♀, Fuerteventura, La Matilla, 17 Feb 1977, M. BÁEZ; 1 ♂, Lanzarote, Haría, 20 Feb 1979, M. BÁEZ; 1 ♂, Lanzarote, Mala, 21 Feb 1979, M. BÁEZ; 1 ♂, Lanzarote, Haría, 23 Feb 1979, M. BÁEZ; 1 ♂, Lanzarote, Nazaret, 23 Feb 1979, M. BÁEZ; 2 d ♂♂, Fuerteventura, Vallebrón, 21 Feb 1980, M. BÁEZ; 1 ♀, Fuerteventura, La Oliva, 5 Mar 1984, M. BÁEZ; 6 ♂♂ and 4 ♀♀, Fuerteventura, Vallebrón, 7 Mar 1984, M. BÁEZ; 1 d same data (MJE).

Gymnochiromyia flavella (ZETTERSTEDT, 1848)

Previous records from the Canary Islands and/or Madeira are given in FREY, 1958 under the junior synonym *minima* BECKER, 1904.

Distribution: Throughout Europe and North Africa.

Material examined: 1 ♀, Hierro, Frontera, 26 May 1976, M. BÁEZ; 1 ♀, La Palma, Breña Baja, Los Cancajos, 22 Feb 1997, M. KOPONEN; 3 ♀♀, La Palma, Breña Baja, Los Cancajos, 29 Mar 1998, M. KOPONEN; 1 ♀, La Palma, Breña Baja, Los Cancajos, 4 Apr 1998, M. KOPONEN; 3 ♂♂, Tenerife, Teno Bajo, 22 Mar 1999, M. BÁEZ.

Gymnochiromyia fulvipyga EBWER spec. nov.

(Figs 4-7)

Male. Head: yellow; frons at level of anterior ocellus twice as wide as at level of antennae and with about 18 fine pale yellow hairs scattered across middle third; ocellar triangle black; occiput entirely yellow; gena deeper posteriorly, pale haired and ratio of height to height of eye 5:4; eye somewhat oval lying horizontally, finely but distinctly haired, hairs as long as those at apex of third antennal segment; arista black and very finely black pilose, except basal segment which is yellow as the remainder of antenna; mouthparts all yellow; hairs in the vibrissal region long and white; 3 fronto-orbitals, 1 inner and 1 outer vertical, 2 short

Length: male: 1.7 mm, wing 1.0 mm; female: body 1.8 mm, wing 1.0 mm.

Female. Similar to male, but bristles paler, hairs generally more numerous, with acrostichals in 6 irregular rows; legs with fifth tarsal segments less distinctly brown in some specimens; tergites with paler brown bands which do not reduce in size from base to apex of abdomen, thus occupying about four fifths of length of each tergite.

Derivatio nominis: from the Latin "fulvus" meaning brown and "pyga" meaning buttocks or rear (postabdomen). The name refers to the characteristic colouring of the male epandrium.

Differential diagnosis: *G. fulvipyga* males are distinct among the Palaearctic species because of the dark epandrium and fifth tarsal segments. The female can be separated from other *Gymnochiromyia* by the presence of a strong presutural dorsocentral, dark metanotum and dark tarsal segments. *G. seminitens* HENDEL differs in having very much more extensive dark colouration, and absent presutural dorsocentral bristle; *G. zernyi* (CZERNY) can look very similar if the dark areas are more developed than usual, but here too a presutural dorsocentral is missing and the epandrium is always yellow.

Material examined: holotype ♂, Fuerteventura, Vega Rio Palmas, 27 Feb 1990, M. BÁEZ. Paratypes: 2 ♂♂, same data (one dissected); 1 ♀, Tenerife, Los Cristianos, 1 Oct 1977, M. BÁEZ; 1 ♀, Fuerteventura, Joró, 19 Feb 1980, M. BÁEZ; 1 ♂ and 1 ♀, Fuerteventura, Betancuna, 6 Mar 1984, M. BÁEZ; 2 ♀♀, Gran Canaria, Barranco del Aguila, 25 Dec 1389, M. BÁEZ; 1 ♂, Lanzarote, Mirador de Haría, 500-550 m, 20 Feb 1996, C. LIENHARD, (BM); 1 ♀, Tenerife, Lomo Bermejo, near Iguete, 2 km NW, sweeping vegetation along brook in ravine, May 1999, J. ROHÁČEK, (SMO).

Aphaniosoma ater EBEJER spec. nov.

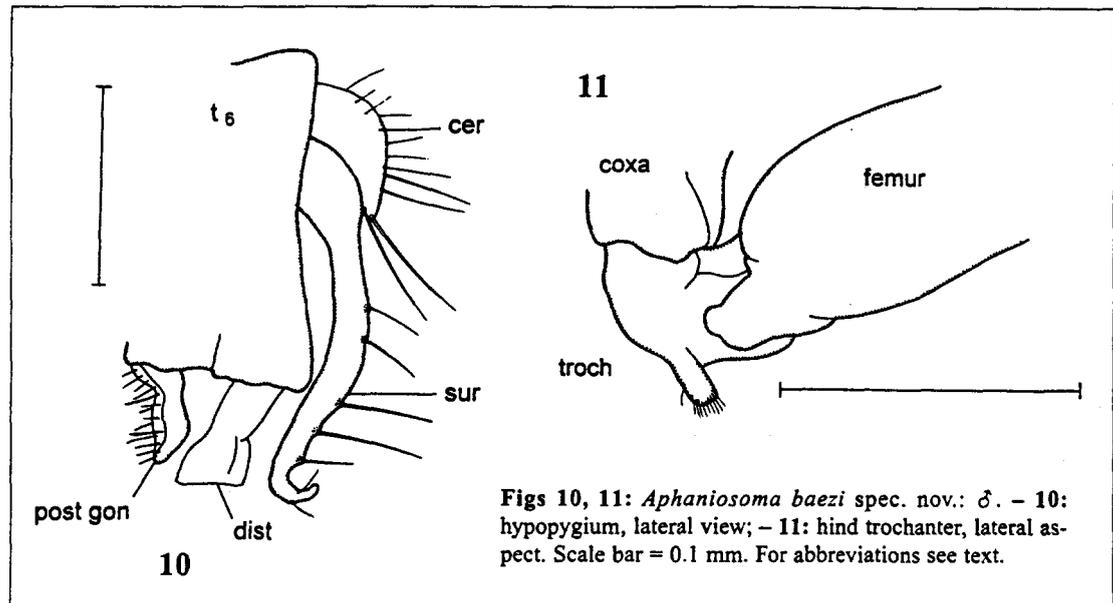
(Figs 8, 9)

Male. Head: frons yellow about as wide as long, narrowing abruptly at level of antennae; about 16 distinct brown hairs of equal length scattered across frons; ocellar triangle dark brown, ocelli black; occiput dark brown except for dusky yellow band from vertex to neck; gena pale brown haired and ratio of height to height of eye 3:6; eye barely oval; arista black; third antennal segment yellow; mouthparts all yellow; in the vibrissal region hairs of mouth margin paler and longer; 2 long fronto-orbitals with a small brown spot at their base; 1 inner and 1 outer vertical, short crossed postverticals.

Thorax: almost entirely dark brown, including scutellum; mesonotum with thin greyish tomentum thus appearing somewhat shiny; humerus and notopleural stripe dusky yellow as are pleural sutures; 2+5 acrostichals in two close set rows at transverse suture, but becoming more separated posteriorly; 1+4 dorsocentrals (not especially long anteriorly), 1 long and 1 short humeral, 1 posthumeral, 1 intrahumeral, 2 notopleurals, 1+3 intraalars, 1 supraalar; scutellum with usual 4 long marginals; stigmatical present, 1 sternopleural and 1 mesopleural with a few additional whitish hairs. Wing: of usual shape and venation, all veins yellow; posterior crossvein joining cubital vein at angle of about 70 degrees; haltere brown. Legs: mostly yellow and yellowed haired, but middle third of femora and tibiae infuscated; all fifth tarsal segments yellow; hind trochanter with characteristic short, thick, truncate process bearing a crest composed of a series of distinct, pale, spine-like bristles.

Abdomen: all tergites dark brown, almost black with very narrow pale hind marginal bands; fifth tergite only slightly longer than fourth, but about 4 times as long as sixth, which it overlaps almost completely. Hypopygium: with short surstyli of characteristic shape visible *in situ*. Not dissected as this is the only male available and it provides ample external diagnostic characters.

Female. Very similar to male in all respects except for absence of secondary sexual charac-



Figs 10, 11: *Aphaniosoma baezi* spec. nov.: ♂. – 10: hypopygium, lateral view; – 11: hind trochanter, lateral aspect. Scale bar = 0.1 mm. For abbreviations see text.

haired, but all fifth tarsal segments black; hind trochanter with characteristic short, narrow, truncate process bearing a dense brush of very short white hairs at apex.

Abdomen: all tergites with dark brown transverse bands on anterior half; tergites 5 and 6 short and partly overlapped by the fourth. Hypopygium: typical of the group with long prominent surstyli which in this species are sharply curved and pointed at their apex; along the shaft in the lower half, arise from distinct tubercles a number of long bristle-like hairs directed backwards; distiphallus sclerotised and at tip, truncate; postgonite with anteroventral margin covered in dense pale hairs. Not dissected as this is the only male available and the most useful diagnostic features are visible externally.

Female. The only available specimen is headless. In other respects very similar to male, but without the secondary sexual characters.

Length: male: 1.4 mm, wing 1.5 mm.

Derivatio nominis: named in honour of the co-author of this paper, Dr Marcos BÁEZ, who collected most of the material that formed the basis of this study.

Differential diagnosis: this species is very close to *harteni* EBEJER, 1996 from which it differs in the absence of a presutural intraalar and in having a process on the hind trochanter and a different surstylus. It also resembles *hackmani* LYNEBORG, 1973 from which it also differs in not having a presutural intraalar, and in the trochantenc process and surstylus, both being of different shape.

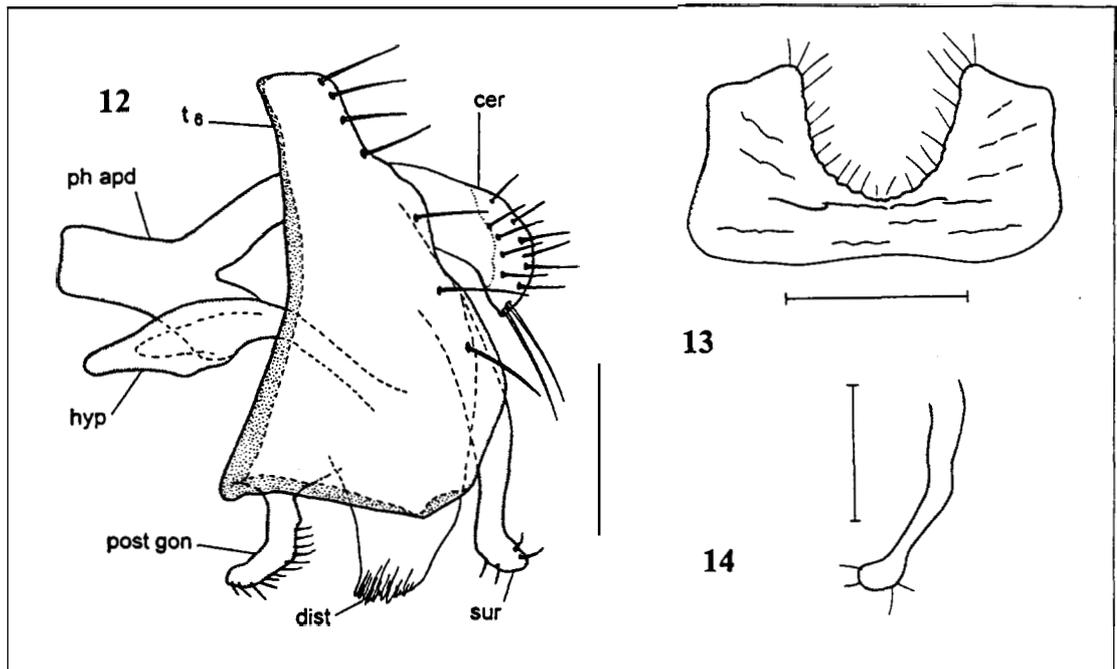
Material examined: holotype ♂, Fuerteventura, Madre del Agua, 8 May 1974, M. BÁEZ. Paratype: 1 ♀, same data.

Aphaniosoma clitellatum EBEJER, 1993

This species was hitherto known only from the type locality (Malta) and its occurrence on the Canaries is unexpected. It is a highly distinctive species in the male, which has a very large fifth tergite with posteriorly directed ventral lobes.

Distribution: Malta and Canary Islands.

Material examined: 1 ♂, Fuerteventura, Corralejo, 19 Feb 1996, B. MERZ (BM).



Figs 12-14: *Aphaniosoma pseudorufum* spec. nov.: ♂. - 12: hypopygium, lateral view; - 13: pregenital sternite, ventral view; - 14: surstylus, oblique view to show maximum curvature. Scale bar = 0.1 mm. For abbreviations see text.

abdomen and because of large tergite 5; spatulate apex of surstylus easily visible (also in most paratypes), distiphallus thick set and somewhat truncate, poorly sclerotised and at apex appears deeply crenate or haired; postgonite with row of very short dense hairs posteriorly; surstylus pale, broad at base, spatulate at apex and with a few very short pale hairs.

Female. Very similar to male in all respects except for the absence of secondary sexual characters and for a tendency to have more numerous bristles on mesonotum.

Length: male and female: 1.7 mm, wing 1.7 mm.

Derivatio nominis: named "pseudorufum" from Greek, meaning "like" and "rufum" from Latin for "red", because of the very similar appearance to the species *rufum*.

Differential diagnosis: *pseudorufum* belongs to the group of species that have well-developed presutural bristles and often characteristic developments on the hind trochanter in the male. **As** the name implies this species is exceedingly close to *rufum* from which it cannot be separated reliably in the female sex. Males are easily distinguishable by an examination of the hypopygium even without dissection. In *rufum* the "Y" shaped projection of the pregenital sternite is often visible. The diverging spatulate apices of the surstyli in *pseudorufum* are very different from the equivalent structure in other pale species of this group.

Material examined: holotype ♂, Tenerife N, Las Aguas nr San Juan de la Rambla, 9 May 1999, J. ROHÁČEK, (SMO). Paratypes: 6 ♂♂ and 5 ♀♀, same data (SMO); 3 ♂♂ and 2 ♀♀, same data (MB); 5 ♂♂ and 1 ♀, same data (MJE); 2 ♂♂ and 1 ♀, same data (NHM); 3 ♂♂ and 5 ♀♀, Tenerife N, Punta del Hidalgo, 11 May 1999, J. ROHÁČEK (SMO); 2 ♂♂ and 3 ♀♀, same data (MB); 1 ♂ and 3 ♀♀, same data (MJE); 1 ♂ and 2 ♀♀, same data (NHM).

Aphaniosoma quadrinotatum (BECKER, 1904)

Previous records from the Canary Islands are given in BECKER, 1904. This is a species belonging to the group with strong doisocentrals before the transverse suture. It is closely

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