

**Zeitschrift:** Mitteilungen der Schweizerischen Entomologischen Gesellschaft = Bulletin de la Société Entomologique Suisse = Journal of the Swiss Entomological Society

**Herausgeber:** Schweizerische Entomologische Gesellschaft

**Band:** 71 (1998)

**Heft:** 3-4

**Artikel:** New data on the distribution of some Tethinidae (Diptera) of the western Palaearctic region, with description of a new species

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**DOI:** <https://doi.org/10.5169/seals-402725>

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## New data on the distribution of some Tethinidae (Diptera) of the western Palaearctic region, with description of a new species

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New distribution data are given for 11 species of Tethinidae, mainly from the Mediterranean. *Tethina salinicola* sp. nov. from southern France is described, illustrated and compared with related species. *T. quadricephala* is recorded for the first time from Europe (Ukraine).

Keywords: Tethinidae, faunistics, West Palaearctic, Taxonomy, Tethina.

### INTRODUCTION

The Tethinidae are a family of small flies which inhabit salty and sandy ecosystems. They are usually found along the sea shore, or around the inner continental salt pools or grounds. Thus, it is evident that they do not cover the large mainland but are restricted to suitable limited localities. The present knowledge of the systematics and distribution of all species of the world has been published by MATHIS & MUNARI (1996) in their "World Catalogue". Only few papers have appeared since this publication: MUNARI (1996, 1997), BESCHOVSKI & NARTSHUK (1997), and BESCHOVSKI (1997). These papers show that the distribution of Tethinidae in the Mediterranean is still very insufficiently known, apparently because of their small size and the brownish colour of the body, which makes them difficult to spot in the field and sometimes even in the net.

In this respect, this paper may contribute to a better understanding of the distribution patterns of some Tethinidae. It also includes the description of a new species from southern France.

### MATERIAL AND METHODS

The studied material belongs to the entomological collection of the Federal Institute of Technology, Zürich (ETHZ) and the private collection of Bernhard MERZ (CBM). Few duplicate specimens are also in the collection of the author (CVB). Most specimens were collected in southern France and in Israel, with some additional specimens from southern Italy and Crete. One specimen of *T. quadricephala* originating from southern Ukraine belongs to the Zoological Institute in St. Petersburg. It was omitted by BESCHOVSKI & NARTSHUK (1997) because it was formally described only later by FREIDBERG & BESCHOVSKI (1996).

Systematic arrangement and geographical distribution follow MATHIS & MUNARI (1996) and the papers listed above. The countries are arranged from west to east. For each species, exact localities and collecting dates are given. All specimens were collected either by B. MERZ, by MERZ & EGGENBERGER (France and Crete material) or by MERZ & FREIDBERG (Israel material), unless otherwise stated. Gen-

eral information about the species is not included as it can be found in MATHIS & MUNARI (op. cit.).

SYSTEMATIC PART

*Tethina* HALIDAY in CURTIS, 1837

Subgenus *Tethina* s.str.

1. *Tethina* (s. str.) *albosetulosa* (STROBL, 1900)

Material studied (15 specimens): **France**: Bouches-du-Rhône, Salin de Giraud, 1 ♂, 1 ♀, 29.V.1995. **Italy**: Puglia, Mte. Gargano, Lago di Varano, 0 m, 5 ♂♂, 7 ♀♀, 1 without abdomen, 27.VII.1995. **Greece**, Crete: Kato Gouves, 0 m, 1 ♀, 23.IV.1991.

Subgenus *Rhinoessa* LOEW, 1862

1. *Tethina* (*R.*) *czernyi* (HENDEL, 1934)

Material studied (4 specimens): **France**: Bouches-du-Rhône, Salin de Giraud, 1 ♀, 29.V.1995. **Israel**: Mizpe Ramon, 1 ♀, 14.IV.1992; Bor Mashash, 1 ♀, 16.III.1995; Herzliyya, 1 ♀, 11.III.1995.

Remark: New for France.

2. *Tethina* (*R.*) *flavigenis* (HENDEL, 1934)

Material studied (11 specimens): **Netherlands**: Zeeland, Burghsluis, 1 ♂, 23.VIII.1995 (leg. MERZ & VAN AARTSEN). **France**: Bouches-du-Rhône, Salin de Giraud, 7 ♂♂, 1 ♀, 29.V.1995. **Greece**, Crete: Kato Gouves, 0 m, 1 ♂, 23.IV.1991. **Italy**: Puglia, Mte. Gargano, Lago di Varano, 0 m, 1 ♂, 27.VII.1995.

Remark: New for France and Greece.

3. *Tethina* (*R.*) *flavoidea* BESCHOVSKI, 1997

Material studied (5 specimens): **Israel**: En Mor, 3 ♂♂, 16.III.1995; Enot Zukim (Ein Feshkha), 1 ♂, 1 ♀, 19.III.1995.

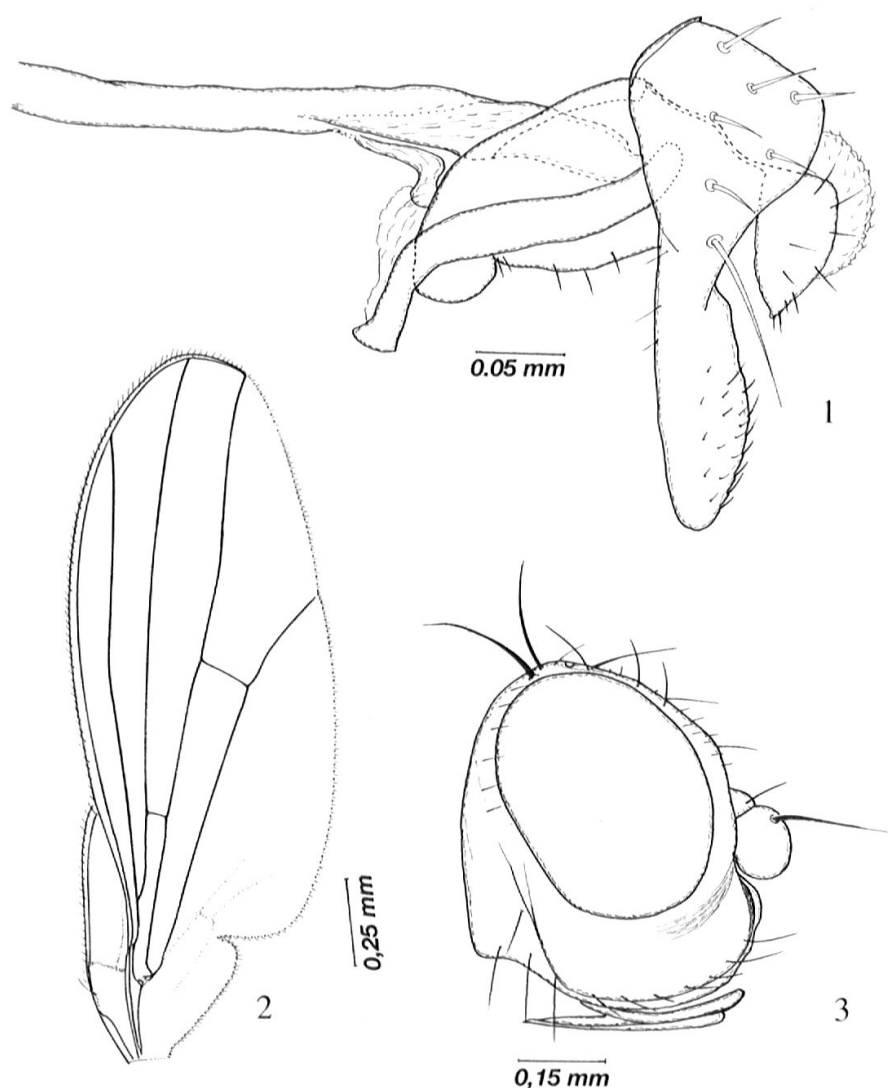
4. *Tethina* (*R.*) *incisuralis* (MACQUART, 1851)

Material studied (72 specimens): **Greece**, Crete: Matala, 0 m, 1 ♀, 20.IV.1991. **Israel**: Bor Mashash, 12 ♂♂, 7 ♀♀, 16.III.1995; En Mor, 8 ♂♂, 4 ♀♀, 16.III.1995; Yeroham Pond, 4 ♀♀, 16.III.1995; Nahal Qumran, 1 ♀, 10.IV.1992; Newe Zohar, 10 ♂♂, 3 ♀♀, 19.III.1995; Timna, 1 ♂, 16.III.1995; Mishor Paran, Rt. 10, 70 km N Elat, 2 ♂♂, 1 ♀, 17.III.1995; Elot, 14 ♂♂, 1 ♀♀, 18.III.1995; Tel Aviv Beach, Country Club, 1 ♀, 14.III.1995; Enot Zukim (Ein Fashkha), 1 ♀, 21.IV.1992; same, 1 ♂, 19.III.1995.

Remark: New for Crete.

5. *Tethina* (*R.*) *salinicola* spec. nov.

**Holotype** ♂, France, Bouches-du-Rhône, Salin de Giraud, 29.V.1995, leg. MERZ & EGGENBERGER. **Paratypes**: 4 ♂♂ with same data as Holotype; 5 ♂♂ with



Figs 1–3. *Tethina salinicola* sp. nov. 1, Male genitalia in lateral view; 2, Wing; 3, Head in lateral view.

same data as Holotype, but leg. B. MERZ. The holotype is deposited in the ETHZ, paratypes in CBM, CVB and ETHZ.

Diagnosis: Thorax grey-yellowish, femora and abdomen dark grey dusted; face, frons, antennae, palpi, labellum and anterior four tibiae yellow. Genae wide, about one quart of the vertical height of one compound eye.

#### Description

Head (Fig. 3) in profile 1.2 times higher than long, mostly yellowish with only the ocellar triangle, vertex, the base of the upper orbital setae and occiput dark gray. Both vertical setae long, about as long as the arista. Postocellar setae hair-like, inclinate; ocellar setae long, but somewhat shorter than verticals, latero-clinate. Fronto-orbital vittae anterior the basis of the upper orbital setae of the same orange-yellow colour as the frons. Two pairs of latero-reclinate, brown orbital setae are present, of which the upper is well developed, equal to one-half of the length of the vertical setae. The lower orbital setae is hardly different from the surrounding hairs. Two interfrontal setae present which are brownish, proclinate-inclinate, and slightly longer than the other hairs. Face and genae entirely covered with pale yellow-

whitish microtomentum. Facial carina in profile prominent, extending anterior the facial tubercle but slightly behind the middle of the first flagellomere. Antennae entirely yellow. Pedicellum with one pair of strong brownish setae present which is about half as long as the arista. First flagellomere 1.25 times longer than wide. Arista brownish, rather short, about twice as long as the width of the first flagellomere. Genae comparatively narrow, 1.2 times higher than the width of the first flagellomere and with a narrow shining stripe in the anterior part. Compound eye 3–4 times higher than genae in profile. Vibrissae black-brown, situated below the facial tubercle. Five-six brownish peristomal hairs present, the first of which is about as long as the vibrissa. Palpi and labellae long, yellow.

Thorax wholly grey-yellowish dusted, setae long, well developed, as usual in the genus. One pair of dorsocentral setae anterior and three pairs posterior of the suture present. Both proepisternal- and proepimeral setae present. Anepisternum with two black postero-marginal setae. Four-five pairs of acrostichals in 2–4 irregular rows.

Legs conspicuously bicoloured: All femora, the hind tibiae except for knees and the last two joints of mid- and hind tarsi brown-grey and the remaining parts yellow. Coxae dark at the base and yellowish in the apical part; trochanteres orange-yellowish. Fore and hind femora swollen; fore femora setulose posteroventrally and posterodorsally, mid- and hind tibia with a spur.

Wing (Fig. 2) with pale yellowish membrane and veins. Costal index (C2:C3) about 3.4. Small crossvein (R-M) situated at about the middle of the discal cell (dm). Anterior branch of CuA<sub>1</sub> 2.4 times longer than the Dm-Cu. Halteres wholly pale yellow.

Abdomen dark grey. Tergites apically with a wide whitish transverse stripe.

Male terminalia (Fig. 1) with a comparatively small epandrium and with elongated lateroventral lobes.

Dimensions: Wing length: 1.65–1.9 mm; body length about 1.5 mm.

Etymology: The species is named after the type locality.

Discussion: The structures of the ♂ genitalia (Fig. 1) resemble *T. strobliana*, *T. pallipes* and *T. longirostris*, but *T. salinicola* is well distinguished by the long lateroventral lobes and the small epandrium. In this respect, the new species may be compared with *T. munarii* CARLES-TOLRÀ, 1993, but in this species the epandrium is considerably higher and the genae are much narrower (only about one fifth of the vertical height of the compound eye; in *T. salinicola* this ratio is one fourth to one third, Fig. 3).

#### 6. *Tethina* (R.) *longirostris* (LOEW, 1862)

Material studied (1 specimen): **Greece**, Crete: Kato Gouves, 1 ♂, 23.IV.1991.

Remark: The identification of the specimen is somewhat tentative, as the head is missing. The black-brown femora and hind tibiae, as well the structure of the ♂ genitalia are very similar to *T. longirostris*, but the lateroventral lobes of the epandrium are somewhat more setulose than in typical specimens.

New for Crete.

#### 7. *Tethina* (R.) *nigrofemorata* BESCHOVSKI, 1997

Material studied (6 specimens): **France**: Bouches-du-Rhône, Salin de Giraud, 3 ♀♀, 29.V.1995. **Israel**: En Mor, 3 ♂♂, 16.III.1995.

8. *Tethina* (*R.*) *ochracea* (HENDEL, 1913)

Material studied (4 specimens): **France**: Bouches-du-Rhône, Salin de Giraud, 2 ♂♂, 1 ♀, 29.V.1995. **Israel**: Tel Aviv Beach, Country Club, 1 ♀, 0 m, 14.III.1995.

Remark: New for France.

9. *Tethina* (*R.*) *quadricephala* FREIDBERG & BESCHOVSKI, 1996

Material studied (1 specimen): **Ukraine**: labelled "Aleshki nizove, Dnepr, 14.VI.1926, leg. ZIMIN". This locality is in the district of Hersson on the east side of the Liman of Dnepr or at the mouth of the river given today as Aleshkovskie peski (= sands).

Remark: New for Europe. The species was described from Egypt. The new finding is very surprising, and it may indicate a disjunctive distribution of this halo- and psammophilous species.

10. *Tethina* (*R.*) *strobliana* (MERCIER, 1923)

Material studied (42 specimens): **France**: Bouches-du-Rhône, Salin de Giraud, 38 ♂♂, 2 ♀♀, 29.V.1995. **Italy**: Puglia, Mte. Gargano, Lago di Varano, 0 m, 1 ♀, 27.VII.1995. **Israel**: En Mor, 1 ♂, 16.III.1995.

## DISCUSSION

The present paper lists 11 species, of which one, *Tethina salinicola*, is described as new, and new country records are given for 6 additional species: *T. flavigenis*, *T. longirostris* and *T. incisuralis* are new for Crete (Greece), *T. czernyi*, *T. flavigenis* and *T. ochracea* are new for France and *T. quadricephala* is new for the Ukraine (and Europe). In the recent World catalogue, MATHIS & MUNARI (1996) list about 30 species from the Mediterranean. It is thus interesting to note that the present paper includes data on 10 species, although the flies originate only from few localities and were not systematically collected. This is a good example which shows that the members of this family may be locally very abundant and exhibit a high diversity. For example, 7 species were collected at one day in southern France (Salin de Giraud) in a very small, restricted area along the sea shore. It is yet not understood how such a high diversity may occur in a very small and superficially rather uniform habitat.

## ACKNOWLEDGEMENTS

I am very grateful to B. MERZ (Zürich) for putting most of the specimens at my disposal as well as for his comments on an early draft of the manuscript and to L. MUNARI (Venezia) for his comments on the new species.

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(received June 17, 1998; accepted July 2, 1998)