On some Stratiomyidae, Rhagionidae, Tabanidae, Acroceridae, Therevidae, and Nemestrinidae from Southern Spain (Diptera), with description of a new species.

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The paper is based on a material from southern Spain, collected partly in July-August 1960 by Dr. J. R. Vockeroth, partly in March-May 1966 by the author and his assistents and by Dr. W. Hackman. Most of the 1960 material is kept in the Canadian National Collection, Ottawa, with duplicates in the Zoological Museum, Copenhagen. The 1966 material is in the Zoological Museum, Copenhagen, and those specimens collected by W. Hackman are at present in the Zoological Museum, Helsinki.

A total of 18 species is recorded. One of these, *Oxycera hispanica* n. sp., is new to science, and is described. The systematic position of *Thereva xestomyzina* Strobl is discussed. One species of *Hybomitra* and three species of *Thereva* are new to the Spanish list.

The author is grateful to Dr. M. Leclercq, Beyne-Heusay, Belgium, for identification of some of the Tabanidae, and for information on their distribution.

STRATIOMYIDAE

Stratiomys (Hirtea) longicornis Scopoli, 1763.

Material. — GRANADA: Rio Guadalfeo, Orgiva, 300 m, 1 ♀, 3 April 1966.

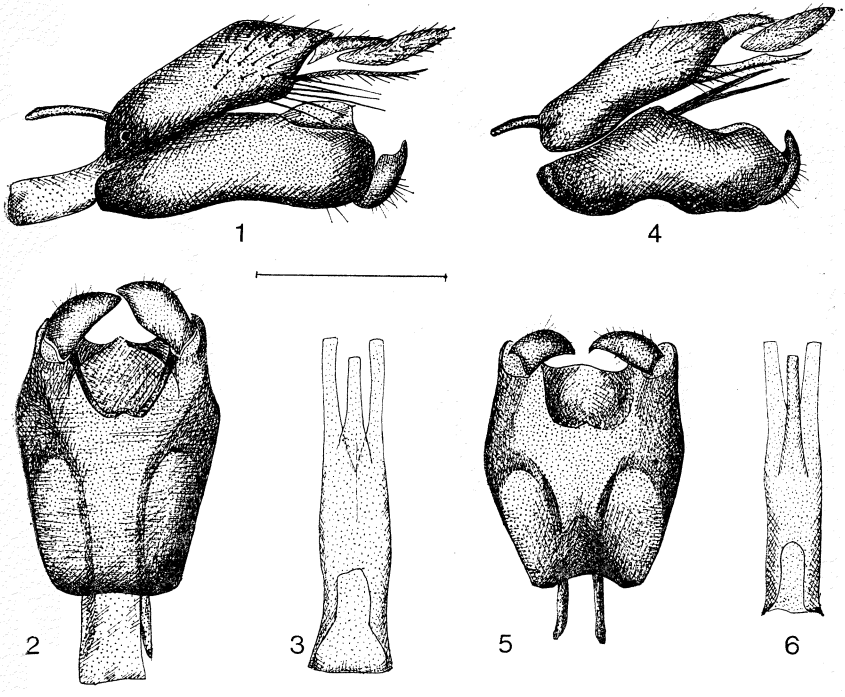
Distribution. — Palaearctic Region from western Europe to Japan, and from southern Scandinavia to North Africa. Earlier recorded from Spain by Strobl (1906:276), Czerny & Strobl (1909: 142).

Oxycera hispanica n. sp. Figs. 4—6

Material. — GRANADA: Sierra Nevada Highway, 1650 m, 1 ♂ holotype, 1 ♂ 3 ♀ paratypes, 27 July 1960 (J. R. Vockeroth). Holotype and two female paratypes in Canadian National Collection, Ottawa. Two paratypes (♂ + ♀) in Zoological Museum, Copenhagen.

Description. Holotype, male. — Head. Entirely blackish, the frontal triangle and a narrow margin along ventral margin of eye silvery-white dusted. Pubescence whitish. Proboscis yellowish. Antennae blackish. Upper part of eye with enlarged ocelli with sharp limit to the smaller facets on lower part.

Thorax. Mesonotum black with comparatively long, whitish pubescence. A narrow, yellowish-white notopleural seam, and postalar calli indistinctly brownish. Scutellum predominantly yellowish-white, only basal third black.



Figs. 1—3. Male terminalia of *Oxycera marginata* Lw., lectotype from Sicily. Figs. 4—6. Male terminalia of *O. hispanica* n. sp., holotype. Figs. 1 and 4, lateral view of terminalia; Figs. 2 and 5, ventral view of the terminalia; Figs. 3 and 6, aedeagus in dorsal view. Scale 0.25 mm.

Wings greyish-hyaline with fore margin more yellowish. Knob of halteres yellowish-white.

Legs. f_1 and f_2 yellowish. f_3 yellowish with a blackish-brown ring occupying basal two-thirds of apical half. t_1 and t_2 yellowish with middle parts blackish-brown darkened, but not forming sharply contrasting rings. t_3 extensively blackish, only paler at base and tip. Fore tarsi blackish. Middle and hind tarsi with first two joints yellowish, rest blackish.

Abdomen black with very narrow, yellowish margin on hind half, and a triangular yellowish-white apical spot. Terminalia. See Figs. 4—6.

Length. Total: 5.2 mm.

The male paratype has lost its head. It agrees well with the above description, but the t_1 is somewhat darker.

Female.

Head. Frontal stripe occupies less than half width of head (index 65:145), with nearly parallel borders. Face and frontal stripe with a blackish middle stripe. On lateral parts of face a broad yellowish-white band which continues on lateral parts of frontal stripe nearly to level of anterior ocellus. At level of one third of length of frontal stripe (measured from antennal bases to anterior ocellus) these bands diverge from eye margins. The broad occipital margin has a pair of yellowish-white spots dorsally, and also the ventral two-thirds are yellowish-white. Proboscis yellowish. Antennae yellowish-brown, becoming darker towards tips. Pubescence of head short and whitish.

Thorax. Mesonotum blackish with two broad, yellowish-white bands. A broad notopleural seam, and also parts of pleura yellowish-white. Scutellum more yellowish-white than in male, only basal fourth black. Pubescence short and whitish.

Wings and legs as in male.

Abdomen. As in male but yellowish-white, marginal band much broader and starting on tergite 2.

Length. 4.6 — 5.2 mm.

Remarks. — *O. hispanica* n. sp. will be identified as *O. marginata* Loew, 1859, after the key in Lindner (1938). This species is at present only known in the type-specimens (♂ + ♀) from Sicily. These were kindly sent for comparison by Dr. H. Schumann, Berlin. It is evident that *marginata* and *hispanica* are closely related species (sister-species). Dr. Erwin Lindner, who

also examined the two species, came to the conclusion (*in litt.* 5 Oct. 1967) that they possibly should be treated as subspecies. However, dissection of the male terminalia of both showed such large differences that it seems justifiable to treat them as two species. Figs. 1—3 show the male terminalia of the male syntype of *O. marginata* Loew, which I hereby designate as lectotype. Figs. 4—6 are of the holotype of *O. hispanica* n. sp. The most distinct difference lies in the shape of the ventral portion of the terminalia (Figs. 2 and 5), and especially in the aedeagus (Figs. 3 and 6). This is much longer in *marginata* than in *hispanica,* its basal part becoming visible in an external view in *marginata* but not in *hispanica.* There are also a few differences in other characters, as summarized in the following:

♂. Frontal triangle not dusted. No sharp limit between larger and smaller facets. Mesonotum with blackish-brown pubescence. Scutellum more black than yellow. Legs extensively dark brownish, only femora and tibiae slightly paler at base and tip.

♀. Yellowish-white bands on frontal stripe narrowly separated from facial bands. All legs, also metatarsi of p_2 and p_3, distinctly darkened (though much paler than in male) ..... *marginata* Lw.

♂. Frontal triangle whitish dusted. A sharp limit between larger and smaller facets. Mesonotum with whitish pubescence. Scutellum more yellow than black. Only f_3 and t_3 extensively darkened; other legs prodominantly yellowish.

♀. Yellowish-white bands on frontal stripe confluent with facial bands. At least f_1, f_2, and metatarsi of p_2 and p_2 exclusively yellowish ..... *hispanica* n. sp.

Nemotelus pantherinus Linné, 1761.

Material. — GRANADA: Maitena, 900 m, 1 ♀, 11 July 1960 (J. R. Vockeroth).

Distribution. — Europe, North Africa, Asia (Siberia). Recorded from Spain by Encobet (1912:136).

RHAGIONIDAE

Rhagio lineola andalusiaca Strobl, 1909.

Material. — GRANADA: Sierra de Contraviesa near Rabite, 1300 m, 1 ♀, 2 May 1966; Rio Lanjaron near Lanjaron, 600 m, 3 ♂ 3 ♀, 26—28 April 1966.

Distribution. — The subspecies is only known from southern

Spain. The nominate form is widely distributed in central and northern Europe.

Remarks. — The subspecies was originally described on the basis of three males from Algeciras. Strobl (in Czerny & Strobl 1909: 167) described the thorax and coxae as blackish. The males from Lanjaron have a thorax not darker than in Danish *lineola,* and the coxae vary from completely greyish-black to nearly all yellowish. The abdomen is completely yellowish with the exception of sternites 6—8, which are blackish. In the terminalia there are no real differences between Spanish and Danish specimens. The females show the same variation in colour of the coxae as the males, and can be separated from females of *lineola lineola* by the presence of only narrow blackish basal bands on the tergites. Also the legs are paler than in the nominate form; they nearly lack darker rings on apical parts of f_1 and f_3.

Chrysopilus splendidus Meigen, 1820.

Material. — GRANADA: Rio Guadalfeo, Orgiva, 300 m, 2 ♂, 19 April and 3 May 1966.

Distribution. — Southern and central Europe, towards the north to the Leningrad region and Bornholm. Earlier recorded from Spain by Strobl (1906:304).

Remarks. — The terminalia of one of the Spanish specimens are similar to those figured by Rozkosny & Spitzer (1965, fig. 66) for a Czechoslovakian specimen.

TABANIDAE

Dasyrhamphis ater Rossi, 1790.

Material. — GRANADA: Barranco de Miranda 8 km SW Orgiva, 300 m, 2 ♂ 1 ♀, 20—23 April 1966; Rio Guadalfeo, Orgiva, 300 m, 1 ♂, 19 April 1966; Sierra de Contraviesa near Rabite, 1300 m, 18 ♀, 2 May 1966; Sierra Nevada near Padul, 1200 m, 3 ♀, 4 May 1966. — MALAGA: Torremolinos, 0—50 m, 6 ♂, 3 May 1966.

Distribution. — Morocco, Algeria, Spain, France, Italy, Greece, Albania, Yugoslavia, Switzerland, western Turkey, Corsica, Sardinia.

Tabanus cordiger Meigen, 1820.

Material. — GRANADA: Barranco de Miranda 8 km SW Orgiva, 300 m, 6 ♀, 20 April-5 May 1966; Rio Guadalfeo, Orgiva, 300 m,

1 ♀, 5 April 1966; Rambla de Aculas 10 km E Orgiva, 400 m, 1 ♀, 27 April 1966; Rio Lanjaron near Lanjaron, 600 m, 1 ♀, 26 April 1966.

Distribution. — Europe from Fennoscandia and southern England to the Mediterranean subregion, and especially very common in the countries around the western part of the Mediterranean Sea. Also in many parts of Asia, eastwards to northeastern China and Korea.

Hybomitra tropica Linné, 1758.

Material. — GRANADA: N. slope Veleta, Sierra Nevada, 2400 m, 1 ♀, 25 July 1960 (J. R. Vockeroth).

Distribution. — Denmark, Czechoslovakia, Austria, Yugoslavia, France, Belgium, Japan. New to Spain.

Haematopota hispanica Szilady, 1923.

Material. — GRANADA: Barranco de Miranda 8 km SW Orgiva, 300 m, 1 ♀, 5 May 1966; Rio Guadalfeo, Orgiva, 300 m, 1 ♀, 18 April 1966; N. slope Veleta, Sierra Nevada, 1 ♀, 30 July 1960 (J. R. Vockeroth).

Distribution. — Central and southern Europe, Morocco, Iran, Caucasus area, Kazachstan, western Siberia.

ACROCERIDAE

Opsebius inflatus Loew, 1871.

Material. — GRANADA: N. slope Veleta, Sierra Nevada, 2400 m, 2 ♂, 25 July 1960 (J. R. Vockeroth).

Distribution. — Southern France, Spain.

THEREVIDAE

Apioeicoceras costalis Wiedemann, 1824.

Material. — ALMERIA: Albufera, 0—50 m, 1 ♀, 14 April 1966; Cabo de Gata, 0—50 m, 20 ♂ 10 ♀, 24—31 March (also W. Hackman). — GRANADA: Torrenueva E Motril, 0—50 m, 1 ♀, 14 April 1966. — CADIZ: La Linea, 3 ♂, 2 August 1960 (J. R. Vockeroth).

Distribution. — Morocco, Spain (Czerny & Strobl, 1909: 167).

Remarks. — The species occurred commonly on stony ground with very sparse vegetation in the desert-like dune areas northwest of Cabo de Gata (the village). See also discussion under the following species.

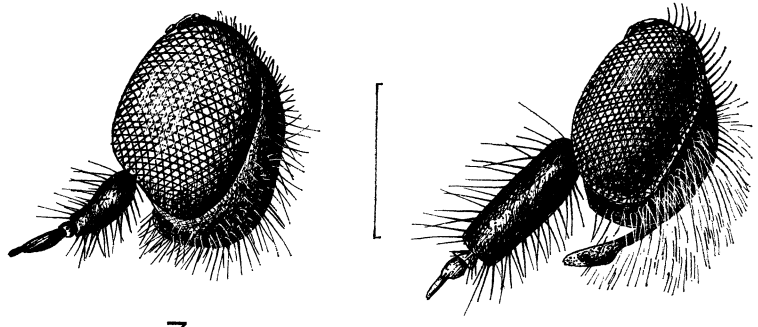
Apioeicoceras xestomyzina Strobl, 1909 (New comb.).

Material. — ALMERIA: Tabernas 5 km N, 200—500 m, 1 ♂, 12 April 1966 (W. Hackman). — GRANADA: Torrenueva E Motril, 0—50 m, 1 ♂, 12 April 1966; Barranco de Miranda 8 km SW Orgiva, 300 m, 10 ♂ 5 ♀, 16 April — 5 May 1966.

Distribution. — Hitherto only known from Spain (Alicante = Terra typica).

Remarks. — The species was described by Strobl (in Czerny and Strobl, 1909:168) as a *Thereva,* though he mentions the close resemblance to *Xestomyza costalis* Wiedemann, 1824, for which Becker (1912: 302) erected the genus *Apioeicoceras.* Also Kröber (1925: 54) treated *xestomyzina* as a *Thereva.* In fact, the here proposed correlation of *xestomyzina* and *costalis* breaks down the suprageneric groups of Becker (l.c.) and Kröber (l.c.). Both authors operate with a *Xestomyza*-group including genera with strongly projecting face, a long and strongly thickened first antennal joint, and often elongated proboscis and palpi. Some preliminary studies of both Palaearctic and Ethiopian *Therevidae* has led the present author to the conclusion that use of adaptive characters in antennae and mouthparts gives no good basis for a phylogenetic system in Therevidae. These studies seem to show that use of characters such as presence or absence of ad and/or pd setae to t_1, number of scutellar setae, certain wing structures, and structures of the terminalia will result in a more natural system.

The two species, *costalis* Wied. and *xestomyzina* Strobl, can at



Figs. 7—8. Heads in lateral view of males of 7. *Apioeicoceras xestomyzina* Strobl, and 8. *A. costalis* Wied. Scale 1 mm.

once be separated by the very different antennae (Figs. 7—8). Moreover, *xestomyzina* has black legs, while in *costalis* the tibiae and tarsi are yellowish. There are several others characters which distinguish the two species. Further details will follow in a planned revision of the Mediterranean Therevidae.

The species occurred in the bottom of the ravine of "Barranco de Miranda", sitting on the small patches of sand and gravel between bigger stones and shrub.

Thereva annulata Fabricius, 1805.

Material. — GRANADA: Barranco de Miranda 8 km SW Orgiva (river banks at Rio Guadalfeo), 300 m, 1 ♀, 23 April 1966.

Distribution. — Europe from northern Fennoscandia to Spain, Italy, Greece. Also Asia Minor and North Africa. Encobet (1912: 71) gives a record from Bilbao.

Thereva cinifera Meigen, 1830
(*subfasciata* Schummel, 1838)

Material. — GRANADA: Rio Guadalfeo, Orgiva, 300 m, 1 ♀, 18 April 1966.

Distribution. — Central and southern Europe including southernmost parts of Fennoscandia. Siberia. Not previously recorded from Spain.

Thereva spiloptera Wiedemann, 1824
(*poeciloptera* Loew, 1847)

Material. — ALMERIA: Almeria, 0—50 m, 1 ♂, 6 March 1966; 19 ♂ 3 ♀, 1—14 April 1966 (also W. Hackman); Albufera, 0—50 m, 2 ♂ 1 ♀, 23—29 March 1966; Cabo de Gata, 0—50 m, 3 ♂, 26 March 1966. — GRANADA: Torrenueva E of Motril, 0—50 m, 4 ♂, 14—17 April 1966.

Distribution. — Southern Europe and North Africa. Recorded from Spain by Czerny & Strobl (1909:169).

Remarks. — Common in shrub on plains and hills near the coast.

Thereva vulpina Kröber, 1912.

Material. — ALMERIA: El Alquian, 0—50 m, 1 ♀, 3 March 1966; Alhama, 200—500 m, 2 ♂, 22 March 1966 (W. Hackman). — GRANADA: Torrenueva E of Motril, 0—50 m, 6 ♂ 2 ♀, 12—14 April 1966, Barranco de Algarrobo, 300 m, 1 ♀, 25 April 1966; Sierra Nevada near Padul, 1200 m, 1 ♀, 8 April 1966.

Distribution. — Probably only southern and central Europe.

Remarks. — After examining Kröber's material of *Thereva neglecta* Kröber, 1912, from the museums in Berlin and Vienna, the present author is convinced that Kröber has confused males and females of two different species in *neglecta*. Kröber (1912:407) described *neglecta* on females from Germany, Austria, Hungary, Italy, Crete, Sardinia and Turkestan, and on males from Turkestan only. The females of European origin are conspecific with the Spanish specimens as recorded above. Females from Turkestan were not present in the material seen. In Zoological Museum, Berlin, are three males of *neglecta,* one labelled "Type", the others "Cotype". The first one is selected as lectotype to *neglecta* Kröb. and has been labelled accordingly. It bears a locality label of "Iskanderj" in Russian letters. The European females of Kröber's *neglecta* have been found to represent the hitherto unknown female of *Thereva vulpina* Kröber, 1912, which was described on male specimens alone, originating from Austria, Hungary and Germany. *T. vulpina* Kröb. is represented in the Vienna museum by a good series of specimens some of which were labelled "Cotype". It is possible that *Thereva niveifacies* Kröber, 1912, represents the right female to *neglecta* Kröb.

T. vulpina is very closely related to *bipunctata* Meigen, 1820, and is in fact only to be separated by its larger size and more distinct blackish bands on the abdomen. The male terminalia are also very similar in the two species. *T. bipunctata* Meig. of Strobl (1906:305) and Czerny & Strobl (1909: 169) is *vulpina* Kröb. as has been demonstrated by examination of material received from Strobl's collection through Dr. G. Morge, Eberswalde.

Thereva sp.

Material. — GRANADA: Sierra de Contraviesa near Rabite, 1300 m, 2 ♂, 2 May 1966.

Remarks. — The species shows affinity to *tristis* Lw., *graeca* Kröb., *tuberculata* Lw., *spinulosa* Lw. and others, but the true specific status cannot be established at the moment.

NEMESTRINIDAE

Nemestrellus nigrovillosus Lichtwardt, 1909.

Material. — ALMERIA: Almeria, Alcazaba, 0—50 m, 3 ♂ 1 ♀, 18 April 1966 (W. Hackman).

Distribution. — Spain, North Africa.

Summary

The paper brings records of three species of Stratiomyidae (incl. *Oxycera hispanica* n. sp.), two species of Rhagionidae, four species of Tabanidae (incl. *Hybomitra tropica* Linné, new to Spain), one species of Acroceridae, seven species of Therevidae (incl. *Apioeicoceras xestomyzina* Strobl, new comb., and three species of *Thereva* new to Spain), and one species of Nemestrinidae.

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