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## New species of Swammerdamellini (Diptera, Scatopsidae) from Spain

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*Rhexoza campanella* sp. n. (Castilla y León) and *Swammerdamella bifurcata* sp. n. (Andalucía, Castilla y León) are described and figured and their affinities discussed.

Keywords: *Rhexoza*, *Swammerdamella*, Palaearctic, Spain, new species, systematics

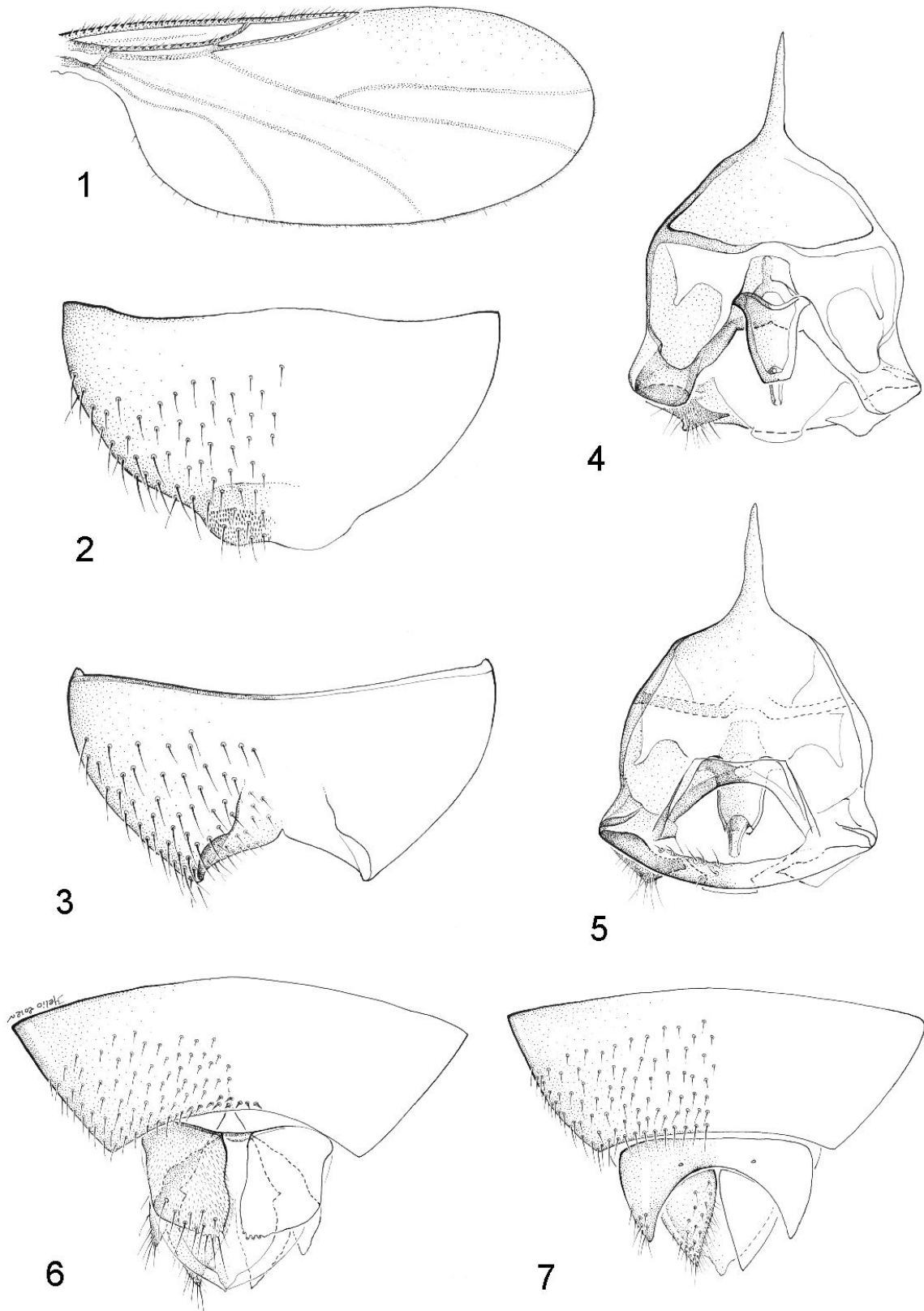
### INTRODUCTION

Our knowledge of the Scatopsidae from Spain is poor, resulting mainly from scattered surveys and occasional catches. In the «Catálogo de los Dípteros de España, Portugal y Andorra», only 19 species are enumerated from mainland Spain (Haenni & Báez 2002), but the existence of several new taxa awaiting description is mentioned. Since then, one new species of *Psectrosciara* was described by Carles-Tolrá (2008) and one species of *Ectaetia* and one of *Colobostema* were added to the list (Haenni 2009a, 2013). In the present paper two additional new species belonging to genera of the tribe Swammerdamellini of Scatopsinae are described, bringing to 24 the number of species of Scatopsidae known from mainland Spain.

### MATERIAL AND METHODS

All the material mentioned in the present paper is deposited in the collections of the Muséum d'histoire naturelle de Neuchâtel, Switzerland (MHNN), either dry pinned or preserved in alcohol, except for some paratypes in Museo Nacional de Ciencias Naturales, Madrid, Spain (MNCN). Specimens of *Rhexoza* were collected during a survey of the entomofauna of strawberry fields in Chañe (Segovia) conducted by José F. Gómez (Universidad Complutense de Madrid). Specimens of *Swammerdamella* were collected by the author during a field trip of the Muséum d'histoire naturelle de Neuchâtel in the mountainous ranges of Andalucía, together with Christophe Dufour.

Some specimens were cleared in potassium hydroxide, dissected and slide-mounted for description and production of figures. Morphological nomenclature follows Haenni (1997), nomenclature and faunistics according to Haenni (2013).



Figs 1–7: *Rhexoza campanella* sp. nov. — 1. Wing, ♀. — 2. Tergite 7, ♂. — 3. Sternite 7, ♂. — 4. Genital capsule, ♂, dorsal view. — 5. Genital capsule, ♂, ventral view. — 6. Terminalia, ♀, ventral view. — 7. Terminalia, ♀, dorsal view (drawings Mathieu Rapp).



## DESCRIPTIONS

***Rhexoza campanella* sp. nov.**

(Figs 1–7)

Type-locality. SPAIN – Castilla y León, Segovia: Chañe, 767 m, 41°20'N 4°25'W (UTM 30T UL8077).

*Type material.* Holotype ♂: SPAIN – Segovia: Chañe, Malaise trap, 1–17.VII.2000, J.F. Gomez leg. (S8501), in alcohol, terminalia slide mounted, in coll. MHNN. Paratypes (3 ♂♂, 14 ♀♀, in alcohol), same data as holotype except for dates of collecting, as follows: 18.V–3.VII.2000, 1 ♂; 17.VII–1.VIII.2000, 1 ♂, 3 ♀♀; 1–16.VIII.2000, 4 ♀♀; 16.VIII–4.IX.2000, 1 ♂, 6 ♀♀; 4–22.IX.2000, 1 ♀, all J.F. Gomez leg, in coll. MHNN, Neuchâtel.

*Diagnosis.* A very distinctive species among Palaearctic species of the genus *Rhexoza*: male tergite 7 (Fig. 2) with median projection apically truncate and smoothly emarginate, posterior emargination of sternite 7 V-shaped (Fig. 3), genital capsule (Figs 4–5) widest at apex, bell-shaped; female lateral lobes of sternite 8 (Fig. 6) widened and shortened, apically truncate.

*Description.* Male. 1.4–1.8 mm (in alcohol). Dull black in general colour, with short pilosity, pleura shining, tarsi contrasting yellow, tibiae obscurely annulated with yellowish, especially in female.

Head black. Antenna brown except pedicel yellowish-brown, 1.5 times as long as head, robust, thickened, with flagellum of 8 flagellomeres, last segment 2.5 longer than preceding one. Palpus yellowish-brown, as labella, of medium length, rounded apically. Thorax. Notum dull black with short brownish pilosity. Pleura shining black. Spiracular sclerite narrow, elongate, with posterior submedian small spiracle. Wing (Fig. 1) 1.3–1.5 mm, membrane hyaline, very slightly tinged yellowish, anterior veins yellowish-brown, posterior veins translucent. Costa long, reaching well beyond middle of wing. Fork of M about twice as long as stem, M1 very shortly interrupted at extreme base. Halter dark. Legs brownish-black, anterior and mid tibiae with an obscurely yellowish basal submedian ring, posterior tibia yellowish at base, with a postmedian yellowish ring, all tarsi contrasting yellow. Abdomen dull black, tergites and sternites with macrosetae and microsetae, sternites 1 to 3 absent. Tergite 7 (Fig. 2) with a medially truncate, slightly emarginate projection posteriorly. Sternite 7 (Fig. 3) with a complex deep V-shaped posterior emargination. Genital capsule (Figs 4–5) compact, flattened dorso-ventrally, incurved ventrally, rounded and widened apically, epandrium pilose apico-laterally (according to the angle of view, apical angles may appear much less marked, more rounded), aedeagus short.

Female. 1.8–2.2 mm (in alcohol). Wing 1.4–1.6 mm long. As male in general colour and aspect, dull black with tarsi and terminalia contrasting yellow. Terminalia (Figs 6–7): tergite 7 simple, sternite 7 shallowly emarginate posteriorly; tergite 8 (Fig. 7) deeply emarginate posteriorly, bearing spiracles, cerci large, broadly triangular, sternite 8 (Fig. 6) deeply incised, with lateral lobes shortened, wide, apically truncate; spermatheca large.

*Etymology.* Name formed after the Latin word *campanella*, meaning «little bell», in reference to the overall shape of the male genital capsule of this species. The specific name is used as a noun in apposition.

**Ecology.** All the specimens of the type-series were collected with Malaise traps or pitfall traps between mid-May and mid-September in a strawberry field bordered by a *Pinus sylvestris* wood, in an agricultural landscape in Chañe, altitude 767 m (prov. Segovia, Castilla y León), Spain. The new species was the second commonest scatopsid species of the survey, after *Swammerdamella brevicornis* (Meigen, 1830). Less numerous individuals of the following species of Scatopsidae were also caught: *Thripomorpha coxendix* (Verrall, 1912), *Scatopse notata* (L., 1758), *Coboldia fuscipes* (Meigen, 1830) and *Parascatopse minutissima* (Verrall, 1886) (only one specimen).

**Distribution.** The new species is known from the type-locality, 50 km NNW of Segovia in Castilla y León (Spain) and has recently also been found in SW Sardinia (Haenni 2009b: 444, as *Rhexoza* sp.).

**Discussion.** This is the first species of the genus *Rhexoza* recorded for the Iberian peninsula. This genus was proposed without a formal description by Enderlein (1936), who merely included it in a key to Central European genera of Scatopsidae, with only the type-species *Rh. zacheri* End. [= *Rh. subnitens* (Verrall, 1886)]. The genus was redefined by Cook (1956) to include quite numerous species from all zoogeographical regions. It soon appeared that it was in fact polyphyletic, and this resulted in subsequent successive splitting of *Rhexoza* into several genera. In its more restricted sense (Amorim 2007), it includes now only few species from the Palearctic (and possibly Oriental) regions. *Rhexoza campanella* sp. nov. is the fourth West Palearctic species, beside *Rh. flixella* Haenni, 2002 (Switzerland), *Rh. richardsi* Freeman, 1985 (Germany, Great Britain, Hungary, Norway), *Rh. subnitens* (Europe, widespread), and possibly *Rh. radiella* (Enderlein, 1926) (Tunisia). Several undescribed Palearctic species of this difficult group of genera are known to the author.

### ***Swammerdamella bifurcata* sp. nov.**

(Figs 8–18)

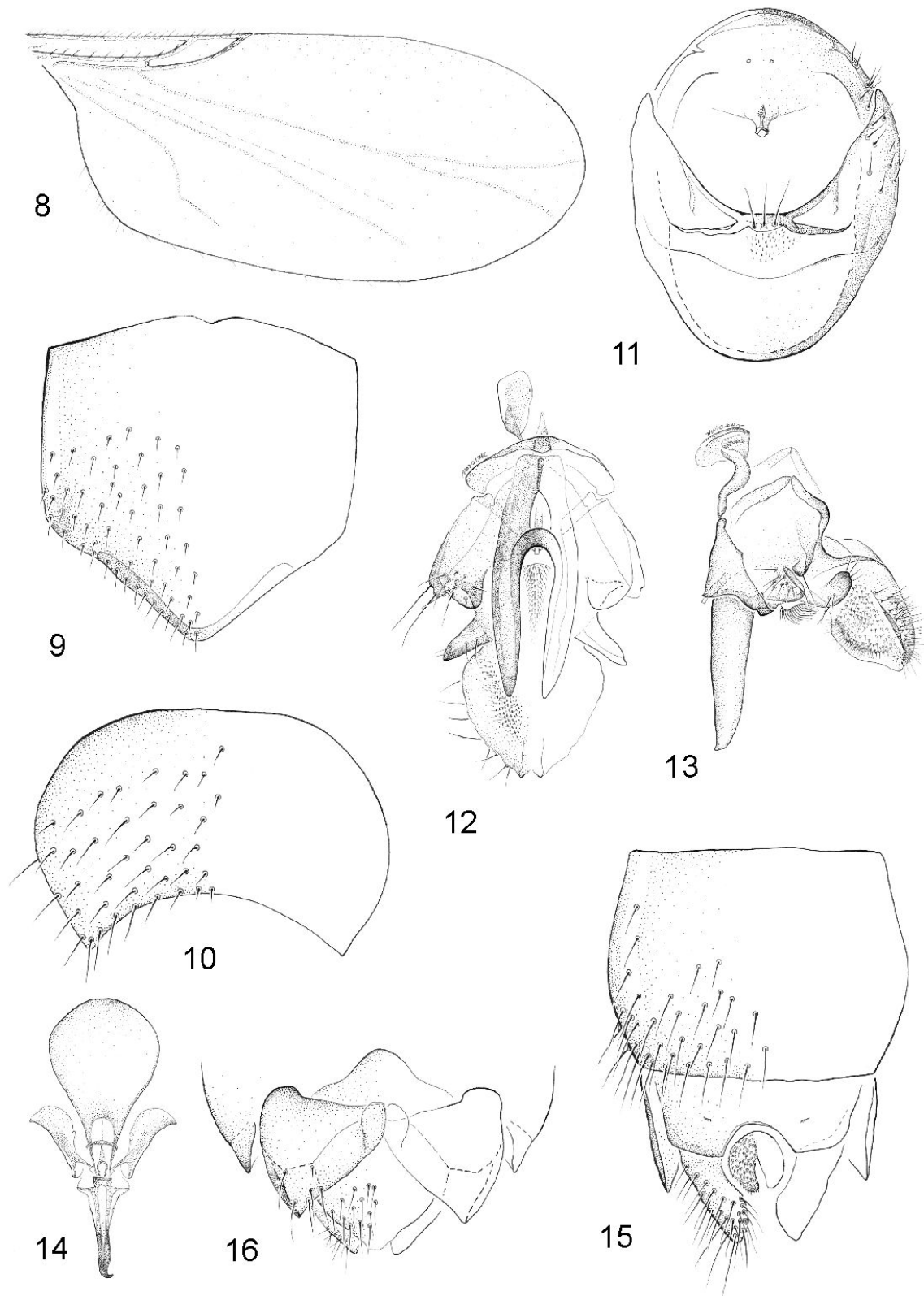
**Type-locality.** SPAIN-Andalucia, Jaén – Sierra de Cazorla: Embalse de Aguascebas, 38°02'25''N/2°56'33''W, 1060 m.

**Type material.** Holotype ♂: SPAIN, Jaén – Sierra de Cazorla: 8 km SW Cerro Blanquillo, Embalse de Aguascebas, 1000 m, open shrubby forest, along brook (st. 17), 29.IX.1989, J.-P. Haenni leg. (S5906) (holotype slide-mounted in coll. MHNN). Paratypes: 4 ♂♂, 2 ♀♀, same data as holotype, in alcohol, MHNN.

**Additional material.** Spain: Granada – Sierra Nevada: Güejar Sierra, Rio Genil, 1000 m, on *Mentha* flowers, in ditches on terraces along Rio Genil (st. 14), 28.IX.1989, 18 ♂♂, 15 ♀♀, J.-P. Haenni leg.; Güejar Sierra, 2.5 km SE, near bridge, 1050 m, on riparian vegetation along torrent-like river Rio Genil (st. 16), 28.IX.1989, 1 ♀, J.-P. Haenni leg.; Mecina-Bombarón, 1 km NE, along Rio Mecina, 1200 m, terraces with chestnut trees (*Castanea sativa*), *Juncus* and *Mentha* sp. (st. 20), 1.X.1989, 1 ♂♂, 2 ♀♀, J.-P. Haenni leg.

**Diagnosis.** Sigmoid vein CuA abruptly angled distally (Figs 8, 17); M-fork on wing elongate, antennal flagellum 8-segmented, tarsi contrasting yellow; male tergite 6 (Fig. 9) with a posterior triangular projection, terminalia (Figs 12–13) ventrally with a striking, strongly sclerotized, bifurcate aedeagal plate; female with contrasting fuscous-yellow genital complex.





Figs 8–16. *Swammerdamella bifurcata* sp. nov. — 8. Wing, ♂. — 9. Tergite 6, ♂. — 10. Sternite 6, ♂. — 11. Segment 7, ♂, tergite above. — 12. Genital capsule, ♂, ventral view. — 13. Genital capsule, ♂, lateral view. — 14. Sperm pump, ♂. — 15. Terminalia, ♀, dorsal view. — 16. Terminalia, ♀, ventral view (9–16, drawings Mathieu Rapp).

*Description.* Male. 1.4–1.6 mm. Dull black in general colour, with unapparent brownish pilosity, contrasting fuscous-yellowish tarsi and hyaline wings. Head black, antenna black, slightly longer than head height. Antenna slightly widening towards apex, with flagellum 8-segmented, flagellomeres wider than long, last flagellomere longer than two preceding ones together. Palpus brown, elongate and pointed at apex, labella prominent, pointed. Thorax narrow, notum and scutellum dull black, with brownish pilosity, pleura lighter brown, partly shining. A row of 10–12 supraalar setae. Anterior spiracular sclerite elongate, obtusely triangular, with anterior spiracular opening. Wing (Figs 8, 17) 1.2–1.3 mm, fuscous at extreme base, membrane hyaline, somewhat iridescent, anterior veins brown, posterior veins translucent; median fork elongate, nearly as long as stem, narrow, the branches diverging only near apex of wing; CuA sigmoid, distal bend abruptly angled. Halter brown. Legs brownish-black, except for tarsi, contrasting fuscous-yellow; posterior tibia may appear obscurely annulated with yellow according to the angle of view. Abdomen dull black, with brownish pilosity. Tergite 6 (Fig. 9) produced into a broadly triangular projection, strongly projecting over genital capsule, with denser and longer pilosity. Sternite 6 (Fig. 10) shallowly emarginate on posterior margin. Segment 7 (Fig. 11) retracted into segment 6; tergite 7 smooth, pilose apically on short lateral lobes, posterior margin medially with a short process; sternite 7 with a group of 3 setae on posterior margin medially, produced posteriorly into a pair of elongate, apically pilose, lateral projections. Genital capsule (Figs 12–13) elongate, with two short lateral paired lobes and one dorsal pilose, weakly sclerotized, oval lobe; aedeagal plate much developed in the shape of a strongly sclerotized, elongate, apically acute, bifurcate sclerite; aedeagus short. Sperm pump as in Fig. 14.

Female. 1.6–1.8 mm, wing 1.3–1.5 mm. Similar to male in general colour and morphology. Genital segment contrasting fuscous-yellow. Pilosity on last pregenital segment denser and longer on both tergite and sternite. Terminalia (Figs 15–16): tergite 8 bearing a pair of spiracular openings in the shape of sinuous scars, medially deeply emarginate to accommodate small cerci; sternite 8 divided into two lateral lobes.

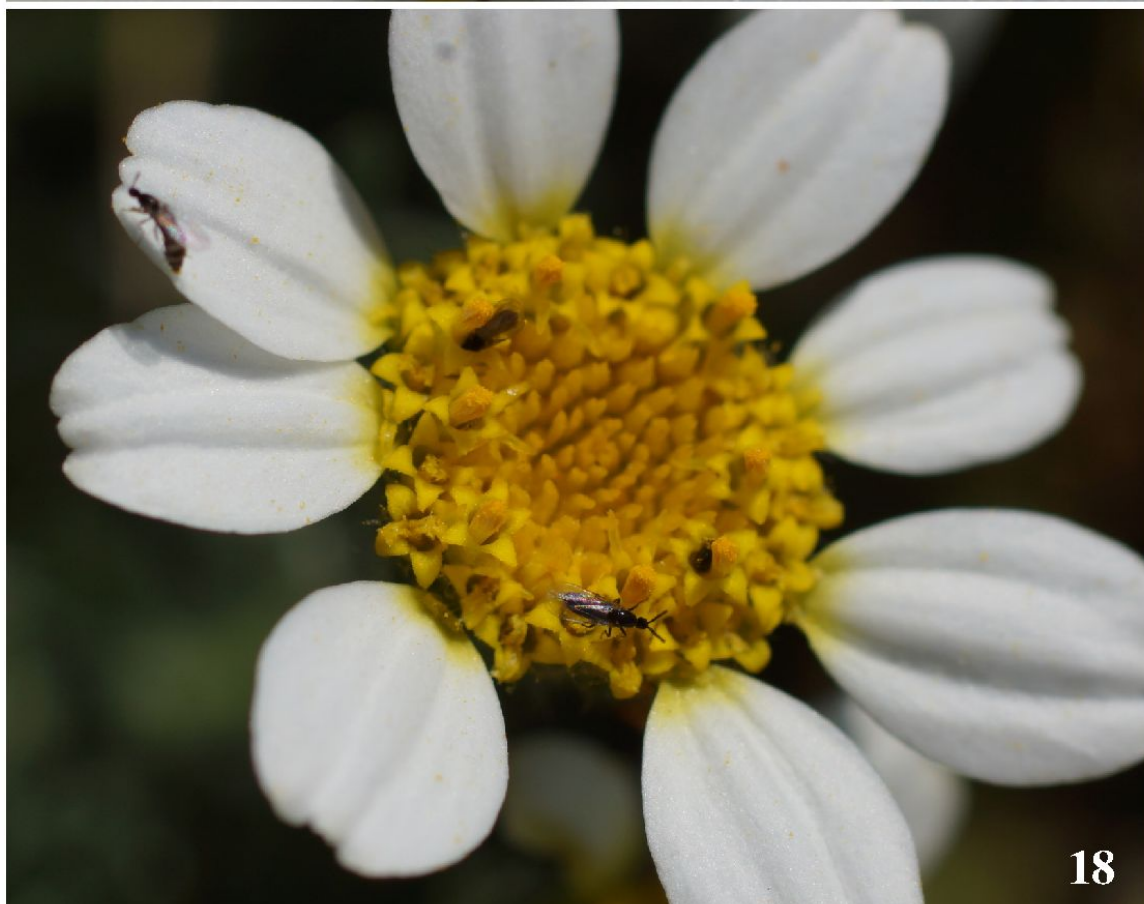
*Etymology.* The specific epithet, a feminine Latin adjective, refers to the remarkable bifurcate shape of the male aedeagal plate.

*Ecology.* All collections were made in late September/early October, in different open or semi-wooded habitats in the Sierra Nevada (northern and southern foothills) and in the Sierra de Cazorla, at about 1,000 m elevation, by sweeping the vegetation in the vicinity of running water. In two localities, the specimens were collected on flowering *Mentha* sp. The new species was observed and photographed (Figs 17–18) by Vicente Santamaria Saldaña in Hormaza (Burgos, Castilla y León) from 8 to 15 September 2014 on flowers of *Anthemis* sp. (Asteraceae) in sparsely bushy and wooded agricultural landscape (elevation 820 m, coordinates 42°19'16" N / 3°55'05" W).

*Distribution.* The new species is known till now from some localities of Spain (Sierra Nevada, Sierra de Cazorla, Castilla highlands) and has recently also been recorded in SW Sardinia (Haenni, 2009b: 445, as *Swammerdamella* sp.).

*Discussion.* This is the second species of the genus *Swammerdamella* to be recorded from the Iberian peninsula, along with the widespread West Palaearctic *S. brevicornis* (Meigen, 1830). *S. bifurcata* sp. nov. belongs to the *S. pygmaea*-group (elongate M-fork on wing, 8-segmented antennal flagellum and contrasting yellow





Figs 17–18. *Swammerdamella bifurcata* sp. nov. on *Anthemis* sp. in Hormaza (Spain), September 2014. The specimens are covered with pollen, as they enter inside the tubular flowers. Photographs © Vicente Santamaria Saldaña, from his website <http://faunasilvestredehormaza.blogspot.fr/search/label/Diptera%20Scatopsidae>.



tarsi) as defined by Cook (1956). *S. bifurcata* sp. nov. is the fourth European species of this clearly monophyletic group of rarely collected species, which includes *S. genypodis* Cook, 1972 (Czech Republic, Finland, France, Germany, Norway, Sweden, Switzerland), *S. pediculata* (Duda, 1928) (Germany, Hungary, Slovakia, Sweden, Switzerland) and *S. spinigera* Haenni, 2009 (Sardinia) (Haenni 2012). The new species is vicinuous to *S. pediculata* and *S. spinigera*. Two additional species are known from the Nearctic region, *S. confusa* Cook, 1956 and *S. pygmaea* (Loew, 1864), both confined to the eastern part of the USA (Cook 1956).

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