

Contribution to the knowledge of Spanish *Psychodidae* (Diptera) with description of two new species

Contribución al conocimiento de los *Psychodidae* españoles (Diptera) con descripción de dos nuevas especies

RÜDIGER WAGNER

Limnologische Fluss-Station des Max-Planck Instituts für Limnologie, P.O. Box 260, D-36105 Schlitz, Germany.

Recibido el 7 de marzo de 2001. Aceptado el 21 de mayo de 2001.

ISSN: 1130-4251 (2001), vol. 12, 83-90.

Key words: Diptera, *Psychodidae*, species list, new species, new name, Spain.

Palabras clave: Diptera, *Psychodidae*, lista de especies, especies nuevas, nombre nuevo, España.

SUMMARY

Twelve moth-fly species (*Psychodidae*) have been collected in different areas of Spain. The material contains two species new to science, *Trichomyia carlestolrai* sp. n. and *Vaillantodes andalusiacus* sp. n. A new name, *Vaillantodes*, is proposed for *Vaillantia* Wagner, which is pre-occupied by *Vaillantia* Jordan, 1878 in fish.

RESUMEN

Se han capturado 12 especies de psicódidos (*Psychodidae*) en varias partes de España. El material incluye dos especies nuevas para la ciencia, *Trichomyia carlestolrai* sp. n. y *Vaillantodes andalusiacus* sp. n. Se propone un nuevo nombre, *Vaillantodes*, para *Vaillantia* Wagner, pues estaba ya utilizado por *Vaillantia* Jordan, 1878 en peces.

INTRODUCTION

Data on moth-flies (*Psychodidae*) from Spain are rare, with the exception of the subfamily *Phlebotominae*. Most information on non-biting Iberian

Psychodidae to date is based on occasional collections of entomologists in Spain and in the French Pyrenees (e.g. Sarà, 1954; Vaillant, 1958a, b, 1967; Wagner, 1978, 1979). Information on that dipteran family outside the Pyrenees is even more limited, so that a large number of species, and even species new to science will presumably be found. Thus, the knowledge on the distribution and even the species-pool of *Psychodidae* on the Iberian Peninsula remains fragmentary. Even small collections will probably contain new records for the Iberian Peninsula, or even species new to science. Almost no information on *Psychodidae* is available from continental Portugal.

MATERIAL AND METHODS

The material was collected in different localities by diverse collectors:

- 1) Material collected by Joan Lluís Jara with Malaise trap placed in Vilassar de Dalt (Barcelona) during 1995. The samples were taken every second week (with odd numbers).
- 2) Material collected by Camilo Torras in Caldes de Montbui (Barcelona) with a light trap.
- 3) Material collected by Manuel Baena in Mojácar (Almería) with a light trap.
- 4) Material collected by Miguel Carles-Tolrà in three localities of the province of Barcelona: Barcelona, Cabrils and Santa Susanna. All the specimens from Barcelona were collected inside human habitats (house, school, window, bathroom), whereas that from Cabrils are from inside a house (window, bathroom) and from an outdoor lamp. The specimens from Santa Susanna were collected on a stream on plants in a shading site.
- 5) Sierra de la Gallina, Andalucía, Cádiz, in an area with springs.

For a proper determination of many moth-flies the close examination of the male genitalia is necessary. The method is as follows: wings are cut from the body and transferred in acetic acid (96%), the body is macerated in hot 10% KOH for a few minutes, and then also transferred into acetic acid (96%). The translucent body and wings are transferred in a mixture (1:1) of acetic acid-clove oil, then in pure clove oil. Slides are prepared with head, wings, thorax and abdomen in Canada balsam under separate cover-slips. Distinctive parts of the body (head, genitalia) then can be inspected under higher magnification. Figures were prepared with a drawing mirror on a LEITZ Dialux EB 20 microscope (45-600x magnification).

RESULTS

In general, only locality's names were available. However, in the case of Barcelona and Cabrils, concrete collecting sites are indicated. In the case of light-traps no biotopes are given, because animals are attracted from greater distance and from other biotopes.

SUBFAMILY *TRICHOMYIINAE*

Trichomyia carlestolrai n. sp. (Figs 1-7)

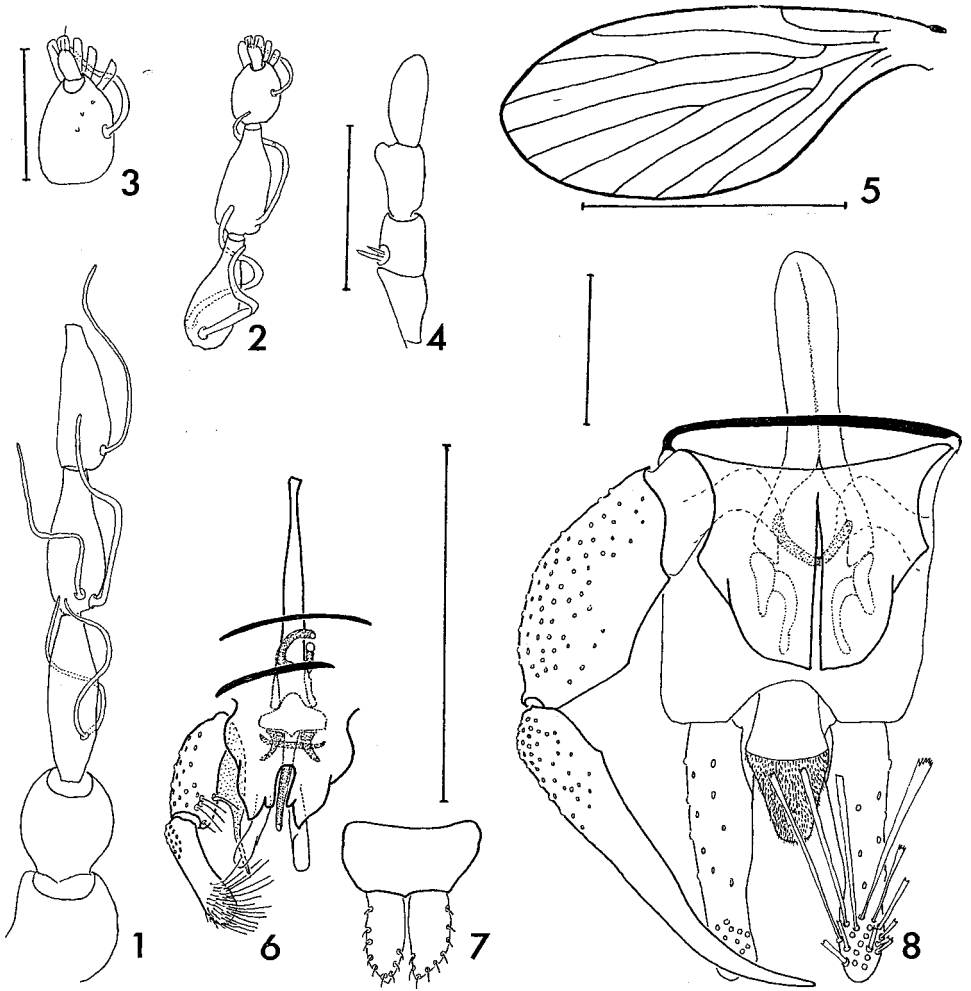
Type material: Holotype ♂, SPAIN, Barcelona, Cabrils, outdoor lamp, 13.8.1998, M. Carles-Tolrà leg. Paratype: 1♀, SPAIN, Barcelona, Cabrils, outdoor lamp, 1.7.1998, M. Carles-Tolrà leg.

Description: head with round eyes, no eyes-bridge, as typical of the subfamily. Antenna with 15 segments. Scape short barrel-shaped, pedicel spherical, as long as scape. Flagellomeres bottle-shaped with a pair of elongate simple ascoids, the tips reach the middle of the next segment (Fig. 1, 2). Relative length of antennal segment: 23-23-35-30-30-35-30-30-30-28-24-23-23-16. The distal segment seems to have only a single ascoid, a small apiculus, and 5 flat setae near the apiculus (Fig. 3). Palpus 4-segmented, basal segments connate. Second segment with a circular depression and sensorial rods (Fig. 4). Relative length of the palpus segments: 15-12-15-19.

Wing venation as typical of the genus, with only single vein (r_{4+5}) between the forks r_2/r_3 and m_1/m_2 (Fig. 5). Anal vein very short. Wing length 1.7 mm.

Abdomen with tergites 7 and 8 strongly reduced. Genitalia with almost straight basistyles, two times longer than wide, with a dorsal triangular prolongation ending in a long thin tip (Fig. 6). Dististyle almost straight, cylindrical, distally with a brush of 35-40 short to elongate hairs. Between the basistyles lies a ventral plate, broad at its base ending in a pair of apical tips each with a median, blunt subapical extension, the median incision U-shaped. Aedeagus is a thin elongate pipe, basally connected to the aedeagus apodeme, which is held at vertical position. Between the aedeagus and its apodeme lies a pair of slightly bent triangular sclerites, and an elongate transverse sclerite. At the caudal end of the aedeagus apodeme a pair of ducti ejaculatorii opens into the distal part of the aedeagus. 9th tergite rectangular. Cerci in a horizontal plane, setose (Fig. 7).

Female of similar size and coloration than male. Cerci almost circular.



Figs. 1-7.—*Trichomyia carlestolrai* sp. n.: 1) basal antennal segments, 2) terminal antennal segments, 3) antennal segment 15, 4) palpus, 5) wing, 6) tergites VII and VIII, aedeagus and styles in ventral view, 7) 10th tergite and cerci in dorsal view (Scales: Figs. 1, 2, 4 = 0.1mm; Fig. 3 = 0.05 mm; Fig. 5 = 1mm; Figs. 6, 7 = 0.1 mm). Fig. 8.—*Vaillantodes andalusiacus* sp. n.: genitalia in ventral view (Scale = 0.1mm).

Fig. 1-7.—*Trichomyia carlestolrai* sp. n.: 1) artejos basales de la antena, 2) artejos terminales de la antena, 3) artejo 15 de la antena, 4) palpo, 5) ala, 6) terguitos VII y VIII, edeago y estilos en vista ventral, 7) 10º. terguito y cerco en vista dorsal (Escala: Figs. 1, 2, 4 = 0,1mm; Fig. 3 = 0,05 mm; Fig. 5 = 1mm; Figs. 6, 7 = 0,1 mm). Fig. 8.—*Vaillantodes andalusiacus* sp. n.: genitalia en vista ventral. Escala = 0,1 mm.

Derivatio nominis: dedicated to the collector Dr. Miguel Carles-Tolra, Barcelona.

Relations: this is the first record of *Trichomyia* in Spain. Four additional European species of *Trichomyia* (Haliday, 1839) have been described so far: *Trichomyia kostovi* Jezek (Bulgaria), *T. urbica* Haliday (widespread in Europe), *T. parvula* Szabó (Hungaria, Germany) and *T. malickyi* Wagner (Greece: Islands of Kefallinia and Euböa) (Wagner, 1982, Ježek, 1990). Concerning the structure of the genitalia, the new species is a close relative of *T. malickyi* from Greece. Both species share basistyles with an inner prolongation originating from the dorsal surface, blunt dististyles, and between the basistyles lies a well sclerotized ventral plate with pointed tips and a median incision. Both species are easily distinguished by the shape of the ventral plate, and two tips on each side in the new species, but only one in *T. malickyi*. Another species pair are *T. kostovi* and *T. urbica*, a relative of *T. parvula* is still unknown.

SUBFAMILY *PSYCHODINAE*

The genus *Vaillantia* (Diptera, *Psychodidae*) was nominated by Wagner (1988), type-species: *V. margaretae* Wagner (original designation) (Canary Islands); other species included was *V. fraudulentata* (Eaton) (North Africa). Additional species are, *V. malickyi* Wagner (Corse), *V. miksici* (Krek) (Bosnia and Hercegovina), *V. alpina* Wagner (Alps), and *V. cretica* Wagner, that were incorporated into the genus by Wagner (1993).

In the meantime the author was informed that the generic name was preoccupied by *Vaillantia* Jordan, 1878, in pisces. Thus, I propose to replace the above generic name by *Vaillantodes* Wagner (gender male). Type-species and species included remain as above. In the meantime an additional species was discovered in southern Spain (Andalucía), which is described here.

Vaillantodes andalusiacus n. sp. (Fig. 8)

Type material: Holotype ♂, SPAIN, Andalucía, Cádiz, Sierra de la Gallina, area with springs, NE Puerto de Galiz, 460 msl, 3.4.1994, Gerecke *et al.* leg.

Description: head with reniform eyes. Eye-bridge with four rows of facets, the distance between the eyes equals 2 facet diameters. Only three antennal segments presents. Scape short barrel-shaped, pedicel spherical, as

long as scape. Flagellomeres elongate, bottle-shaped without remainders of ascoids. Relative size of antennal segment: 33-23-60, distal segments and palpus missing.

Wing venation typical of the genus, forks r_2/r_3 and m_1/m_2 in basal half of the wing. Wing length 2.3 mm.

Genitalia (Fig. 8): basistyles cylindrical, almost straight, two times as long as the greatest diameter. Dististyles longer than basistyles, 4.5 times longer than wide, with the distal part slightly bent. 9th tergite as wide as long, cercopodia slightly longer than tergite 9, distally with about 20 tenacula, 10th tergite conical and setose. Sternal band thin. Poststernal plate as long as wide with a deep and narrow median V-shaped incision that divides the posterosternal plate into almost two parts; tips of plate blunt. Aedeagus apodeme compact and Y-shaped. Subapically the apodeme is linked by a U-shaped sclerite to the bridge of dorsal apodemes of the basistyles. Distally it is linked to a pair of movable sickle-shaped, strongly bent lateral sclerites.

Female unknown.

The species is dedicated to Andalucía, the fascinating southern region of Spain.

Relations: Within the genus two species groups can be distinguished, one without a deep incision in the posterosternal plate, and another with a deep incision. The latter group contains *V. malickyi* (Wagner), *V. miksici* (Krek) and *V. andalusiacus* n. sp. The distal end of the posterosternal plate has two sharp tips in *V. miksici* (Krek), and even longer and thinner tips in *V. malickyi* (Wagner). The new species as well has a deep incision, but the distal ends of the posterosternal plate are blunt. Furthermore, the sickle-shaped appendages are less strongly bent and point distally, not laterally.

— *Clogmia albipunctata* (Williston, 1893). Barcelona: washroom, 1♀, 14.5.1998; 2♀♀, 1.7.1998; 1♀, 14.9.1999. Cabrils: school's washroom, 1♀, 17.8.1998; inside house, 1♂, 30.8.1998; exterior lamp, 1♂, 6.9.1998; inside house, 1♀, 28.8.1999; inside house, 1♂, 29.8.1999. Caldes de Montbui, 1♀, 12.8.1999. Distribution: Circumtropical, Central Europe.

— *Paramormia ustulata* (Walker, 1856). Caldes de Montbui, 1♀, 10.7.1999. Santa Susanna, 1♀, 31.5.1998. Distribution: Europe, North Africa, Azores, North America (?).

— *Philosepedon humeralis*-group. Cabrils, exterior lamp, 1♂, 16.7.1998. Caldes de Montbui, 1♂, 31.5.1998; 1♂, 20.6.1998; 2♂♂, 20.7.1998; 1♀, 31.7.1998; 1♂, 10.9.1998; 2♂♂, 31.5.1999; 1♂, 11.6.1999; 2♂♂, 20.7.1999;

1♂, 20.8.1999. Vilassar de Dalt: 1♂, 12-18.2.1995. Distribution: species group distributed all over Europe. Species difficult to distinguish.

— *Psychoda albipennis* (Zetterstedt, 1850). Caldes de Montbui, 1♂, 31.3.1998. Vilassar de Dalt, 1♀, 1-7.1.1995; 2♂♂, 2♀♀, 3-9.12.1995; 1♂, 31.12.-6.1.1996. Distribution: widespread in Europe.

— *Psychoda cinerea* Banks, 1894. Barcelona, washroom, 1♀, 19.1.1998. Caldes de Montbui, 1♀, 2.10.1999. Vilassar de Dalt, 1♂, 29.1.-4.2.1995; 1♀, 12-18.3.1995; 1♂, 19-25.11.1995. Distribution: widespread in Europe and North America.

— *Psychoda minuta* Banks, 1894. Cabrils, inside house, 1♀, 17.7.1998. Caldes de Montbui, 3♂♂, 3♀♀, 20.6.1998; 1♂, 1.7.1998; 1♂, 10.7.1998; 1♂, 31.7.1998; 1♂, 21.8.1998. Vilassar de Dalt, 1♂, 15-21.1.1995; 1♂, 26.2.-4.3.1995; 2♂♂, 10-16.9.1995; 1♂, 1♀, 8-14.10.1995; 14♂♂, 5-11.11.1995; 1♂, 19-25.11.1995. Distribution: Cosmopolitan.

— *Psychoda surcoufi* Tonnoir, 1922. Vilassar de Dalt, 1♂, 10-16.9.1995. Distribution: France, Belgium, Spain.

— *Psychoda trinodulosa* Tonnoir, 1922. Vilassar de Dalt, 5♂♂, 1♀, 8-14.10.1995; 2♂♂ 7♀♀ 5-11.11.1995. Distribution: cosmopolitan.

— *Psychoda* sp. aff. *setigera*. Cabrils, exterior lamp, 1♀, 16.7.1998. Caldes de Montbui, 2♀♀, 10.6.1998; 1♀, 1.7.1998; 1♀, 31-5-1999. Mojácar, 1♀, 2-4.1999. Vilassar de Dalt, 1♀, 22-28.10.1995.

— *Satchelliella nubila* (Meigen, 1818). Barcelona, inside house, 1♂, 1♀, 12.5.1998. Santa Susanna, 1♂, 31.5.1998. Distribution: widespread in continental Europe.

— *Tinearia alternata* (Say, 1824). Barcelona, inside house, 1♀, 19.2.1998; 1♂, 4.6.1998; 1♂, 7.2.1999; 1♂, 20.1.2001; window, 1♂, 19.5.1998. Cabrils, exterior lamp, 1♂, 29.6.1998; 1♀, 4.7.1998; 1♀, 10.7.1998; 1♀, 22.7.1998; 1♀, 26.7.1998; 1♀, 2.9.1998. Caldes de Montbui, 1♀, 10.5.1998; 1♀, 10.6.1998; 1♀, 1.7.1998; 1♀, 31.10.1998; 1♀, 11.6.1999; 1♂, 1.7.1999; 1♀, 10.7.1999; 1♂, 1♀, 1.8.1999; 1♀, 12.8.1999; 1♀, 2.9.1999; 1♀, 11.10.1999; 1♂, 1.11.1999. Mojácar, 1♂, 4♀♀, 2.4.1999. Distribution: Cosmopolitan.

— *Tonnoiriella pulchra* (Eaton, 1893). Caldes de Montbui, 1♂, 20.5.1998. Distribution: Central and southern Europe. This species most probably does not occur in North Africa, where it is replaced by *T. atlantica* (Satchell).

CONCLUSIONS

Ten already known and two new moth-fly species of the subfamilies *Trichomyiinae* and *Psychodinae* are recorded from Spain. However, information on Iberian *Psychodidae* (Diptera) remains fragmentary. Probably less than 10

per cent of the species pool is known today. More thorough studies on aquatic insects in Portugal and Spain will reveal interesting faunistic connections between North Africa, the Iberian Peninsula and Central Europe.

ACKNOWLEDGEMENTS

Thanks to Dr. Miguel Carles-Tolrá (Barcelona) for reviewing the toponyms and for sending the material. Many thanks also to all the other collectors.

REFERENCES

- JEŽEK, J., 1990. Descriptions of new Sycoracine and Trichomyiine moth flies (Diptera, Psychodidae) from the palearctic region. *Acta Entomologica Musei Nationalis Pragae*, 43: 203-214.
- SARÀ, M., 1954. Specie nuove di *Pericoma* dall'Europa (Dipt. Psychodidae). *Ann. Ist. Museo Zool Univ. Napoli*, 6 (10): 1-15.
- VAILLANT, F., 1958a. Diptères Psychodidae recueillis par MM. J. Aubert et H. Bertrand en Espagne. *Bull. Soc. Ent. Fr.*, 63: 109-112.
- 1958b. Quelques espèces de *Pericoma* du groupe *unispinosa* Tonnoir (Dipter). *Rev. Fr. Ent.*, 25(2): 99-110.
- 1967. Diptères Psychodidae recueillis par M. A. Thomas dans les Pyrénées. *Annls Limnol.*, 3(2): 295-298.
- WAGNER, R., 1978. Neue europäische Psychodiden (Diptera: Psychodidae). *Senckenbergiana biol.*, 58: 157-170.
- 1979. Zwei neue Psychodiden (Diptera: Psychodidae) aus Südeuropa. *Ent. Z.*, 89: 193-196.
- 1982. Palaearctic moth-flies: a review of the Trichomyiinae (Psychodidae). *Syst. Ent.*, 7: 357-365 (1982).
- 1988. Psychodiden (Diptera) der Kanarischen Inseln. *Stuttgarter Beitr. Naturk. Ser. A, Nr.* 425: 1-14.
- 1993. Einige neue europäische Psychodiden (Diptera, Nematocera). *Entomofauna*, 14(24): 401-416.