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THE FUNGUS GNATS (DIPTERA, BOLITOPHILIDAE, KEROPLATIDAE AND MYCETOPHILIDAE) OF THE MONEGROS REGION (ZARAGOZA, SPAIN) AND FIVE OTHER NEW EUROPEAN SPECIES OF *PYRATULA* EDWARDS AND *SCIOPHILA* MEIGEN

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ABSTRACT

A list is provided of the 53 species of these families recorded during a survey of the Monegros region. Six of these species are described as new (*Macrorrhyncha gallica*, *Pyratula ebroensis*, *Boletina augusta*, *Sciophila iberolutea*, *Cordyla monegrensis*, *Pseudexechia latevittata*). Five species from elsewhere in Europe, belonging to the same species groups as two of the Monegros species are also described as new (*Pyratula alpicola*, *P. subcanariae*, *P. takkae*, *Sciophila corlutea*, *S. delphis*) to put their position in these species groups in context.

The characteristics of the Monegros region are described. The fungus gnat fauna of the region is discussed in relation to knowledge of the wider Spanish fauna and that of adjacent parts of Europe. The distribution patterns shown by species recorded from the Monegros are described: 35 species (and probably 3 others) are widespread in Europe, 11 species are only recorded from the Mediterranean Region [including *Macrorrhyncha hispanica* (Strobl, 1909) only known from Spain], 1 species is only previously recorded from the Canary Islands and 3 species are presently known only from the Monegros region.

Key words: Diptera, Bolitophilidae, Keroplatidae, Mycetophilidae, new species, Monegros, Spain.

INTRODUCTION

A summary of the results of study of fungus gnats collected during surveys by one of us (JBZ) at Retuerta de Pina in the Monegros region (Zaragoza province), was given by CHANDLER (1999). Here a full list of the 53 species recorded (1 Bolitophilidae, 4 Keroplatidae, 48 Mycetophilidae) is provided. Six new species from the Monegros are described, three of them also seen from other parts of the western Mediterranean region but three as yet only known from the Monegros. Three new species of *Pyratula* Edwards, 1929 from other parts of Europe are also described, so that the *P. perpusilla* (Edwards, 1913) group can be treated fully. For the same reason, two new species of *Sciophila* Meigen, 1818 from elsewhere in Europe are described to put the new Monegros species of the *S. lutea* group in perspective.

THE MONEGROS REGION

The area studied lies in the central part of the Ebro valley east of the city of Zaragoza and is in that part of the Monegros region characterised by gypsum soils. Other parts of the Monegros, which are dominated by saltmarshes or by *Pinus halepensis* Miller forests on limestone soils, were not studied.

The description given here follows that in the account of new Sciaridae from the region by MOHRIG & BLASCO-ZUMETA (1992). The climate is of the arid continental type, with temperatures ranging during a year from -10ºC to more than 40ºC, low rainfall (200-400mm) and frequent NW or SE winds, which have a considerable desiccating effect.

This climate results in the Monegros being one of the most desert-like areas in the Iberian peninsula and its vegetation resembles that of North African steppes. The climax vegetation is woods of juniper (*Juniperus thurifera* L.), but the extent of these has been reduced considerably by man. Today the only significant area of juniper forest is the approximately 2000 hectares of the "Retuerta de Pina", just east of Pina de Ebro (UTM grid reference 30TYL29). Even here the original forest cover has been severely affected by man and all the lower lying areas have been cultivated and are now dry cereal fields, with only the hills retaining their original vegetation.

The juniper woods are a species-poor community characterised apart from *Juniperus* by the presence of *Rhamnus lycioides* L., *Ephedra nebrodensis* Tineo ex Guss and *Asparagus acutifolius* L. The habitat mainly comprises open forest steppe with scattered trees. The nature of accompanying vegetation is dependent on soil and orientation as there are no watercourses, either permanent or seasonal and altitudes are nowhere very far from the mean level of 360m, but the main communities are steppe grasslands and dense dwarf scrub. Soils are mostly gypsum, with some marl and clay.

MATERIALS AND METHODS

The specimens collected during 1990-1991, were obtained mainly with three kinds of traps:

- Moericke trap, a metal container, yellow inside and green outside, dimensions 60x60x10 cm on a 70 cm

high stand, filled with slightly soapy water. There was one trap which remained in operation from May 1990 to December 1991, with two breaks August-September 1990 and July-September 1991. The trap was set in typical *Ononidetum tridentatae* Br.-Bl. & Bolós dwarf scrub.

- Coloured dishes, twenty-five plastic trays (9 yellow, 8 blue, 8 white) of dimensions 26x16x4cm, filled with soapy water. These were in use from February 1990 to December 1991, set once a fortnight in 1990, and left in operation for 24 hours on each occasion. They were constantly moved around within the Retuerta.
- Malaise traps, two traps of dimensions 180 x 121 x 183-206 cm. The collecting liquid was 70 per cent. alcohol. They were in operation from September 1990 till December 1991 and were emptied once a week. The traps were set 23 m apart in typical *Ononidetum tridentatae* scrub.
- Pitfall traps, containing vinegar or beer.

During 1992 to 1994, material was collected using other trapping techniques:

- A carrion trap placed in a *Pinus halepensis* in April-June 1992.
- A light trap operated in 1992 and 1993.
- Wilkening traps placed in a *Juniperus thurifera* or *Pinus* species.

In addition some material was swept with a net from various plants and in 1993-1994 material of several species was obtained from within rabbit holes.

Museums in which type material is deposited are abbreviated as follows:

BMNH, Natural History Museum, London, UK

ETHZ, Eidgenössische Technische Hochschule, Zürich, Switzerland

MHNN Museum d'Histoire naturelle, Neuchâtel, Switzerland

MNHN, Muséum National d'Histoire Naturelle, Paris, France

THE SPANISH FUNGUS GNAT FAUNA

Present knowledge of the Spanish fungus gnat fauna was summarised by CHANDLER (1999).

The fungus gnats in the broad sense are represented in Europe by five families of Sciaroidea, all of which occur in Spain but only the three larger families have been recorded in the Monegros. The families Diadocidiidae and Ditomyiidae have few European species and only one species of each family is known from Spain.

The Bolitophilidae includes only one genus *Bolitophila* Meigen, 1818, with 33 species in Europe of which six (four published) have previously been recorded in Spain. The one species recorded here from the Monegros is new to Spain.

The Keroplatidae includes 84 described species in Europe, of which 55 are recorded in France, 52 in the British Isles and 45 in Switzerland. The Spanish fauna is less well known. STROBL (1900, 1905, 1909) recorded eight species, some of which require confirmation and a further five were added by PLASSMANN & SCHACHT (1990). Specimens of fifteen species from other parts of Spain have been examined by the author and these include eleven additions to the published records. Most of the 24 species recorded from Spain outside the Monegros are widespread in Europe. However, of the four species here recorded, three are new to Spain and two of these are newly described.

The Mycetophilidae include at least 820 species in Europe. Recent lists have recorded 452 species for the British Isles and 440 for Switzerland; the latest unpublished French list (Matile, pers. comm.) includes 380 confirmed species. The Spanish fauna was until recently poorly known. The papers by Strobl cited above recorded about 50 species, many of which require confirmation. There were only scattered records in the literature, adding about 20 species prior to the list by PLASSMANN & SCHACHT (1990), who recorded 99 species (about 75 of them newly recorded) and listed records from many parts of Spain. Material examined by the author (mainly from visits to Spain in 1978 and 1980) includes 120 species from Spain other than the Monegros, of which about 50 have not previously been recorded, so the total of species known from Spain prior to study of the Monegros fauna was approaching 200. Of the 47 species listed here for the Monegros 21 are new for Spain and four are newly described.

It is probable that at least twice as many species of fungus gnats actually exist in the Iberian peninsula than have hitherto been recorded and it was perhaps not surprising that intensive collecting in an area like the Monegros should have produced additions to the Spanish list, although the habitat may not appear at first sight to favour a large fauna of this group.

As indicated by CHANDLER (1999), all families of fungus gnats are mainly found in forests and wooded habitats, especially older well established forests with mature and decaying trees. Most species develop in fungi or decaying wood; even those Keroplatidae which have predatory larvae are associated mainly with this type of habitat. More humid forests are particularly favoured and adults are usually most numerous near streams and in other sheltered situations. Montane habitats are favoured and in Europe the greatest number of species are found in boreal or alpine forests. Fewer species are therefore expected in warmer, drier and more open habitats such as those found in the Monegros and it is not surprising that many species have been found only in the cooler winter months.

Many species are, however, very widespread, occurring in suitable habitats throughout Europe. The fauna of the Mediterranean region is smaller than that of northern Europe and consists predominantly of these widespread species, but also includes a moderately large number of species found only in this region. Some of the latter are found throughout the region, while others are more localised. In several genera speciation has evidently occurred within the region and in some of these cases this speciation has only recently been recognised and the distribution of the species in these groups is poorly known. Some of the species found in the Monegros belong to each of these categories and some of the new species found there may also have this distribution. Others may be more restricted but this will not be known until surrounding regions are better studied.

CHANDLER (1999) reported that 47 species had been found in the Monegros (1 Bolitophilidae, 4 Keroplatidae and 42 Mycetophilidae). The species list given in the inventory appended to MELIC & BLASCO-ZUMETA (1999) included 41 species of Mycetophilidae, three *Docosia* species including *D. morionella* Mik, 1884 and an unnamed species mentioned in the text having been omitted. Here the list is adjusted to include some additional Mycetophilidae, bringing the total of that family to 48 species and the overall total to 53.

The one record of Bolitophilidae from the Monegros was *B. pseudohybrida* Landrok, 1912, a widespread European species but the first record for Spain. It develops in terrestrial gill fungi, usually in wooded areas.

The Monegros Keroplatidae fauna is also small, but very interesting compared to the hitherto known Spanish fauna; only four species have been recorded but three are new to Spain, two of them new to science. Many Keroplatidae have carnivorous larvae living in webs on various substrates such as dead wood or lignicolous fungi, while others feed partly or entirely on fungal spores caught in their webs, but the biology of the Monegros species is unknown.

Macrocera pusilla Meigen, 1830, with one record from Monegros, is a widespread species but new to Spain. The genus *Macrorrhyncha* Winnertz, 1863, which feed at flowers, is a mainly Mediterranean group and is represented by two species in the Monegros: *M. hispanica* (Strobl) was only previously known from the holotype male from Alicante, which was redescribed by MATILE (1975) and an undescribed species, *M. gallica* sp. n., which had previously been recognised from southern France and Corsica, is described here. The fourth keroplatid is an undescribed *Pyratula* species of the *perpusilla* Edwards group. This is a group with several species in the Mediterranean region, all till recently undescribed. Two of them have already been described, from Israel (CHANDLER, 1994) and the Canary Islands (CHANDLER & RIBEIRO, 1995); others occurring in Greece and Switzerland are described here. The species found in the Monegros was also hitherto undescribed, but has been found in Malta so probably also occurs in North Africa.

From the Monegros, 48 species in 18 genera of Mycetophilidae have been examined. Here records are given of a further five species not considered by CHANDLER (1999) (*Docosia helveola* Chandler, 1994; an undescribed *Allodia* of which only the female has been seen; *Exechia fusca* (Meigen, 1804); *Mycetophila ocellus* Walker, 1848; *Zygomyia pseudohumeralis* Caspers, 1980).

Most of the Monegros species develop in terrestrial fungi, a biology likely to be most common for the family in this type of habitat. This applies to the species of ten of the genera recorded, comprising 30 species and *D. gilvipes* (Haliday in Walker, 1856) in *Docosia* Winnertz, 1863. The biology of other species of *Docosia* and of the species of three other genera (*Azana* Walker, 1856; *Zygomyia* Winnertz, 1863, and *Novakia* Strolb, 1893) is unknown as is that of the single *Boletina* Steager, 1840, species recorded; other *Boletina* species have been recorded from terrestrial fungi or bryophytes. *Platurocypta punctum* (Stannius, 1831) develops in myxomycetes, usually growing on wood. The genera *Trichonta* Winnertz, 1863 (1 species in Monegros) and *Mycomya* Rondani, 1856 (3 species) mainly develop in wood encrusting fungi and may be associated with such fungi on *Juniperus thurifera* or the *Pinus* species. This habit also applies to one species of *Mycetophila* Meigen, 1803 (*M. ocellus*) and is the predominant habit in this genus, but not of the other seven species of the genus found in the Monegros. Not surprisingly species and genera normally associated with decaying wood or lignicolous fungi are otherwise absent from Retuerta de Pina.

As far as distribution outside the region is concerned, the largest category of Mycetophilidae found in the Monegros are widespread European species (33 species, including most of those first reported here and probably also the undetermined *Allodia* Winnertz, 1863 species). Two other little known species may be in this category, i.e. *Novakia simillima* Strobl, 1910, only previously known from Austria and a *Docosia*, identified as the previously unknown male of *D. morionella* Mik, of which females have been recorded only from Austria and Scotland.

Six species recorded from the Monegros are known in Europe only from the Mediterranean region, i.e. *Azana flavohalterata* Strobl in Czerny & Strobl, 1909, *Mycomya pygmalion* Väisänen, 1864, *Rymosia pseudocretensis* Burghele-Balacesco, 1967, *R. beaucournui* Matile, 1963, *Exechia fulva* Santos Abreu, 1920 and *Cordyla styliforceps* Strobl, 1934. Three of these, the *Mycomya* and *Rymosia* Winnertz, 1863, species, are new records for Spain, although all have been recorded from Portugal by RIBEIRO (1990, 1991). All of these six are widespread around the Mediterranean and all were recorded from Israel by CHANDLER (1994); the two latter are also known from the Canary Islands (CHANDLER & RIBEIRO, 1995).

Two species of *Docosia*, a genus well represented in the Mediterranean region, are new records for Europe: *D. fuerteventurae* Chandler & Ribeiro, 1995, previously known only from the Canary Islands and *D. helveola* Chandler only from Israel.

The remaining four species are described as new here. The new species of *Pseudexechia* Toumikoski, 1966 and *Cordyla* Meigen, 1803, are represented by few specimens and little can be said about their status. The *Sciophila* species belongs to a group closely allied to the widespread European species *S. lutea* Macquart, of which several occur around the Mediterranean region. This species has also been examined from the Sierra de Cazorla in southern Spain and is here considered conspecific with material from Morocco and Malta. The second *Sciophila* thought to be new by CHANDLER (1999) is now recognised to be *S. parviareolata* Santos Abreu, which is also found in the Canary Islands, Portugal and Britain; it is distinguished only by small details of genital structure from *S. hirta* Meigen, 1818, which is widespread in northern Europe.

Perhaps the most interesting find is *Boletina augusta* sp. n., the only member of this large genus to be found in the Monegros. It is unique in having wings with thickened veins, which may be an adaptation to living in arid habitats. However, no other fungus gnats occurring in the region

have any similar adaptation so this may be mere speculation. Its male genitalia indicate relationship with the common European species *B. trivittata* (Meigen, 1818) and a few other lesser known species from northern Europe.

The species are arranged alphabetically under the families, subfamilies and tribes of Mycetophilinae.

BOLITOPHILIDAE

***Bolitophila pseudohybrida* Landrock, 1912**

MATERIAL from Retuerta de Pina, Monegros:

1 ♂, 11. XI. 1990, Moericke trap. Blasco-Zumeta *leg.*

KEROPLATIDAE

Keroplatinae

***Macrorrhyncha gallica* Chandler & Matile, sp. n.**
(Figs.1-4)

MALE:

Head (Fig. 1) black, grey dusted. Antenna and palpus all black, grey dusted. Proboscis about a quarter head height (half eye height), palpus longer, similar proportionally to *M. brevirostre* (Lundström, 1911).

Thorax entirely brownish orange, with dorsal stripes sometimes a little more brownish, mediotergite a little darker on disc.

Legs yellow. Fore first tarsomere 0.6 length of its tibia. Tibial setae short and weak.

Wing yellowish. Vein Sc ends just before base of Rs. Vein R_4 short, 1.5-2.0 x its length beyond R_1. Vein R_5 straight apically, costa only reaches beyond it by 0.25 of distance to M_1. Vein A_1 ends well short of wing margin. Haltere yellow, a little brownish on knob.

Abdomen with tergite 1 orange, 2 sometimes orange dorsally, brown laterally, 3-5 more strongly darkened but obscurely yellow on apical quarter, 6-8 and genitalia more or less shining black. Sternites 1-6 obscurely brownish yellow, 7-8 black, grey dusted. Genitalia (Figs. 2 - 4) similar to *M. brevirostre*, differing most obviously in the form of the gonostylus which is broadly rounded ventrally with a narrow dorsal process.

Wing length 3.5-3.8 mm.

FEMALE:

Very similar to male. Abdomen broad, dorsoventrally depressed, tergite 1 all brown, tergites 2-7 brown except for dull yellowish apical third; sternites similarly coloured.

HOLOTYPE MALE:

France, Hérault, Montpellier, St. Jean de Cuculles, garrigue, Malaise trap, 30.VI-5.VII.1982, J. P. Haenni *leg.*, MHNN.

PARATYPES:

3 ♂♂, data and depository as holotype; 1 ♂, Retuerta de Pina, Monegros region, Spain, 7.V.1991, dishes between *Pinus halepensis* and *Rosmarinus officinalis*, J. Blasco-Zumeta *leg.*; 25 ♂♂, 14 ♀♀, Retuerta de Pina, 1.VI.1991, swept from *Thapsis villosa*, J. Blasco-Zumeta *leg.*; 4 ♂♂, France, Corsica, Pénitencier de Chiavari, 18.VI.1972, taken in a car, L. Matile *leg.*, MNHN.

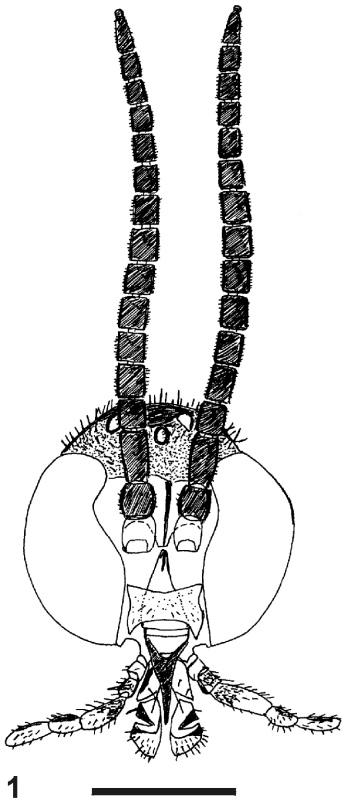


Figure 1. Anterior view of head of *Macrorrhyncha gallica* sp. n. (Scale: 0.25 mm).

OTHER MATERIAL:

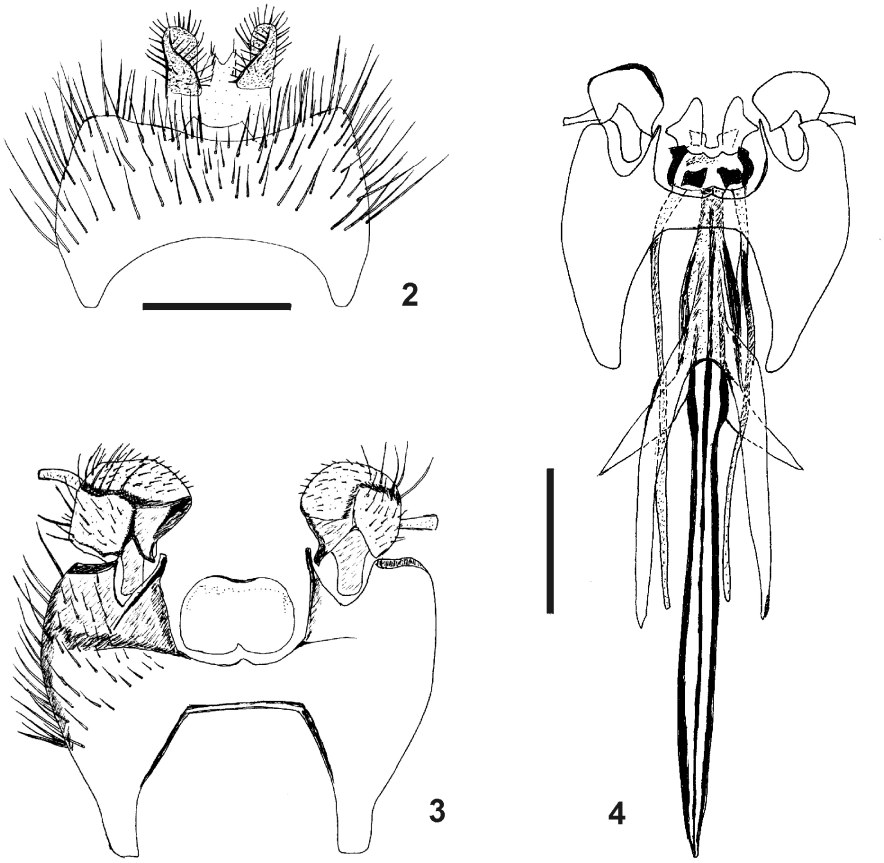
In addition to the type material, males of *M. gallica* were recorded at Retuerta de Pina by sweeping from *Crepis vesicaria*, 25.VI.1989; *Gypsophila hispanica*, 21.VII.1992 and xeric grasses, 8.VII.1992. Both sexes were collected in coloured dishes in VI-VII.1990. Other material (38 ♂♂, 4 ♀♀) has also been examined from a Malaise trap run at Barcelona, Vilassar de Dalt, V-VII.1995 by J.L. Jara.

DERIVATIO NOMINIS:

The name is the Latin adjective relating to France as this species was first recognised from material collected in mainland France and Corsica.

DISCUSSION:

M. gallica runs in the key by MATILE (1975) to couplet 4, differing from the included species in the orange brown thorax without distinct stripes, the abdomen mainly black dorsally and the halteres yellow and dusky on the knob. Because of its short proboscis, it might be considered to belong to *Neoplatyura* Malloch, 1928 but the structure of the male genitalia confirms that it is correctly placed in *Macrorrhyncha*.



Figures 2-4. Male genitalia of *Macrorrhyncha gallica* sp. n. 2. Dorsal view of tergite 9 and cerci. 3. ventral view of gonocoxites and gonostyli. 4. As 3 (smaller scale) but including aedeagal complex. (Scale: 0.2 mm).

***Macrorrhyncha hispanica* (Strobl, 1909)**

MATERIAL from Retuerta de Pina, Monegros, comprised 21 ♂♂ and 7 ♀♀. These were collected as follows: 6.VII.1990, coloured dishes; 9.VII.1990, 20.V.1991 and 9.XII.1991, Moericke trap; 7 and 20.VI.1991, Malaise trap; 28.VI.1992, carrion trap in *Pinus halepensis*; 9 and 25.VII.1992, pitfall trap with vinegar; 10.VI.1994, Wilkening trap in *Juniperus thurifera*; 1.VI.1991, male swept from *Thapsis villosa*; 8.VII.1992, male swept from *Gypsophila hispanica*; 12.VI.1993, female on flowers of *Retama sphaerocarpa*.

DISCUSSION:

This species was previously known only from the holotype from Alicante, Spain, which was redescribed by MATILE (1975) in his revision of the Palaearctic species of the genus. This is a rather small species with the proboscis distinctly longer than in *M. gallica* sp. n. and more typical of *Macrorrhyncha*. Members of this genus feed at flowers and the last record listed above may confirm this behaviour in *M. hispanica*.

The *Pyratula perpusilla* (Edwards, 1913) group

The species of this group are very similar structurally, including characters of their genitalia, most obviously the simple elongate, apically tapered gonostylus, bearing a single preapical spinose seta on the internal face. They are small, slender bodied, wing length 2.3-3.5mm, mainly dark brown, in some species with more or less extensive yellow markings on the abdomen, legs entirely yellow and the wings yellowish or greyish without distinct markings.

Until recently *P. perpusilla* Edwards was the only described species with these characters. Examination of material from the Mediterranean region has increasingly demonstrated that there is a complex of closely related species. At least seven species, mainly separable by small differences in the structure of the gonocoxites and the form of the aedeagus, have now been recognised, mainly from the Mediterranean region and adjacent areas. *P. oracula* Chandler, 1994 (Greece and Israel) (CHANDLER, 1994) and *P. canariae* Chandler & Ribeiro, 1995 (Canary Islands) (CHANDLER & RIBEIRO, 1995) have already been described.

Since a further species from the Monegros is here described as *P. ebroensis* sp. n., it is considered timely to describe the remaining species so that all the known European species can be figured for comparison. Consequently, *P. takkae* sp. n. from Greece and two species from Switzerland, *P. alpicola* sp. n. and *P. subcanariae* sp. n., are also described below.

Most external characters, such as coloration and proportions of wing veins seem variable. *P. canariae* and *P. takkae* sp. n. differ from the others in bearing a few setae

on the mediotergite, but with limited material it is uncertain whether this character is constant. Presence or absence of these setae has been treated as of generic importance in Keroplatidae and, as mentioned by CHANDLER & RIBEIRO (1995), the southern hemisphere genus *Rypatula* Edwards was distinguished from *Pyratula* on this character, so will require re-evaluation.

The most constant differences between the species lie in the male genitalia and females of most species have not yet been distinguished. Most important are the structure of the distal margin of the medial ventral part of the gonocoxites and of the aedeagus. The gonocoxites usually have a central asetose area bordered by diverging setose areas or lobes; the latter terminate distally in a variously shaped setose lobe, which in some species bears an asetose protuberance. The latter character is found in *canariae*, *subcanariae*, *takkae* and *ebroensis*, while *perpusilla*, *oracula* and *alpicola* have an apical setose protuberance. The aedeagus comprises a slender basal ejaculatory apodeme, which is broadened and blunt ended at the cephalad end, a broad medial portion and a tapered distal part, which is curved dorsally and more or less pointed apically; there is a sclerotised sheath immediately basad to the broad medial part. There are good specific characters in this aedeagal sheath, which is usually interrupted medially on the ventral side but has a complete bridge there in *alpicola*. The distal dorsal corners of this sheath bear a blunt protuberance on each side, which is elongate in *alpicola*, *ebroensis* and *canariae* and is the most obvious difference of *subcanariae* from the latter apart from lack of mediotergal setae.

***Pyratula oracula* Chandler, 1994** (Figs. 5-8)

Swiss and Andorran specimens considered to fit *P. oracula* on its genital structure have been examined. They also agree well with the Greek types of *oracula* in external characters. Some points omitted from the original description are included here for comparison with other species.

MALE:

Head shining black, thinly grey dusted. Antenna entirely brown; flagellomeres about 1.5 x as long as broad. Palpus brown; apical palpomere spindle-shaped, 1.5 x penultimate in length.

Thorax shining dark brown, with only prothoracic spiracular area and pleural sutures yellow. Chaetotaxy as *P. alpicola* including bare mediotergite.

Legs yellow. Fore first tarsomere two thirds length of tibia.

Wing yellowish, with costa and radial veins brown. Venation as *alpicola*; costa extends a little less than half distance from R_5 to M_1.

Abdomen with segment 1 brown; tergites 2-4 brownish on more than apical half, otherwise yellow and sternites 2-4 entirely yellow; segment 5 only narrowly yellow at base; rest of abdomen brown. Genitalia (Figs. 5-8 are of a Greek specimen) brown: gonocoxites with medial part distally bearing a pair of diverging setose lobes, each bearing a short setose protuberance apically; aedeagus elongate with the ejaculatory apodeme broad apically and without elongate process on distal dorsal margin of sheath.

Wing length 2.3 mm (Swiss specimen) (type material was in range 2.6-3.2 mm).

FEMALE:

Not recognised from European material.

MATERIAL EXAMINED:

Andorra, Santa Coloma, Malaise trap, IX.1992, 3 ♂♂, 1 ♀; VI.1993, 17 ♂♂, 3 ♀♀, J. Pujade *leg.* Switzerland, SH, Merishausen, 19.VIII.1992, 1 ♂, G. Bächli *leg.*

***Pyratula perpusilla* (Edwards, 1913)** (Figs. 9-12)

Only British material of this species has been examined. It is very similar in most respects to the other species and only significant points of the male are mentioned here.

MALE:

Antenna entirely dark, relatively shorter than in other species, not longer than thorax, with flagellomeres not much longer than broad.

Thorax black, grey dusted throughout.

Legs yellow, with chaetotaxy as other species.

Wing yellowish. Vein R_4 variable, may be short and diagonal as in other species or may be longer, more curved, ending in costa 2-3 x its length from tip of R_1. Costa extends 0.4 distance from R_5 to M_1. Haltere yellow.

Abdomen mainly dark brown; tergites 2-5 may be mainly yellowish at the base; sternites 2-4 mainly yellowish; segment 5 yellow basally, rest of abdomen dark. Genitalia (Figs. 9-12) brown: gonocoxites with small setose protuberance on each side of medial part similar to that of *oracula* or a little longer; aedeagus also similar to that of *oracula* but relatively shorter.

Wing length 2.3-2.6 mm.

***Pyratula takkae* Chandler, sp. n.** (Figs. 13-16)

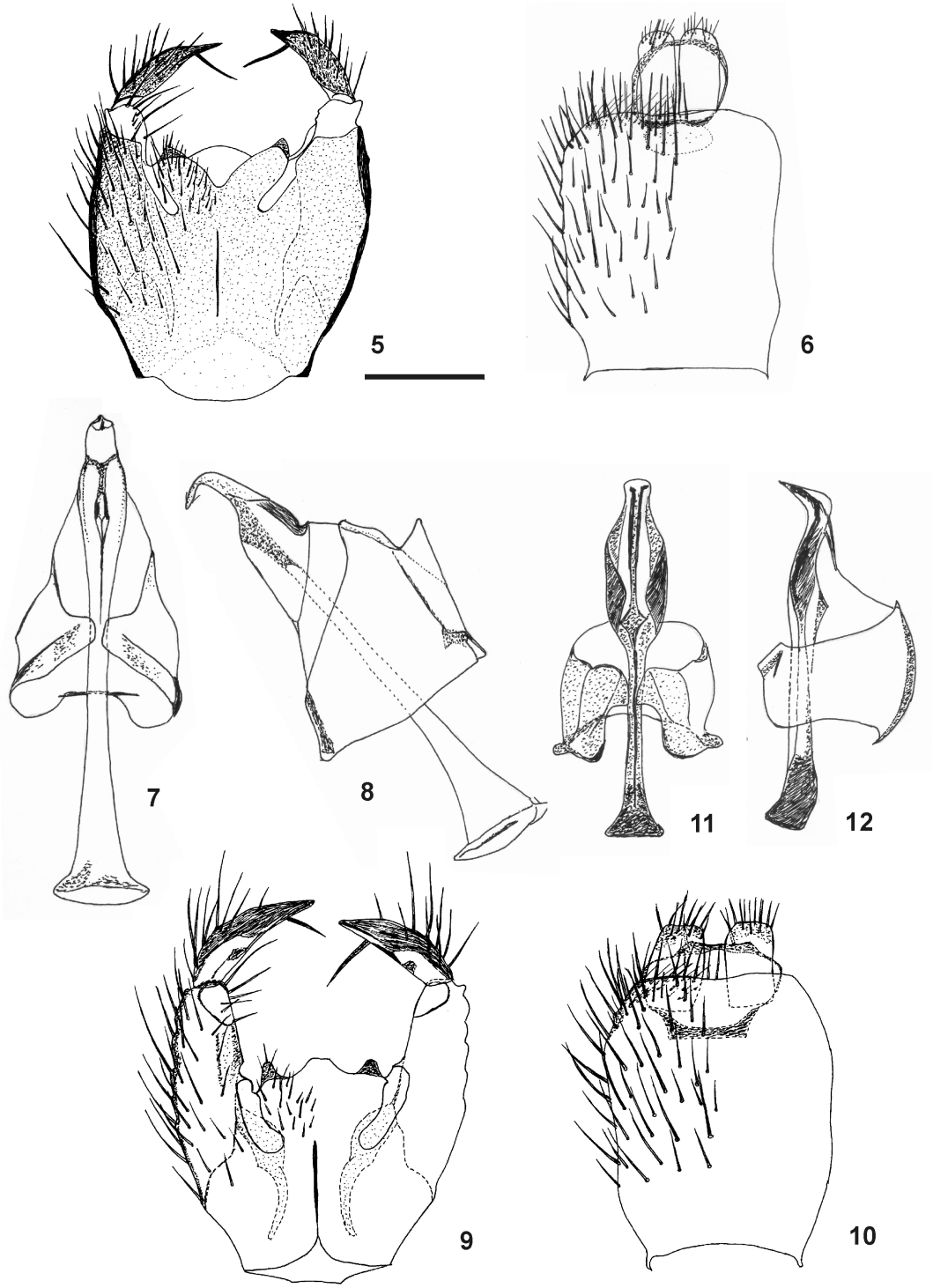
MALE:

Head black, thinly grey dusted, with dark setae. Antenna with scape and pedicel brown; [head of holotype damaged, flagellomeres, proboscis and palpi missing].

Thorax with mesoscutum and scutellum shining black, only thinly grey dusted, with black setae. Pleura and mediotergite also shining black but more strongly grey dusted. Biserial acrostichals and dorsocentrals and strong setae on margin of mesoscutum. Scutellum with a row of subequal marginal setae. A group of setae on mesanepisternum as in other species. Mediotergite bearing a few short dark setae in middle.

Legs yellow, with dark setae, setulae and tibial spurs. Fore first tarsomere two thirds length of tibia. Tibia 2-3 with irregular setulae and irregular series of setae about half tibial diameter in length.

Wing yellowish, slightly brown tinged around margin. Vein Sc ends a little beyond level of Rs. Costa extends 0.4 distance from R_5 to M_1. Vein R_4 diagonal, ending twice its length from tip of R_1. Haltere yellow.



Figures 5-12. Male genitalia of *Pyratula* species. 5-8. *Pyratula oracula* Chandler. 5. Ventral view of gonocoxites and gonostyli. 6. Dorsal view of tergite 9 and cerci. 7. Ventral view of aedeagus. 8. Lateral view of aedeagus. 9-12. *Pyratula perpusilla* (Edwards). 9. Ventral view of gonocoxites and gonostyli. 10. Dorsal view of tergite 9 and cerci. 11. Ventral view of aedeagus. 12. Lateral view of aedeagus. (Scale: 0.1 mm).

Abdomen mainly dark brown; tergites 2-5 vaguely yellowish on basal third. Tergite 7 is a third length of 6; tergite 8 is narrow, half length of 7; sternites 7-8 half length of tergite 6. Genitalia brown (Figs. 13-16): gonocoxites with setose lobes of medial part more widely separated than in other species, each with apical protuberance broad and rounded; aedeagus shallowly bifurcate apically.
Wing length 3.5 mm.

FEMALE:

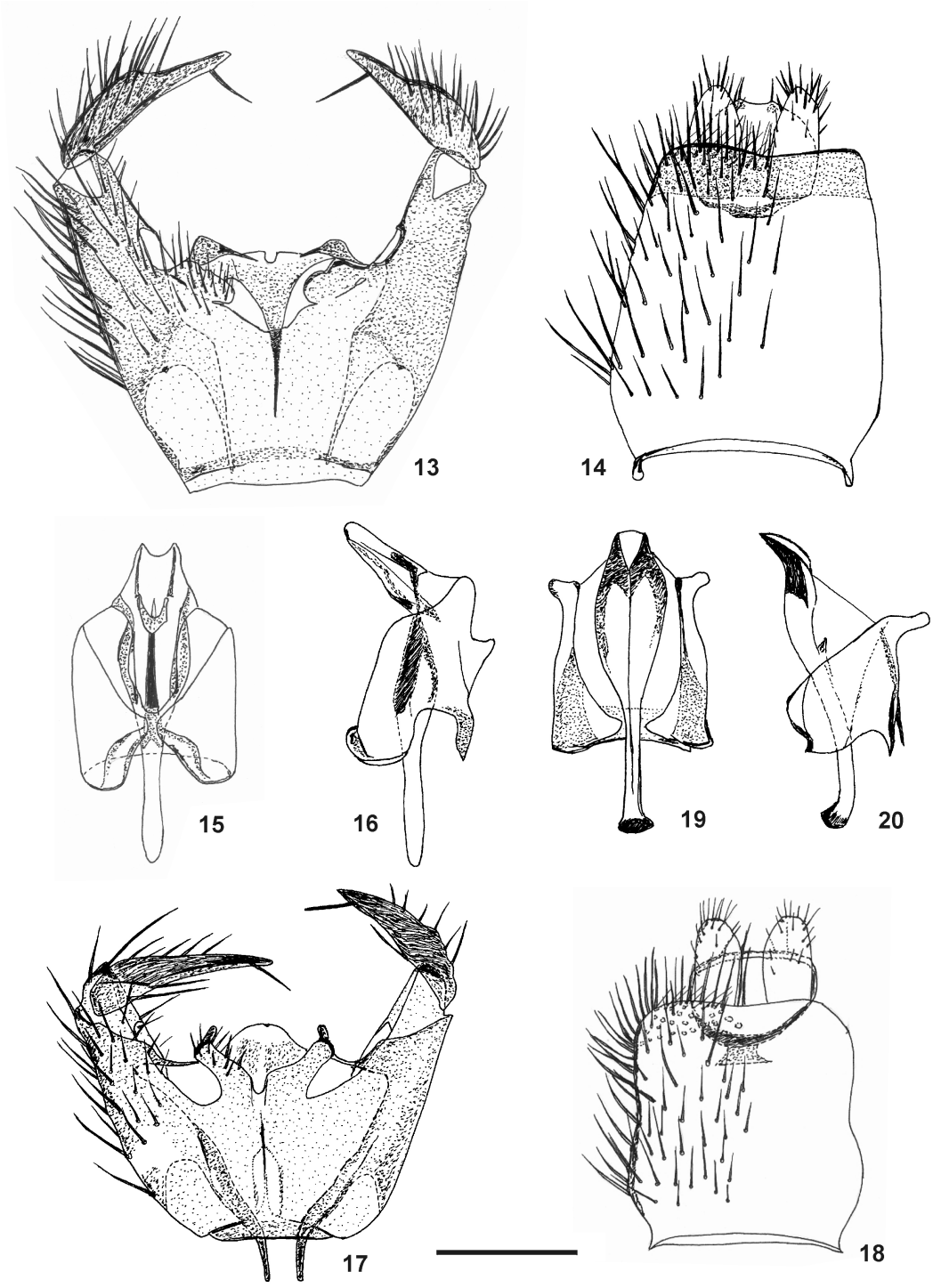
Not examined.

HOLOTYPE MALE:

Greece, Peloponnisos, south west of Lake Takka, 27.IV.1979, A. E. Stubbs *leg.*, deposited in BMNH.

DERIVATIO NOMINIS:

The name is a genitive from the type locality, Lake Takka.



Figures 13-20. Male genitalia of *Pyratula* species. 13-16. *Pyratula takkae* sp. n. 13. Ventral view of gonocoxites and gonostyli. 14. Dorsal view of tergite 9 and cerci. 15. Ventral view of aedeagus. 16. Lateral view of aedeagus. 17-20. *Pyratula ebroensis* sp. n. 17. Ventral view of gonocoxites and gonostyli. 18. Dorsal view of tergite 9 and cerci. 19. Ventral view of aedeagus. 20. Lateral view of aedeagus. (Scale: 0.1 mm).

***Pyratula ebroensis* Chandler & Blasco-Zumeta, sp. n.**
(Figs. 17-20)

MALE:

Head brown, grey dusted with dark setae. Antenna dark brown, about as long as thorax with flagellomeres quadrate. Proboscis and palpus brownish yellow.

Thorax entirely dark brown to blackish, grey dusted, with all setae black, biserial acrostichals and dorsocentrals and strong setae on margin of mesoscutum. Scutellum with a row of subequal marginal setae. A group of setae near upper margin of anterior part of mesanepisternum. Mediotergite bare.

Legs yellow, with dark setae. Fore first tarsomere two thirds length of tibia. Tibia 2-3 with irregular setulae and irregular series of setae about half tibial diameter in length.

Wing yellowish, broadly greyish apically and along hind margin. Vein Sc ends just before base of Rs. R_4 short diagonal, 2.5 - 3 x its length beyond tip of R_1. Costa extends 0.4 distance from R_5 to M_1. Haltere yellow.

Abdomen with tergite 1 brown, tergites 2-5 yellow on basal two fifths, their sternites vaguely brown apically. Segments 6-8 all dark. Tergite 7 a third length of 6; tergite 8 narrow, half length of 7. Genitalia brown (Figs.17-20): gonocoxites with diverging setose lobes of medial part each bearing a narrow apical asetose protuberance; aedeagus relatively short, with an elongate dorsal lateral process on each side of distal margin of its sheath (Figs.19-20).

Wing length 2.7 mm.

FEMALE (described from Maltese material):

Similar to male in most respects, but antenna relatively shorter and distinctly shorter than mesoscutum. Abdomen broadened medially; mainly dark brown, but tergite 2 yellow basally and tergites 2-6 narrowly yellow on apical margin.

HOLOTYPE MALE:

Spain, Zaragoza, Monegros region, Retuerta de Pina, 20.V.1991, Moericke trap, J. Blasco-Zumeta *leg.*, deposited in BMNH.

PARATYPES:

2 ♂♂, same locality, 20.X.1991, Malaise trap; 1 ♂, same locality, 8.VII.1992, light trap.

DERIVATIO NOMINIS:

The specific name is a genitive from the modern name of the River Ebro.

DISCUSSION:

P. ebroensis is also recorded from Malta by CHANDLER & GATT (2000); its occurrence there as well as in the Monegros suggests that it may also occur in North Africa.

***Pyratula alpicola* Chandler, sp. n.**

(Figs. 21-25)

MALE:

Head black, grey dusted. Antenna with scape and pedicel grey dusted, flagellum brown; flagellomeres about twice as long as broad. Palpus brownish yellow, apical palpomere as long as two previous palpomeres together.

Thorax shining dark brown, except for pronotal lobes, spiracular area and pleural sutures yellow. All setae black: acrostichals and dorsocentrals bi- to triserial; long marginal setae on mesoscutum and on pronotal lobes; short irregular scutellar marginal setae. A group of setae on mesanepisternum as above species. Mediotergite bare.

Legs yellow, with dark setae, setulae and tibial spurs. Fore first tarsomere two thirds length of tibia. Tibia 2-3 with irregular setulae and irregular series of setae about half tibial diameter in length.

Wing yellowish. Vein Sc ends before base of Rs. Costa extends about half distance from R_5 to M_1.Vein R_4 short, diagonal, ending 3 x its length beyond tip of R_1. Haltere yellow.

Abdomen brown on segment 1, apical half or a little more of segments 2-5 (these segments yellow basally on both tergites and sternites) and remaining segments. Genitalia brown (Figs.21-25): gonocoxites with apical protuberance on each side of medial part setose as in *oracula* and *perpusilla* but more elongate; aedeagus pointed apically as in *perpusilla* but ejaculatory apodeme narrower and an elongate dorsal lateral process on each side of distal margin of its sheath; aedeagal sheath with a complete sclerotised bridge ventrally (Fig. 23) .

Wing length 2.5-3.0 mm.

FEMALE: Not examined.

HOLOTYPE MALE:

Switzerland, VS, Visp, 13-15.VIII.1993, G. Bächli *leg.*, deposited in ETHZ.

PARATYPES (all Switzerland):

2 ♂♂, same data as holotype; 3 ♂♂, 9-11.VIII.1993, data otherwise as holotype; 3 ♂♂, 23.VIII-2.IX.1977, Leuk, VS, G. Bächli; 2 ♂♂, 24-31.VIII.1981, Faido, TI, G. Bächli; 1 ♂, 6-8.IX.1979, Ohrid, YU, G. Bächli.

OTHER MATERIAL:

1 ♂, Andorra, Santa Coloma, Malaise trap, VIII.1993, J. Pujade *leg.*

DERIVATIO NOMINIS:

The name is a noun in apposition, meaning a mountain dweller.

DISCUSSION:

This species is evidently widespread in the Swiss Alps but the male from Andorra indicates that it is also present in the Pyrenees. It is of interest that another species, *P. subcanariae* sp. n., described below, was collected with it at Leuk, the only instance of two species of this group known to be sympatric. *P. alpicola* is the only species seen without the aedeagal sheath clearly medially divided ventrally.

***Pyratula subcanariae* Chandler, sp. n.**

(Figs. 26-30)

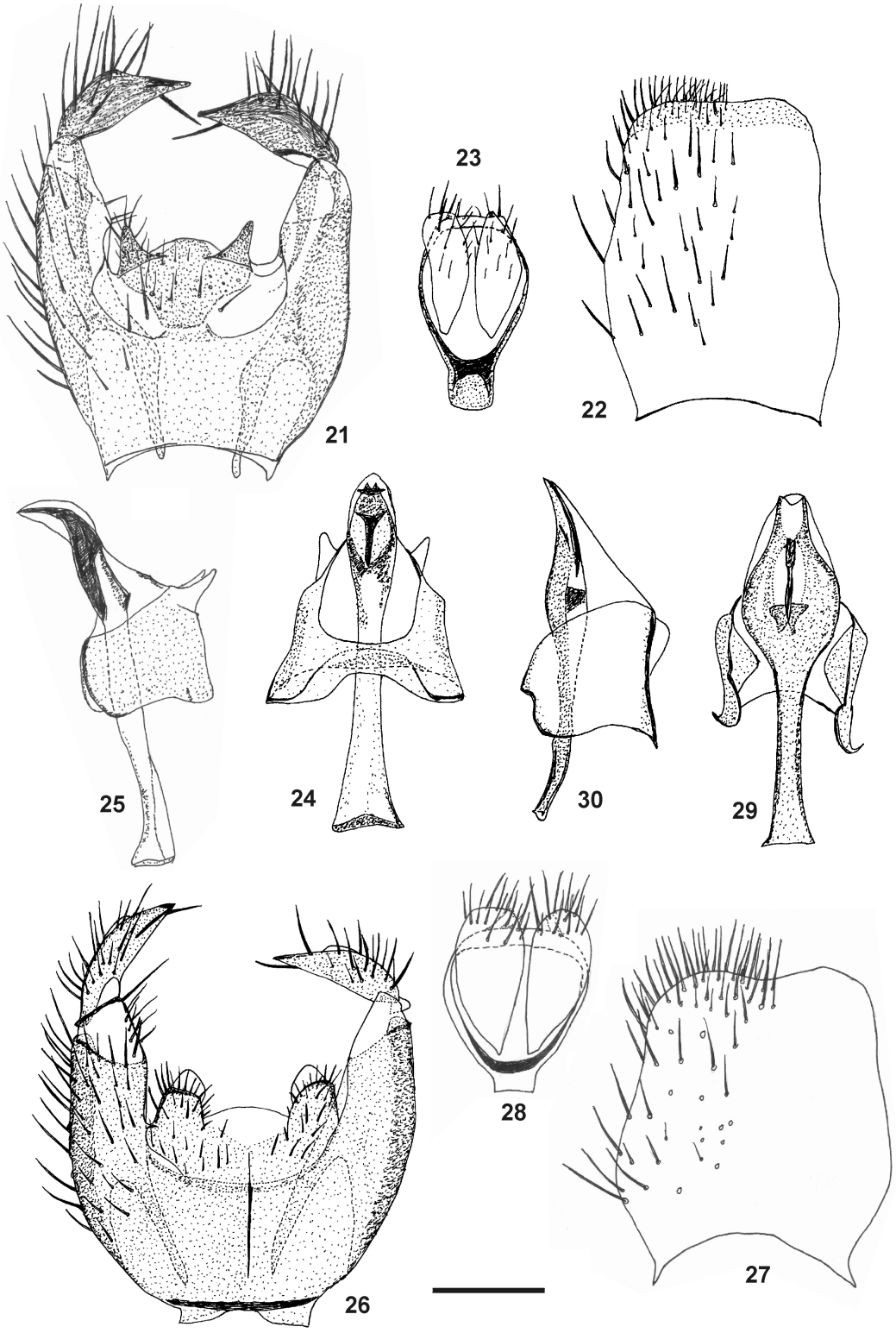
MALE:

Head black, grey dusted. Antenna with scape brown, pedicel more yellowish; flagellum brown, with flagellomeres 2.5 x as long as broad. palpus brownish, apical palpomere 1.5 x length of penultimate, as thick as preceding palpomere basally but tapered apically.

Thorax shining dark brown, including pleura. Chaetotaxy as *P. alpicola* including bare mediotergite. Prothorax brown, only spiracular area yellow.

Legs yellow (only left legs present in holotype). Fore first tarsomere 0.6 length of tibia 1.

Wing yellowish, with brownish veins. Vein R_4 4 x its length beyond R_1. Costa extends 0.6 distance from R_5 to M_1. Haltere yellow.



Figures 21-30. Male genitalia of *Pyratula* species. 21-25. *Pyratula alpicola* sp. n. 21. Ventral view of gonocoxites and gonostyli. 22. Dorsal view of tergite 9. 23. Dorsal view of cerci. 24. Ventral view of aedeagus. 25. Lateral view of aedeagus. 26-30. *Pyratula subcanariae* sp. n. 26. Ventral view of gonocoxites and gonostyli. 27. Dorsal view of tergite 9. 28 Dorsal view of cerci. 29. Ventral view of aedeagus. 30. Lateral view of aedeagus. (Scale: 0.1 mm).

Abdomen entirely brownish, without yellow markings. Genitalia brown (Figs. 26-30): structure very like *canariae*, with broad setose distal lobe on each side of medial part of gonocoxites (Fig. 26) bearing a blunt asetose protuberance, which is distinctly shorter than broad; aedeagus also similar to *canariae* but lacking the elongate dorsal process on each side of the distal margin of the sheath.
Wing length 3.4 mm.

FEMALE: Not examined.

HOLOTYPE MALE:

Switzerland, VS, Leuk, 23.VIII-2.IX.1977, G. Bächli *leg.*, deposited in ETHZ.

DERIVATIO NOMINIS:

The name alludes to close resemblance of the genital structure to that of *P. canariae* and is in the genitive case.

Macrocerinae

***Macrocera pusilla* Meigen, 1830**

MATERIAL from Retuerta de Pina, Monegros:

1 ♀, 20. VII. 1993, light trap, J. Blasco-Zumeta *leg.*

MYCETOPHILIDAE

Gnoristinae

***Boletina augusta* Chandler & Blasco-Zumeta, sp. n.**
(Figs. 31-36)

MALE:

A mainly dark coloured species with yellow legs; all hairs and setae of body and legs black.

Head black, grey dusted. Antenna long, slender, twice length of head and thorax, with scape, pedicel and base of first flagellomere yellow, otherwise brown. Palpus yellowish brown.

Thorax brown, thinly grey dusted with three dark brown dorsal stripes, the median divided by a grey dusted line along the row of acrostichal setae, strong dorsocentral setae between the stripes. Scutellum dark brown, mediotergite dark brown dorsally. Laterotergite bare.

Legs yellow, tibial spurs paler yellow. Tibiae with weak setae, their diameter or less in length. Tibia 2 with 2 anterior, 2 dorsal, 3 posterior, 11 posteroventral and 6-7 anteroventral setae. Tibia 3 with 4-5 anterior, 3 stronger (equal to tibial width) and several shorter (on apical part) dorsal, several short close-set posterior (on apical third) and 6 short weak ventral setae.

Wing (Fig. 36) with yellowish membrane, but with brown seams along veins which are thick and brown; an elongate brown patch centred on Rs, limited by R_1, R_5 and r-m. Vein Sc ends in costa distinctly before base of Rs. R_5 downturned apically, ending at tip of costa. Posterior fork short, but its base level with that of the median fork. Haltere yellow.

Abdomen mainly dark brown, thinly grey dusted, tergites 2-6 yellow on apical quarter or less. Genitalia (Figs. 31-34) large, yellow, brownish laterally on gonocoxites, which have a truncated medially notched apical margin.(Fig. 31); gonostylus (Fig. 32) elongate, constricted medially, with a short apical process bearing short spines; tergite 9 (Fig. 33) with narrowed apical part, cerci (Fig. 34) concealed beneath it *in situ* bear uniform short setae.

Wing length 2.6-3.3 mm, about 4 x as long as broad.

FEMALE:

Similar to male in most respects. Antenna much shorter, only a little longer than head and thorax together. Abdominal colour as male on segments 2-6; segments 7-8 and ovipositor (Fig. 35) dark, but two-segmented cercus yellow.

Wing length 3.5-4.2 mm, relatively broader than in male, only about 3 x as long as broad.

HOLOTYPE MALE:

Spain, Zaragoza, Monegros region, Retuerta de Pina, 22.XII.1990, pitfall trap, J. Blasco-Zumeta *leg.*, deposited in BMNH.

PARATYPES (all from same locality):

2 ♂♂, 11 ♀♀, data as holotype; 4 ♂♂, 10 ♀♀, 28.XI.1990, pitfall trap; 5 ♂♂, 6 ♀♀, 16.I.1991, pitfall trap; 1 ♀, 19.II.1991, pitfall trap.

DERIVATIO NOMINIS:

The name relates to the Roman name of the city of Zaragoza (Caesaraugusta, which takes its name from the emperor Augustus) and is an adjective.

DISCUSSION:

This is a very distinct species, resembling *B. trivittata* (Meigen) in the structure of the male genitalia and the costa terminating at the tip of R_5. It is, however, quite distinct in the relatively short narrow wings with brown seamed veins and the brown patch around Rs.

Other specimens of this species were collected by the Moericke, Malaise and Wilkening traps, in the coloured dishes, drowned in a cistern and by sweeping from plants, *Salsola versiculata* and *Gypsophila struthium*. A female was also found on the ground under a stone on 10.I.1990. All captures were in the winter months from November to March.

Leiinae

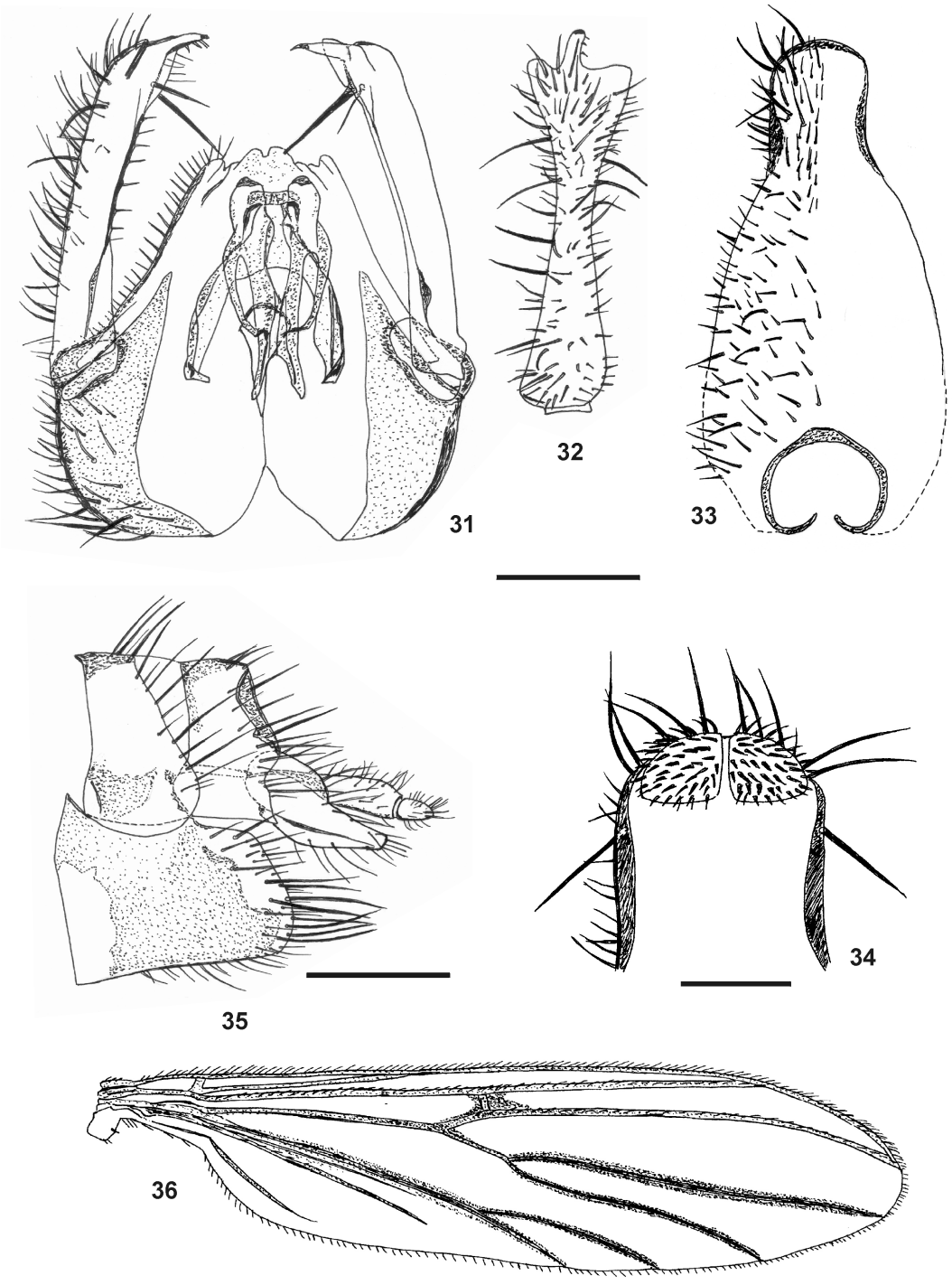
***Docosia fuerteventurae* Chandler & Ribeiro, 1995**
(Figs. 37-41)

MALE:

Head black, with yellow setae. Antenna black, 1.75 x head and thorax together; flagellomeres 3 x long as broad. palpus brown, shorter than eye height, slender paler apical palpomere about as long as penultimate.

Thorax black, thinly grey dusted, more shining on scutellum and mediotergite; mesoscutum clothed with yellow setae except on 4 narrow bare stripes; prescutellar setae as long as scutellum, scutellar marginals shorter; long yellow setae on prothorax. Pleura and mediotergite bare.

Legs with all coxae black. Femora mainly yellow, 1-2 brown on basal half of ventral margin, 3 at most on basal third but also brownish at tip. Tibiae and tarsi yellow. Coxae and femora with yellow setae; tibiae and tarsi with black setae and setulae. Tibia 2 with 3 anterior, 4 posterodorsal, 2-4 short posterior (near tip) and 3 very short anteroventral setae. Tibia 3 with 5-6 short anterior, 7-8 anterodorsal, 4-6 posterodorsal (on basal two thirds, with 7-8 shorter close-set setae near tip), 7-8 short posterior and 4-8 short posteroventral setae.

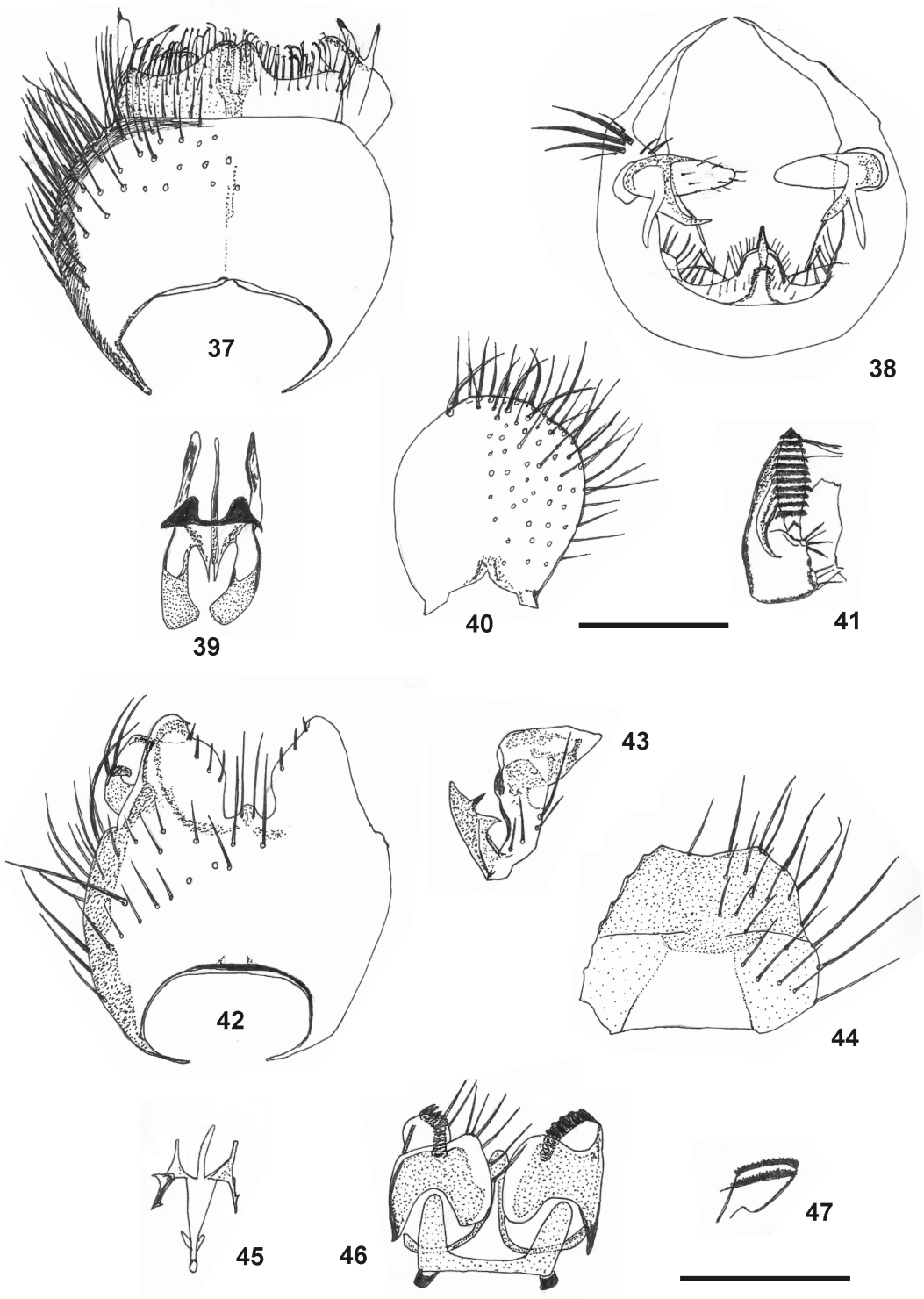


Figures 31-36. *Boletina augusta* sp. n. 31-34. Male genitalia. 31. Dorsal view of gonocoxites, gonostyli and aedeagal complex (with tergite 9 and cerci removed). 32. Lateral view of gonostylus. 33. Dorsal view of tergite 9. 34. Ventral view of apical part of tergite 9 to show cerci. 35. Female, lateral view of ovipositor. 36. Wing. (Scale: 0.2 mm, except Fig. 33 which is 0.1 mm).

Wing clear with costa and radial veins brown. Costa extends only a quarter distance from R_5 to M_1. Vein Sc ends in R just before level of base or r-m. R_1 2.5 x length of r-m. Stem of median fork shorter than r-m; posterior fork begins a little before base of median fork. Veins setose except for Sc, tb, stem of median fork and bases of its fork veins. Vein A_1 ends just before level of base of posterior fork. Haltere pale yellow.

Abdomen black, grey dusted, with short yellow setae. Tergites 7 and 8 short, half length of 6, 8 narrower. Genitalia (Figs. 37-41) black: gonocoxites ventrally (Fig. 37) with broad apical flange bearing apically bent setae and a tapered median dorsal process (Fig. 38); gonostylus (Figs. 37-38) with deeply bifurcate basal lobe and rounded apically lobe; tergite 9 (Fig. 40) rounded apically; cercus (Fig. 41) spindle-shaped with 11 combs of spinose setae.

Wing length 2.8-3.8 mm.



Figures 37-47. Male genitalia of *Docosia* species. 37-41. *D. fuerteventurae* Chandler & Ribeiro. 37. Ventral view of gonocoxites and gonostyli. 38. Posterior view of gonocoxites and gonostyli. 39. Aedeagus and parameres. 40. Tergite 9. 41. Cercus. 42-47. *D. morionella* Mik. 42. Ventral view of gonocoxites and left gonostylus. 43. Lateral view of gonostylus. 44. Tergite 9. 45. Aedeagus and parameres. 46. Dorsal view of cerci. 47. Ventral view of a cercus. (Scale: 0.2 mm, *D. fuerteventurae*; 0.1 mm, *D. morionella*).

FEMALE:

Very similar to male, but antenna relatively narrower and shorter, about 1.5 x head and thorax together. Abdomen with tergite 7 less than half as long as 6, 8 short and contracted medially; ovipositor (Fig. 66) short, yellowish brown.

MATERIAL from Retuerta de Pina, Monegros:

3 ♂♂, 19.II.1991, Malaise trap; 11 ♂♂, 1 ♀, 9.III.1991, coloured dish between *Juniperus* and *Rosmarinus officinalis*; 10 ♂♂, 3 ♀♀, 9.III.1991, Malaise trap; 1 ♂, 25.III.1991, Moericke trap; 5 ♂♂, 1 ♀, 25.III.1991, Malaise trap; 2 ♂♂, 25.III.1991,

coloured dish between *Juniperus* and *Brachypodium retusum*; 1 ♀, 30.III.1991, swept from *R. officinalis*; 2 ♂♂, 7.V.1991, coloured dish between *Pinus halepensis* and *R.. officinalis*; 1 ♂, 20.II.1993, drowned in cistern; 1 ♀, 13.III.1993, light trap; 1 ♂, 20.II.1994, rabbit hole; 1 ♂, 14.IV.1994, rabbit hole.

DISCUSSION:

D. fuerteventurae was described only from the Canarian male holotype. The Spanish material agrees in most characters, including the entirely black coxae contrasted with the otherwise mainly yellow legs. The description given here includes some characters not described for the holotype and some small differences such as in tibial chaetotaxy. These and differences in genital structure (e.g. more tapered median gonocoxal process) apparent from the figures are not considered of specific significance.

***Docosia gilvipes* (Haliday in Walker, 1856)**

MATERIAL from Retuerta de Pina, Monegros:

1 ♀, 7.I.1991, Malaise trap; 1 ♂, 20.II.1991 and 1 ♂, 7.V.1991, Moericke trap; 1 ♂, 1 ♀, 7.V.1991, coloured dish.

***Docosia helveola* Chandler, 1994**

MATERIAL from Retuerta de Pina, Monegros:

1 ♂, 25.IV.1991, coloured dish between *Juniperus thurifera* and *Rosmarinus officinalis*.

DISCUSSION:

This species was described from several males from Israel (CHANDLER, 1994) and the similar genital structure to *D. muelleri* Plassmann, 1986 from Sweden was mentioned. The type of the latter species has been examined by Jan Ševcik (pers. comm.), who has confirmed that it is not conspecific with *D. helveola*. The Spanish specimen agrees with the types in all significant characters including leg colour (coxae widely dark basally and femora 1-2 dark beneath on basal half; femur 3 is also brown at extreme base ventrally), which distinguishes it from the other Monegros species.

***Docosia morionella* Mik, 1884** (Figs. 42-47)

MALE:

Head black, with short dark setae. Antenna black, 1.5 x head and thorax together; flagellomeres 2.5 x long as broad. Palpus brownish yellow, as long as head; slender apical palpomere as long as two preceding palpomeres together.

Thorax black, with short black setae on mesoscutum, scutellum and prothorax. Pleura and mediotergite bare.

Legs with coxae, femora and tibiae entirely black but tarsi yellow; all setae and setulae black, tibial spurs yellow. Tibia 2 with 3 short anterior, 6-7 short dorsal, 2 strong posterodorsal and 5 ventral setae. Tibia 3 with 9 short anterodorsal, 8 dorsal (3 stronger, as long as tibial width) and 6 very short posterodorsal setae.

Wing colourless, with costa and radial veins brownish. Costa extends nearly halfway from R_5 to M_1. Vein Sc ends in R, just before level of base of r-m. R_1 2.5 x length of r-m. Stem of median fork shorter than r-m; posterior fork begins a little before base of median fork. Veins setose except for Sc, tb, stem of median fork and bases of its fork veins. Vein A_1 ends level with base of posterior fork. Haltere with yellow stem and black knob.

Abdomen black with short black setae and longer setae on apical margin of tergites, these progressively longer on tergites 4-8. Tergite 7 half length of 6, 8 a little longer than 7 but narrower. Genitalia (Figs. 42-47) black: gonocoxites ventrally (Fig. 42) with broadly bilobed apical margin; gonostylus (Fig. 43) deeply bilobed; tergite 9 (Fig. 44) blunt apically; cercus (Figs. 46-47) with only two combs of spinose setae.

Wing length 2.4 mm.

FEMALE: Spanish material has not been examined.

MATERIAL from Retuerta de Pina, Monegros:

1 ♂, 20.I.1991, Malaise trap.

DISCUSSION:

On the basis of the external characters, differing from other European species of *Docosia* in the black-knobbed halteres, it is considered probable that this specimen belongs to *D. morionella*. This species was hitherto known only from the female, described from Austria and since recorded only from Scotland (CHANDLER, 1987). The genital structure bears some resemblance to *D. gilvipes* including the cercus with only two combs of setae. Apart from haltere colour, it differs from *gilvipes* in a bare Sc ending in R and the mainly black legs.

***Leia bimaculata* (Meigen, 1804)**

MATERIAL from Retuerta de Pina, Monegros:

1 ♀, 7. I. 1991, Malaise trap; 3 ♂♂, 9. II. 1991 and 1 ♀, 24. II. 1990, coloured dishes; 1 ♂, 9. II. 1992, Wilkening trap in *Pinus halepensis*; 1 ♀, 20.III.1992, Wilkening trap in *P. halepensis*.

***Novakia simillima* Strobl, 1910**

MALE:

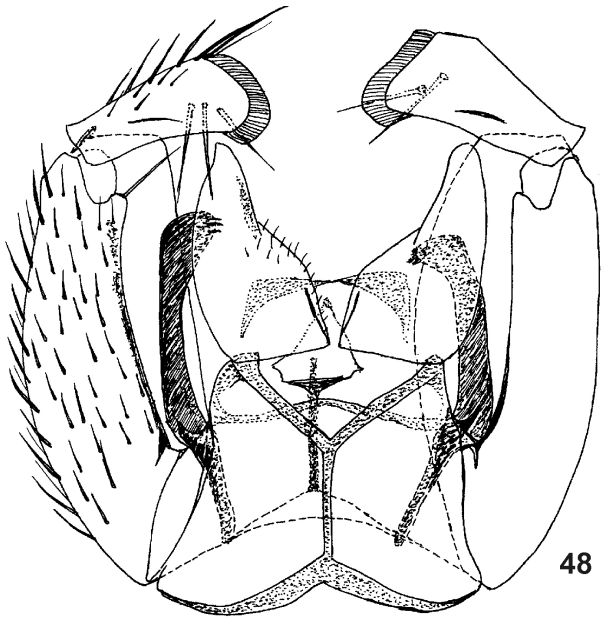
Body black, more grey dusted than in *N. scatopsiformis* Strobl, 1893,, with setae lighter, yellowish brown and thoracic setae longer than in *scatopsiformis*. Antenna distinctly longer; scape and pedicel short and first flagellomere quadrate but other flagellomeres 2-3 x long as broad, apical flagellomere elongate. Palpus brown.

Legs dark brown, fore leg lighter as in *scatopsiformis* tibial spurs yellowish. Tibia 2 with 4 anterior, 4 dorsal, 4 posterior (near tip) and 4 short ventral setae. Tibia 3 with 8 anterior and 7-8 dorsal setae.

Wing greyish. Costa reaches 0.4-0.5 distance from R_5 to M_1. Venation and distribution of setae otherwise similar to *scatopsiformis*, but median fork longer than its stem. Radial fusion subequal to or longer than R_1, shorter than r-m. Haltere black.

Abdomen with tergites 7-8 shorter than their sternites, but longer relatively than in *scatopsiformis*.

Wing length 2.2-2.5 mm.



Figures 48. Male genitalia of *Macrorrhyncha gallica* sp. n. 2. Dorsal view of tergite 9 and cerci. 3. ventral view of gonocoxites and gonostyli. 4. As 3 (smaller scale) but including aedeagal complex. (Scale: 0.2 mm). Dorsal view of male genitalia of *Azana flavohalterata* Strobl. (Scale: 0.1 mm).

FEMALE:

Antenna short, two thirds length of thorax, with flagellomeres 1-4 quadrate, from 5 onwards shorter than broad. Tergite 8 with strong setae and lower golden fringe as in *scatopsiformis*. Cercus long, yellow, flattened, basal segment elongate, apical segment rounded.

Wing length 1.6-1.8 mm.

MATERIAL from Retuerta de Pina, Monegros:

Comprised 124 ♂♂ and 39 ♀♀, collected from 9 March to 7 May 1991, both in coloured dishes and in the Moericke and Malaise traps.

DISCUSSION:

N. simillima has been regarded as doubtfully distinct from *N. scatopsiformis*, but the Monegros material has confirmed that it is distinct. Type material of both species (Strobl collection, Admont, Austria) and a large material of *N. scatopsiformis* has been compared with the Monegros material and the description of the latter given here indicates points of difference between the species. The holotype male of *simillima* (slide mounted with the genitalia separated on the same slide) has the antennae missing but the costa extends 0.5 distance to M_1. The specimen labelled as holotype of *scatopsiformis*, although labelled as a male by Strobl, is a female but has the costa only reaching a third of the distance to M_1.

Sciophilinae

***Azana anomala* (Staeger, 1840)**

MATERIAL from Retuerta de Pina, Monegros:

1 ♂, 9.IV.1990, collected on *Juniperus thurifera*; 1 ♂, 25.IV.1992, carrion trap in *Pinus halepensis*.

***Azana flavohalterata* Strobl in Czerny & Strobl, 1909** (Fig. 48)

MATERIAL from Retuerta de Pina, Monegros:

37 ♂♂, 13 ♀♀, collected in March 1990, January to May 1991 and April 1992, in coloured dishes, in the Moericke and Malaise traps and in a pitfall trap with vinegar. One male was swept from xeric grasses, 20.IV.1992.

DISCUSSION:

The identity of this species was discussed by CHANDLER (1994) and CHANDLER & RIBEIRO (1995) but it was not figured. COHER (1995) described *bulgarense* Coher, 1995 from Bulgaria, but his figures of the male genitalia indicated it to be *flavohalterata* and this synonymy is being published by COHER *(in press)*. A figure of a Spanish specimen is given here (Fig. 48); the form of the gonostylus is very characteristic, unlobed and apically broadened with 3 strong ventral setae and an apical flange of close-set setae. The parts identified as inner style and aedeagus by Coher are here respectively considered to be parameres and the sclerotised part of tergite 9.

The *Sciophila hirta* Meigen, 1818 group

***Sciophila parviareolata* Santos Abreu, 1920**

MATERIAL from Retuerta de Pina, Monegros:

1 ♂, 9.IV.1991; 4 ♂♂, 7.V.1991; 1 ♂, 20.V.1991; probable females on latter date and 17.XI.1990. Collected in coloured dishes and the Moericke trap.

DISCUSSION:

CHANDLER (1999) referred to this as an undescribed species close to *S. hirta* Meigen, 1818, but subsequently re-examined the lectotype of *S. parviareolata*, described from the Canary Islands,

which had been synonymised with *hirta* by ZAITZEV (1982). Some additional material from Portugal and Britain has been found to be conspecific. CHANDLER & RIBEIRO (1995) accepted the synonymy with *hirta*, but CHANDLER (2001) has restored *parviareolata* from synonymy and figured the male genitalia of *hirta* and *parviareolata* for comparison. They differ mainly in small details of the structure of the gonocoxites, notably the small median sternal process which is narrow and blunt ended in *hirta* but broader and bifurcate in *parviareolata*.

The *Sciophila lutea* Macquart, 1826 group

The species related to *S. lutea* differ principally in the distal margin of the dorsal gonocoxal lobe and that of the gonocoxal apodemes, which are not clearly visible in situ because of being concealed below the large tergite 9, which is broad apically with two strong marginal setae. Several Nearctic and eastern Palaearctic species of this group were described by ZAITZEV (1982) but only *lutea* itself was recorded from Europe. However, some other species of this group have been found to occur around the Mediterranean Region. CASPERS (1991) figured a specimen from Crete, which he identified as *kashmirensis* Zaitzev, 1982 although it differed in details of the gonocoxal structures from Zaitzev's figures; a conspecific Cretan specimen has been examined (Fig. 51). A closely related species, *S. eryngii* Chandler, 1994 (Figs. 49-50) was described from Israel (CHANDLER, 1994). These species and two others described here (*delphis* sp. n. from Greece and *corlutea* sp. n. from Corsica, the Channel Islands and the mainland of western Europe) have a variously bifurcate apodemal process but a simply rounded gonocoxal lobe.

The Spanish species described here, *S. iberolutea* sp. n., agrees with *S. lutea* in also having a bifid process on the gonocoxal lobe. In *S. lutea* (Fig. 52) the two bifid processes are roughly equal in development but in *iberolutea* the gonocoxal process is narrower and only shallowly bifid. Material of this group from North Africa and Malta is also considered to belong to *S. iberolutea*; the processes are similar but show small differences in proportions (Figs. 59-60 show the Moroccan specimen).

Females of this group are generally similar to males except in genital characters. The female was associated with *eryngii* on assumption that this was the only species of the group occurring in Israel and females can be associated with *corlutea* and *iberolutea* on a similar basis, Maltese females being listed as *iberolutea* by CHANDLER & GATT (2000). However, they cannot presently be separated structurally from other members of the *lutea* group.

***Sciophila corlutea* Chandler, sp. n.** (Figs. 55-56)

MALE:

Head dark brown, grey dusted. Antenna yellow at base to third flagellomere, rest brown;
most flagellomeres about 3 x as long as broad. Palpus brownish yellow.

Thorax brownish yellow with three shining dark brown stripes or entirely orange brown. Scutellum brownish yellow; pleura and mediotergite brown. All hairs and setae yellow. Laterotergite and mediotergite bearing setae.

Legs yellow with dark patch below trochanters. All setae on coxae and femora yellow; tibial setulae and spurs yellow except setulae on apical quarter which are darkened., tarsal setulae and setae on tibia 2-3 dark. Tibia 2 with 3 anterodorsal, 3 posterodorsal and 1-2 posteroventral setae. Tibia 3 with 5 anterodorsal, 5 dorsal and 6 posterodorsal setae, 1-2 fine diagonal posterior setae near tip.

Wing with both microtrichia and macrotrichia evenly distributed on membrane; long setulae above and below Sc and basal part of R_1. Vein Sc_2 level with base of Rs; R_4 close to Rs, forming a quadrate cell; r-m shorter than stem of median fork; base of posterior fork well beyond that of median fork. Haltere yellow.

Abdomen shining dark brown. Genitalia (Figs. 55-56) yellow; gonocoxal apodeme with a bifurcate apical process as in other members of *lutea* group, its branches similar and pointed apically, but adjacent dorsal lobe of gonocoxite evenly rounded without any processes.

Wing 3.6-4.0 mm.

FEMALE:

Very similar; Channel Islands females are entirely orange yellow in colour. Wing length 3.6-4.1 mm.

HOLOTYPE MALE:

France, Corsica, Gorges de la Restonica, 1.VI.1972, L. Matile *leg.*, MNHN.

PARATYPES:

1 ♂, France, Var, Port Cros, 11.X.1963, L. Matile *leg.*, MNHN; 1 ♂, saltmarsh at Étang d'Urbino, 7.V.1990, R.S. Key *leg.*; 9 ♂♂, 3 ♀♀, Channel Islands, Jersey, La Mielle de Morville, 25.VII.1991, A. Warne *leg.*; 3 ♂♂, 9 ♀♀, Channel Islands, Jersey, La Mielle de Morville, 2.IX.1991, A. Warne *leg.*; 1 ♂, Switzerland, Sierre, 2.XI.1887, Huguenin *leg.*, ETHZ.

DERIVATIO NOMINIS:

The name is an adjective based on occurrence in Corsica and relationship to *S. lutea*.

***Sciophila delphis* Chandler sp. n.**

(Figs. 53-54)

MALE:

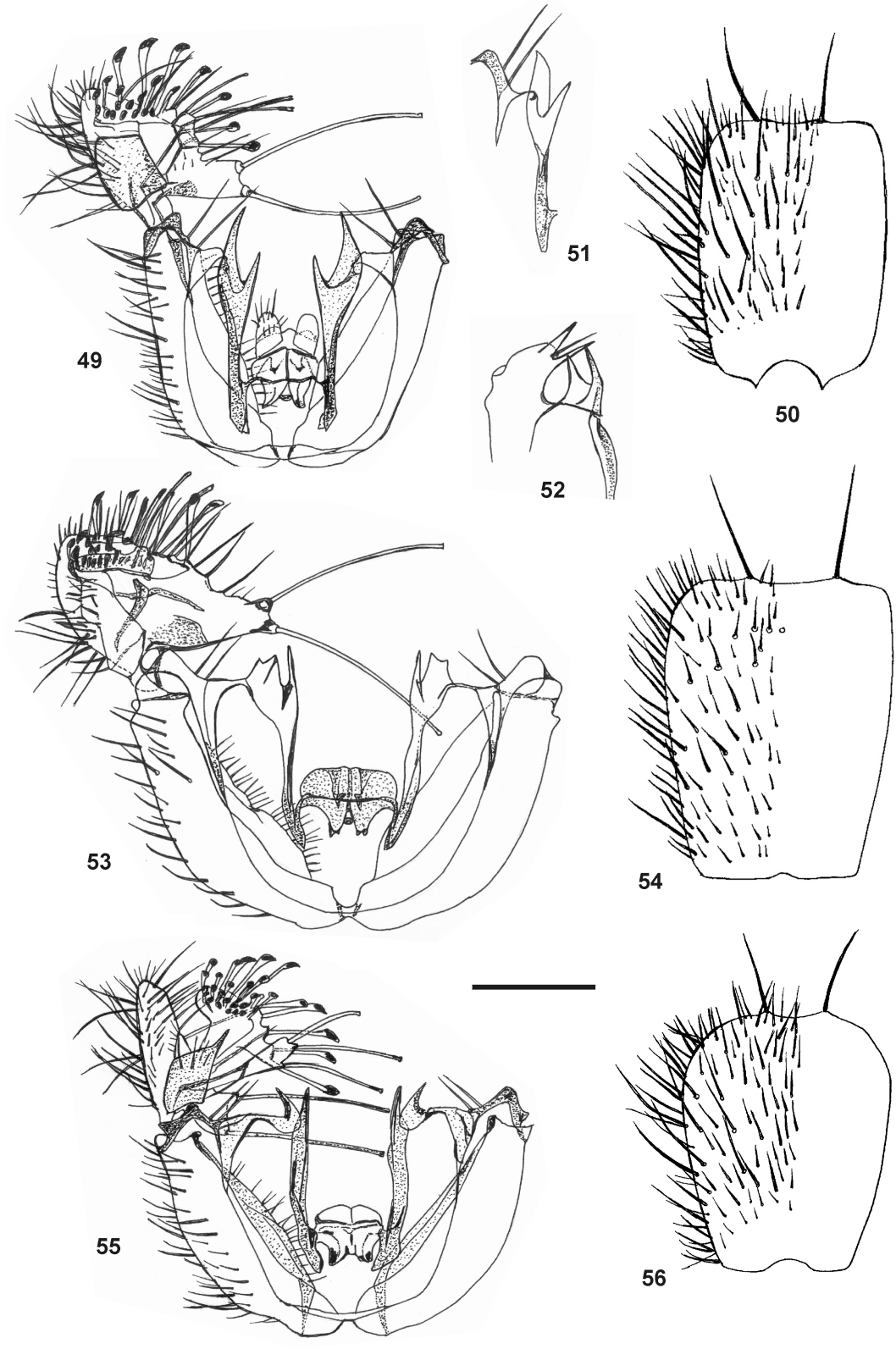
Head black, grey dusted. Antenna with scape brown, pedicel and base of flagellum to flagellomere 5 yellow, rest brown; most flagellomeres about 2.5 x as long as broad. Palpus yellow.

Thorax entirely orange yellow, with darker stripes scarcely indicated. Colour and distribution of setae as in *S. corlutea*.

Legs yellow. All setae on coxae and femora yellow; tibial setulae and spurs yellow, tarsal setulae and setae on tibia 2-3 dark. Tibia 2 with 4 anterodorsal, 2 posterodorsal and 4 posteroventral setae. Tibia 3 with 6 anterodorsal, 5 dorsal and 5 posterodorsal setae, 4 posterior setae on apical third.

Wing as *S. corlutea*. Haltere yellow.

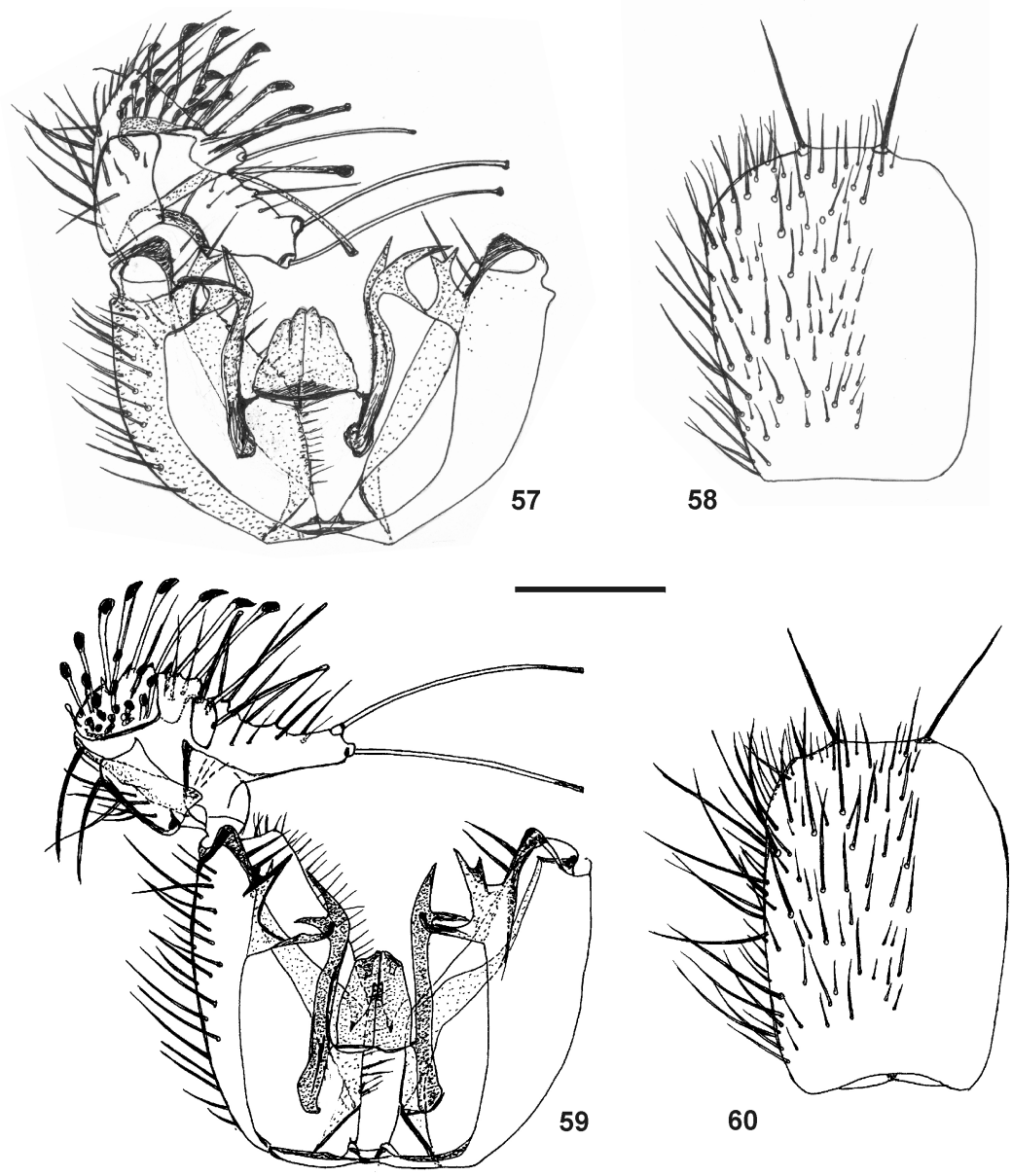
Abdomen yellow. Genitalia (Figs. 54-55) yellow; structure similar to *S. corlutea* in that dorsal



Figures 49-56. Male genitalia of *Sciophila* species. 49-50. *S. eryngii* Chandler. 49. Dorsal view with tergite 9 removed. 50. Tergite 9. 51. Dorsal lobe of gonocoxite and gonostylar apodeme of *S. kashmirensis* Zaitzev (sensu Caspers, Crete). 52. Dorsal lobe of gonocoxite and gonostylar apodeme of *S. lutea* Macquart. 53-54. *S. delphis* sp. n. 53. Dorsal view with tergite 9 removed. 54. Tergite 9. 55-56. *S. corlutea* sp. n. 55. Dorsal view with tergite 9 removed. 56. Tergite 9. (Scale: 0.25 mm).

gonocoxal lobe is rounded without any pointed processes but the apical processes of the gonocoxal apodeme are differently formed, the inner process narrow and pointed but the outer process broad and itself shallowly bifurcate apically.

Wing length 4.0 mm.



Figures 57-60. Male genitalia of *Sciophila iberolutea* sp. n. 57-58. Typical example from Spain. 57. Dorsal view with tergite 9 removed. 58. Tergite 9. 59-60. North African specimen. 59. Dorsal view with tergite 9 removed. 60. Tergite 9. (Scale: 0.25 mm).

FEMALE: Not recognised.

HOLOTYPE MALE:

Greece, Fokis, Delphi, 5.V.1979, A. E. Stubbs *leg.*, deposited in BMNH.

DERIVATIO NOMINIS:

The name is based on the type locality and is a noun in apposition.

***Sciophila iberolutea* Chandler & Blasco-Zumeta, sp. n.**
(Figs. 57-60)

MALE:

Head dark brown. Antenna with scape, pedicel and basal one or two flagellomeres yellow, rest brown; most flagellomeres about 3 x as long as broad. Palpus yellow.

Thorax brownish yellow with three more or less fused stripes on mesoscutum. Scutellum brownish yellow; pleura and mediotergite brown. All setae yellow. Laterotergite and mediotergite bearing setae.

Legs yellow. All setae on coxae and femora yellow; tibial setulae and spurs yellow, tarsal setulae and setae on tibia 2-3 dark. Tibia 2 with 4 anterior, 1 posterodorsal and 3 posteroventral setae. Tibia 3 with 5-6 anterodorsal, 4-5 dorsal, 5 posterodorsal and 2-3 posterior (near tip) setae.

Wing with both microtrichia and macrotrichia evenly distributed on membrane. Vein Sc_2 level with base of Rs; R_4 close to Rs, forming a quadrate cell; r-m shorter than stem of median fork; base of posterior fork well beyond that of median fork. Haltere yellow.

Abdomen shining dark brown. Genitalia (Figs. 57-

58) yellow; structure very close to *lutea* with distal lobe of gonocoxal apodeme comprising a pair of outwardly directed pointed processes, approximated to inwardly directed bifurcate process of dorsal lobe of gonocoxites; the latter process is narrow and only shallowly bifurcate apically, while in *lutea* it is broader and deeply bifurcate.

Wing length 3.4-4.3 mm.

FEMALE:

Very similar, entirely brownish yellow in colour or with abdomen partly or entirely brown and thorax sometimes with fused brown stripes on disc of mesoscutum. Antenna yellow at base, to second flagellomere. Wing length 4.2-4.5 mm (Maltese material).

HOLOTYPE MALE:

Spain, Monegros region, Retuerta de Pina, 7.V.1991, Coloured dish, Blasco-Zumeta *leg.*, deposited in BMNH.

PARATYPES:

3 ♂♂, data as holotype; 1 ♂, locality as holotype, 2.VI.1990, Moericke trap; 2 ♂♂, Spain, Jaén, Cazorla National Park, forest by River Guadalquivir, 15.V.1991, A. E. Stubbs *leg.*

OTHER MATERIAL:

1 ♂, Morocco, Oued y Kern, near Rabat, v.1973, H. Choumara *leg.*, MNHN; 1 ♂, Algeria, Miliana, 16-30.V.1962, J.P. leg, MNHN (Figs. 59-60 depict genitalia for comparison with Spanish specimens). 3 ♂♂, Spain, Barcelona, Vilassar de Dalt, VII and X-XI.1995, J.L. Jara *leg.* Maltese material is listed by CHANDLER & GATT (2000).

DERIVATIO NOMINIS:

The name is an adjective and refers to the Latin name of the River Ebro (Iberus) and relationship to *S. lutea*.

Mycomyinae

***Mycomya* (s. str.) *pygmalion* Väisänen, 1984**

MATERIAL from Retuerta de Pina, Monegros:

13 ♂♂, collected from December 1990 to March 1991 and December 1991 to February 1992, in coloured dishes and Malaise, Moericke, Wilkening and pitfall traps.

***Mycomya* (s. str.) *tumida* (Winnertz, 1863)**

MATERIAL from Retuerta de Pina, Monegros:

23 ♂♂ and 8 ♀♀, collected from November till May in 1990-1992, in a coloured dish, pitfall traps with vinegar, Malaise and Moericke traps.

***Mycomya* (*Mycomyopsis*) *maura* (Walker, 1856)**

MATERIAL from Retuerta de Pina, Monegros:

1 ♂, 9.IV.1991, coloured dish; 2 ♂♂, 25.III.1992 and 3 ♂♂, 4 ♀♀, 10.IV.1992, pitfall traps with vinegar; 1 ♂, 20.III.1993 and 1 ♂, 14.IV.1993, rabbit holes.

Mycetophilinae
Exechiini

***Allodia* (s. str.) sp.**

MATERIAL from Retuerta de Pina, Monegros:

1 ♀, 11.XI.1990, Moericke trap. Females of *Allodia* sensu stricto cannot be determined to species.

***Allodia* (*Brachycampta*) *pistillata* (Lundström, 1911)**

MATERIAL from Retuerta de Pina, Monegros:

1 ♂, 18.IX.1992, light trap.

***Brevicornu griseicolle* (Staeger, 1840)**

MATERIAL from Retuerta de Pina, Monegros:

1 ♂, 11.XI.1990, Moericke trap.

***Brevicornu intermedium* (Santos Abreu, 1920)**

MATERIAL from Retuerta de Pina, Monegros:

1 ♂, 20.II.1991, Moericke trap; 2 ♂♂, 9.III.1991, coloured dish.

***Cordyla crassicornis* Meigen, 1818**

MATERIAL from Retuerta de Pina, Monegros:

1 ♂, 25.IV.1991, coloured dish.

***Cordyla fusca* Meigen, 1804**

MATERIAL from Retuerta de Pina, Monegros:

1 ♂, 9.XI.1991, Moericke trap.

***Cordyla monegrensis* Chandler & Blasco-Zumeta, sp. n.**

(Figs. 61-63)

MALE:

Head black, grey dusted. Antenna brown, grey dusted, about three quarters length of thorax; flagellum 12 segmented with segments apart from apical much broader than long. Proboscis yellow, palpus dark, with antepenultimate palpomere strongly enlarged, flattened ovoid, about two thirds as long as height of eye, grey dusted.

Thorax dark, grey dusted, with a yellowish patch on the humeral angle of the mesoscutum. Mesoscutal setae short, brown, irregularly dispersed; short setae on posterior part of anepisternum, longer setae on laterotergite also brown.

Legs yellow, with all setulae dark, tibial spurs (1:2:2) and tarsi appearing darker.

Wing yellowish with veins brown. Crossvein r-m a little longer than Rs. Vein M_2 abbreviated from wing margin by more than length of r-m. Posterior fork begins a little beyond base of median fork. Haltere yellow.

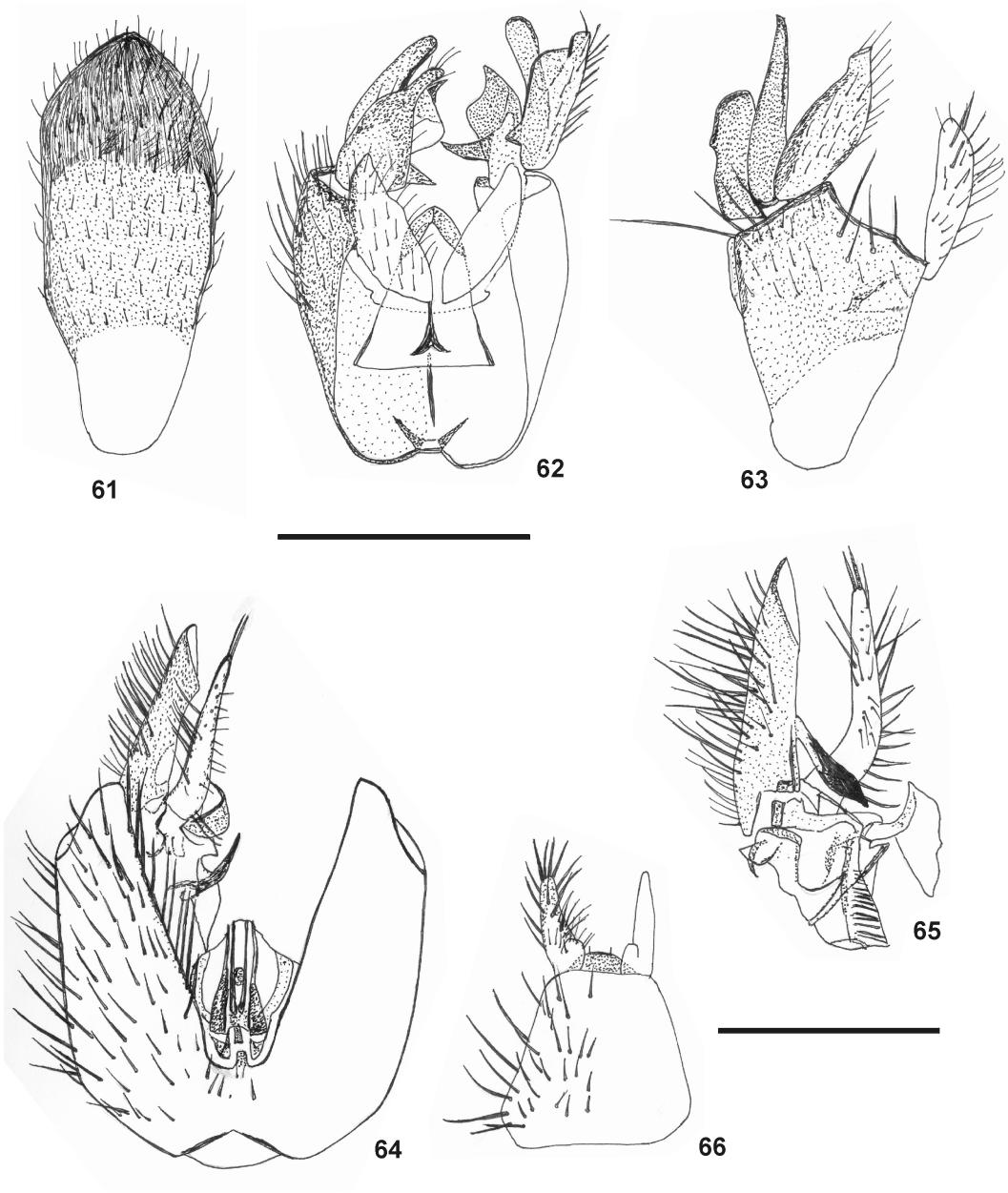
Abdomen including genitalia (Figs. 60-62) dark brown, grey dusted. The three lobes of the gonostylus (Figs. 61-62) similar to *C. brevicornis* but with dorsal stylomere a little shorter and median stylomere blunt ended rather than pointed.

Wing length 2.75 mm.

FEMALE: Not examined.

HOLOTYPE MALE:

Spain, Monegros region, Retuerta de Pina, 17.X. 1990, Moericke trap, J. Blasco-Zumeta *leg.*, deposited in BMNH.



Figures 61-63. Male genitalia of *Cordyla monegrensis* sp. n. 61. Sternite 8. 62. Dorsal view. 63. Lateral view of gonocoxites showing three lobed gonostylus and cercus. (Scale: 0.25 mm).
Figures 64-66. Male genitalia of *Pseudexechia latevittata* sp. n. 64. Ventral view of gonocoxites and left gonostylus. 65. Internal view of right gonostylus. 66. Tergite 9 and cerci. (Scale: 0.25 mm).

DERIVATIO NOMINIS:

This species is named for the Monegros region in which it was found.

DISCUSSION:

This species differs in details of the structure of its male genitalia from other *Cordyla* species, most closely resembling *brevicornis*. The latter species has a distinctly shorter antenna, only about half the length of the thorax.

***Cordyla murina* Winnertz,1863**

MATERIAL from Retuerta de Pina, Monegros:

13 ♂♂ collected in December to April, June and October, using Malaise, Moericke, Wilkening, pitfall and light traps.

DISCUSSION:

This is provisionally considered the true *murina* and has a large antepenultimate palpomere, practically as long as the height of the eye. A second species corresponding to *murina* of EDWARDS (1925) has a distinctly smaller enlarged palpomere.

***Cordyla nitidula* Edwards, 1925**

MATERIAL from Retuerta de Pina, Monegros:

1 ♂, 3.XI.1990, coloured dish set between *Rosmarinus officinalis* and *Pinus halepensis*.

***Cordyla styliforceps* (Bukowski, 1934)**

MATERIAL from Retuerta de Pina, Monegros:

A frequent species in the Monegros material, 130 ♂♂

collected in all months from October to July, obtained by all the trapping techniques used.

***Exechia fulva* Santos Abreu, 1920**

MATERIAL from Retuerta de Pina, Monegros:

This species was abundant, about 500 examples being collected from October to May by all the trapping techniques, in rabbit holes and swept from steppe grasses, *Artemisia herba-alba valentina* and *Rosmarinus officinalis*.

***Exechia fusca* (Meigen, 1804)**

MATERIAL from Retuerta de Pina, Monegros:

2 ♂♂, 2 ♀♀, 10.XI.1991, coloured dish between *Brachypodium retusum*.

***Exechia separata* Lundström, 1912**

MATERIAL from Retuerta de Pina, Monegros:

20 ♂♂, 32 ♀♀ collected from September to February and April with coloured dishes, Moericke, Wilkening, light and pitfall traps; some specimens were swept from *Juniperus thurifera*, from steppe grasses or found in a rabbit hole.

***Exechia spinuligera* Lundström, 1912**

MATERIAL from Retuerta de Pina, Monegros:

1 ♂, 24.X.1992, swept from *Rosmarinus officinalis*; 1 ♂, 5.XII.1992, on *Gypsophila struthium*.

***Exechiopsis* (s. str.) *pseudindecisa* LaŠtovka & Matile, 1974**

MATERIAL from Retuerta de Pina, Monegros:

1 ♂, 25.III.1991, coloured dish between *Brachypodium retusum* and *Juniperus*.

***Pseudexechia latevittata* Chandler & Blasco-Zumeta, sp. n.**

(Figs. 64-66, 68)

MALE:

Head brown, thinly grey dusted. Antenna elongate, more than twice as long as thorax; scape, pedicel, first flagellomere and base of second yellow, flagellum otherwise brownish; most flagellomeres about 3 x long as broad. Palpus yellow.

Thorax with mesoscutum brown on disc, forming a broad median band, narrowed a little in the presutural area, broadly yellow on sides. Apical part of scutellum and median part of mediotergite also brown. Pleura yellowish, grey dusted. Decumbent setae on mesoscutum pale; longer setae on side margins and one pair of long scutellar marginals are brown; three upturned proepisternals; long setae on laterotergite.

Legs slender, yellow with dark setulae. Setae on fore and mid legs shorter than tibial width, tibia 1 with 6-8 short anteroventrals, tibia 2 with series of short anteroventral, posteroventral and posterior setae. Hind legs missing in male holotype (see under female, which has setae on tibia 3 longer than tibial width).

Wing yellowish, especially in radial area. Vein R_5 downturned apically; r-m about 4 x long as Rs and longer than stem of median fork. Posterior fork begins well beyond base of median fork.

Abdomen brown with vague yellowish triangles on apical margins of tergites 2-4; genitalia (Figs. 64-66) yellow; gonostylus (Fig. 66) with ventral lobe narrow and bearing 2 setae apically, dorsal lobe a little broader with a blade-like internal process.

Wing length 2.9 mm.

FEMALE:

Very similar. Antenna shorter, not more than twice length of thorax. Thorax coloured as in male. Hind leg has longer setae than other legs, distinctly longer than tibial width: 5 anterodorsals, 3 posterodorsals and 6 close-set posterior setae near tip. Crossvein r-m and stem of median fork more subequal than in male. Abdominal tergites mainly dark brown, tergites 1-3 narrowly yellow laterally, all tergites vaguely yellowish on posterior corner laterally, tergite 7 more distinctly yellowish laterally, produced in middle of margin in lateral view (similar to *trivittata*). Ovipositor (Fig. 68) with cercus one segmented. Wing length 3.2 mm.

HOLOTYPE MALE:

Spain, Zaragoza, Monegros region, Retuerta de Pina, 20.XI.1991, Malaise trap, J. Blasco-Zumeta *leg.*, deposited in BMNH.

PARATYPE FEMALE:

Same locality, 20.X.1991, Moericke trap, Blasco-Zumeta *leg.*

DERIVATIO NOMINIS:

The name is an adjective and refers to the broad dark median band on the thorax, in contrast to most *Pseudexechia* species which have three well defined thoracic stripes.

DISCUSSION:

In both dorsal and ventral lobes of the gonostylus being elongate it resembles *trivittata* (Staeger) and *tristriata* (Stackelberg), but differs from them in their precise form and in the dorsal lobe bearing a blade-like internal process as in several other *Pseudexechia* species.

***Rymosia affinis* Winnertz, 1863**

MATERIAL from Retuerta de Pina, Monegros:

From the Moericke trap, 1 ♂, 20.V.1991, 1 ♂, 9.XI.1991 and 1 ♀, 20.XI.1991; 1 ♀, 26.X.1991, light trap; 1 ♂, 10.XI.1991, coloured dish; 1 ♂, 20.III.1993 and 2 ♂♂, 1 ♀, 14.IV.1993 from rabbit holes.

***Rymosia beaucournui* Matile, 1963**

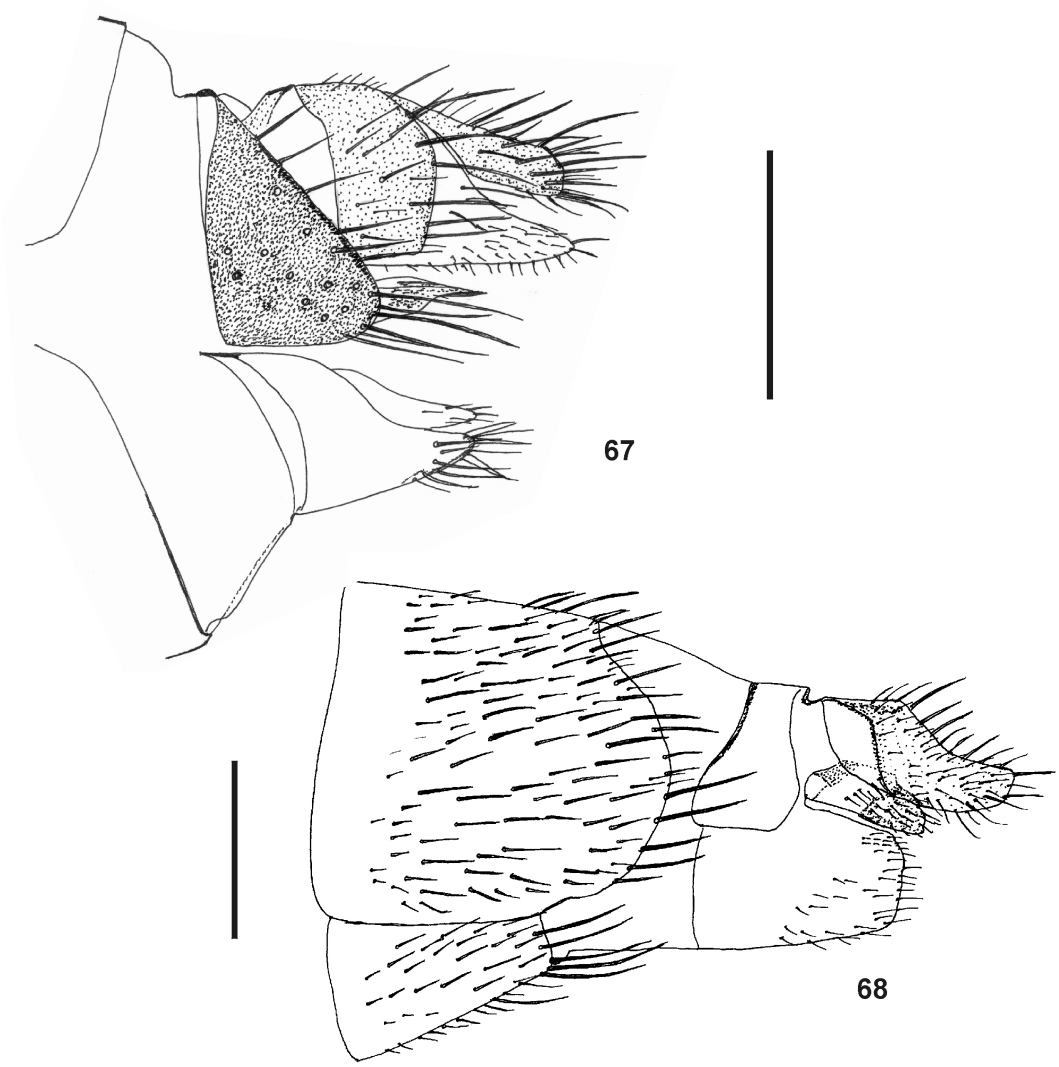
MATERIAL from Retuerta de Pina, Monegros:

1 ♂, 10.III.1993, light trap; 3 ♂♂, 14.IV.1993 and 5 ♂♂, 20.XII.1994 from rabbit holes.

***Rymosia pseudocretensis* Burghele-Balacesco, 1967**

MATERIAL from Retuerta de Pina, Monegros:

39 ♂♂ were collected from October to March and in May, with coloured dishes and with Malaise, Moericke and light traps. Some specimens were obtained from rabbit holes or swept from *Artemisia herba-alba herba-alba*.



Figures 67-68. Lateral view of ovipositors. 67. *Docosia fuerteventurae* Chandler & Ribeiro. 68. *Pseudexechia latevittata* sp. n. (Scale: 0.25 mm, *D. fuerteventurae*; 0.2 mm, *P. latevittata*).

***Tarnania dziedzickii* (Edwards, 1941)**
MATERIAL from Retuerta de Pina, Monegros:
Females from light traps, 26.X.1991, 14.II.1993 and 20.X.1993; 1 ♂, 26.X.1991, coloured dish; 1 ♂, 9.XII.1991, Moericke trap; 1 ♀, 25.I.1992, Wilkening trap in *Juniperus thurifera*.

Mycetophilini

***Mycetophila alea* Laffoon, 1965**
MATERIAL from Retuerta de Pina, Monegros:
1 ♂, 6.VII.1990, coloured dish; 1 ♀, 11.XI.1990, Moericke trap; 3 ♀♀, 18.IX.1992, light trap.

***Mycetophila britannica* LaŠtovka & Kidd, 1975**
MATERIAL from Retuerta de Pina, Monegros:
1 ♂, 9.XI.1991, Moericke trap; 1 ♀, 10.X.1993, light rap; 1 ♂, 21.XI.1992, on *Atriplex halesus*; 1 ♀, 12.XII.1992, on *Ephedra nebrodensis*.

***Mycetophila fungorum* (De Geer, 1776)**
MATERIAL from Retuerta de Pina, Monegros:
1 ♂, 18.IX.1992, light trap.

***Mycetophila ocellus* Walker, 1848**
MATERIAL from Retuerta de Pina, Monegros:
1 ♂, 1 ♀, 18.IX.1992, light trap.

***Mycetophila perpallida* Chandler, 1993**
MATERIAL from Retuerta de Pina, Monegros:
Males frequent (in 24 samples); females of the *fungorum* (De Geer) group (in 13 other samples) could not be determined as *fungorum* itself was also present. Material was collected in all months from September to May, in coloured dishes and with light, Malaise, Moericke and pitfall traps. It was also found on *Artemisia herba-alba*.

***Mycetophila pictula* Meigen, 1830**
MATERIAL from Retuerta de Pina, Monegros:
1 ♂, 11.XI.1990, Moericke trap; 1 ♀, 23.XI.1990, Malaise trap.

***Mycetophila signatoides* Dziedzicki, 1884**
[= *assimilis* (Matile, 1967)]
MATERIAL from Retuerta de Pina, Monegros:
1 ♂, 11.XI.1990, Moericke trap.

DISCUSSION:

This species was figured by ZAITZEV (1999) as *assimilis* Matile and he identified another species as *signatoides* Dziedzicki. However, it is considered that the name *signatoides* applies correctly to *M. assimilis*.

***Mycetophila sordida* van der Wulp, 1874**

MATERIAL from Retuerta de Pina, Monegros:

1 ♀, 11.XI.1990, 1 ♀, 23.XI.1990 and 1 ♀, 9.III.1991, Malaise trap; 1 ♀, 14.x.1992, swept from *Artemisia herba-alba valentina*.

***Platurocypta punctum* (Stannius, 1831)**

MATERIAL from Retuerta de Pina, Monegros:

1 ♂, 18.IX.1992, light trap.

DISCUSSION:

This species varies in the colour of the coxae, which may be mainly yellow or entirely dark. The Monegros specimen has yellow coxae. Although this genus was not recorded from the Atlantic islands by CHANDLER & RIBEIRO (1995), several specimens (all with yellow coxae) have been examined in recent material from Madeira.

***Trichonta icenica* Edwards, 1925**

MATERIAL from Retuerta de Pina, Monegros:

1 ♀, 11.XI.1990, Moericke trap; 1 ♂, 9.II.1991 and 1 ♂, 7.V.1991, coloured dishes; 1 ♂, 20.X.1991, coloured dish; 1 ♂, 9.XI.1991, Moericke trap; 1 ♂, 25.I.1992, Wilkening trap in *Juniperus thurifera*.

***Zygomyia humeralis* (Wiedemann, 1817)**

MATERIAL from Retuerta de Pina, Monegros:

1 ♂, 11.XI.1990, Moericke trap; 1 ♂, 7.V.1991, coloured dish between *Pinus halepensis* and *Rosmarinus officinalis.*

***Zygomyia notata* (Stannius, 1831)**

MATERIAL from Retuerta de Pina, Monegros:

1 ♂, 9.III.1991, coloured dish.

***Zygomyia pseudohumeralis* Caspers, 1980**

MATERIAL from Retuerta de Pina, Monegros:

1 ♂, 20.XI.1992 on *Salsola versiculata*.

***Zygomyia valida* Winnertz, 1863**

MATERIAL from Retuerta de Pina, Monegros:

1 ♂, 14.XII.1990, Malaise trap; 1 ♀, 9.XI.1990 and 1 ♂, 18.IX.1992, light traps; 2 ♂♂, 14.X.1992, swept from *Artemisia herba-alba valentina*.

ACKNOWLEDGEMENTS

We thank the late Loïc Matile for enabling us to include the description of *Macrorrhyncha gallica* and other relevant material from the Paris collections in this paper. We are also indebted to Gerhard Bächli, Bernhard Merz and Jean-Paul Haenni for the opportunity to include Swiss material where relevant.

SUMARIO

El presente trabajo proporciona una lista de 53 especies de "mosquitos de las setas" (1 Bolitophilidae; 4 Keroplatidae y 48 Mycetophilidae) colectados en la comarca de Los Monegros (Pina de Ebro, Zaragoza, España) y asociados a un bosque de *Juniperus thurifera* L. sobre suelo yesoso. Los ejemplares fueron colectados con diferentes sistemas de trampeo como trampa Moericke, platos de colores, trampas Malaise, trampas de caída cebadas con cerveza, vinagre o carroña, trampas luminosas, trampas Wilkening, barrido en vegetación y trampas en madrigueras de conejo silvestre.

El número de especies de estas familias colectadas en España es de aproximadamente 200, un número extremadamente bajo comparado con las listas de otros países europeos (452 en las Islas Británicas, 440 en Suiza, 380 en Francia), lo que da idea del incompleto conocimiento del grupo en la Península Ibérica.

De las 53 especies ya descritas citadas para Los Monegros, sobre un cuarto son nuevas para España y seis (*Macrorrhyncha gallica*, *Pyratula ebroensis*, *Boletina augusta*, *Sciophila iberolutea*, *Cordyla monegrensis*, *Pseudexechia latevittata*) se describen por primera vez. La corología del grupo muestra que 35 especies (probablemetne tres más) están ampliamente distribuidas por Europa, 11 especies tienen una distribución mediterránea, una especie (*Docosia fuerteventurae*) se conocía sólo de las Islas Canarias y tres especies (*Pyratula ebroensis*, *Boletina augusta* y *Sciophila iberolutea*) se conocen sólo, hasta donde sabemos, de Los Monegros.

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