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A new species of *Trichocera* s. str., related to *T. mutica* DAHL, 1966 (Diptera, Trichoceridae)

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Trichocera mutica DAHL, 1966 is redescribed and description is given of *Trichocera tenuistylus* sp. n. from Switzerland.

Keywords: *Trichocera tenuistylus* sp. n., *Trichocera mutica* DAHL, 1966, redescription, Trichoceridae, Switzerland.

INTRODUCTION

In 1966, DAHL described *Trichocera mutica* on the basis of a single male specimen from Bavaria (Germany). The species is rather distinctive in the structure of the male genitalia, above all being characterized by robust basistyles, with the ventrobasal lobes (forming the so-called bridge) extremely broad at base, and by long, sinuous dististyles.

In the material collected by the junior author in Switzerland/Graubünden, several specimens of *T. mutica* were identified. In addition, a new species was discovered, apparently related to *T. mutica*. As some discrepancies were found between the above mentioned specimens and the original description of *T. mutica*, we also examined the holotype of the latter. Hence, in the present paper, redescription is presented of *T. mutica*, with first records from Switzerland, and a new species is described from this country.

In the structure of the male genitalia, the two species are somewhat beyond the European format of *Trichocera* s. str.; yet, for the time being, it seems advisable to retain them in the subgenus until a thorough revision is made. In general, it is now becoming evident that the European trichocerid fauna is much more diverse and richer in species than previously believed, most probably not concentrated predominantly in northern territories.

DESCRIPTIONS

Trichocera (Trichocera) mutica DAHL

(Figs 1, 3–5)

Trichocera mutica DAHL, 1966 : 271.

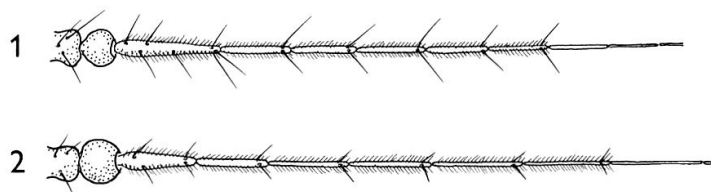
Diagnosis

Medium-sized species. General body colouration brown, abdomen paler than thorax. Dististyle of male genitalia parallel-sided, flattened dorsoventrally and broadly rounded at apex. Body length 4.5–6 mm, wing length 6.5–7.5 mm.

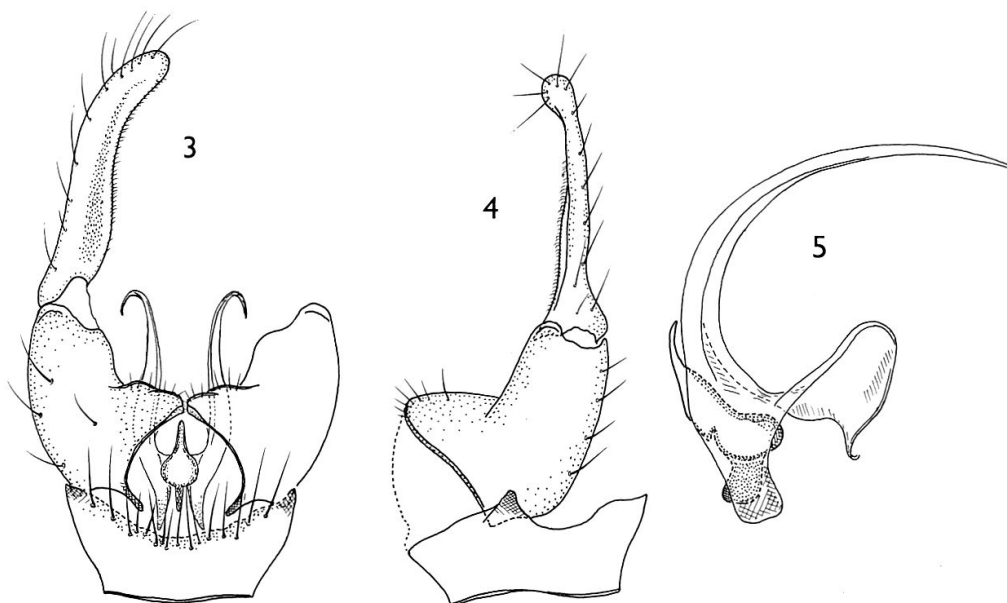
Male

Head dark-brown. Palpi long, more than twice as the head. Last palpal segment constricted at mid-length, about 1.5 times as long as the preceding one. Antennae of medium length, approximately reaching distal margin of abdominal segment 3. Pedicel spherical, not especially large. First flagellomere slightly swollen in proximal half, about 1.5 times as long as second. Following flagellomeres becoming only very slightly shorter distally. Distal half of antenna exceedingly thin, filiform. Verticils on proximal flagellomeres 3-4 times as long as flagellomere diameter, situated just before apex of segment (Fig. 1).

Thorax brown. Pleura bare. Wing venation: Sc_1 ending between shortly before R_2 and about opposite half R_{2+3} ; Sc_2 opposite $1/4$ to $1/3$ Rs ; R_{2+3+4} subequal to R_{2+3} ; R_2 not just vertical but slightly reversely oblique, i.e., upper connection point (with R_1) slightly proximal of lower one (R_2 - R_3 fork); discal cell rather broad, with cross-vein m-cu sometimes shifted (in two specimens) proximally from distal end of discal cell. Setae on dorsal side of Sc short and very sparse, somewhat more numerous ventrally, especially at mid-length of vein. Halteres whitish-yellow, with knob



Figs. 1-2. Male antenna (proximal segments). 1: *Trichocera (Trichocera) mutica* DAHL, 1966. 2: *Trichocera (Trichocera) tenuistylus* sp. n.



Figs. 3-5. *Trichocera (Trichocera) mutica* DAHL, 1966 (Switzerland, S-chanf). 3-4: general view, ventral (3) and lateral (4). 5: aedeagal complex, lateral.

somewhat darkened, reaching to distal margin of abdominal segment 3. Tibial spurs short, about half length compared to those in other *Trichocera* s. str. Tarsal claws distinctly longer, about twice as long as in the others.

Abdomen yellowish-brown, paler than thorax. Male genitalia (Figs 3–5) large. Segment 9 considerably expanded distally, sternal part with protruding lateral corners and numerous bristles along widely and shallowly emarginate distal margin. Basistyle (gonocoxite) stout, with ventrobasal lobe extremely broad (its width at base equalling basistyle diameter), strongly tapered distally and separated from its counterpart on top of bridge. Generally, bridge is low and flat, ventrobasal lobes arising at nearly right angle from basistyles (Figs 3–4). Dististyle (gonostylus) stout and long, parallel-sided, without any tubercle at inner base, about 1.5 times as long as basistyle, rather broad, distinctly sinuous and broadly rounded at apex in dorsal/ventral view (Fig. 3). However, it is conspicuously flattened dorsoventrally, elongately drop-shaped in cross section, with edge on inner face of dististyle and, viewed laterally, bulbous at apex (Fig. 4). Parameres slender, rather long, their laterodorsal blades considerably deflected in lateral view. Aedeagus comparatively small, of rather unusual outline, with vesica asymmetrical in lateral view, swollen dorsally, with dark pigmented vaginal apodeme deflected from long axis of aedeagus and situated rather ventrally (Fig. 5). Normally, in the European *Trichocera* species, vesica is more or less symmetrically bulbous in lateral view, with vaginal apodeme directed anteriorly essentially along long axis of aedeagus. Other details are evident from Fig. 5.

Female unknown.

Type material examined

Holotype ♂: Germany, Oberbayern, Wendelstein - cave, 24.X.1947, WICHMANN-FREUDE leg.; in coll. Zoologische Staatssammlung, München. The specimen is micro-pinned, with only mid and hind left legs present, apex of abdomen broken off. Labels: “Wendelstein OBB 24.X.1947 Höhle Wichmann - Freude” (printed) and “Holotypus *Trichocera mutica* sp. n. Christine Dahl 1966” (red; hand-written except for “Holotypus”). Genitalia in a glass microvial with glycerol on a separate pin marked with corresponding labels. A folded piece of paper was added by H. MENDL in 1990 with the following inscription: “... Die Parameren sind sehr schmal und nicht, wie in der Originalbeschreibung angegeben und irreführend gezeichnet, 'breit'...” (see Discussion).

Other material examined

Switzerland/Graubünden: S-chanf, God Drosa, 8.X.1985, 3 ♂♂, S-chanf, Alp Vauglia, 8.X.1985, 2 ♂♂ (GEIGER leg., in alcohol); in coll. Musée d'Histoire naturelle, Neuchâtel, and J. STARÝ, Olomouc.

Discussion

The specimens on the basis of which the body colouration was described as brown/yellowish-brown in the present redescription are discoloured by clearing in alcohol and the real hue of this and the following species is definitely darker, dark-brown or, rather, dark greyish-brown, as it is in the dried holotype of *T. mutica*. However, for the time being, differences in the character between the two species, if any, could not be determined.

Anyway, there is now no doubt about the identity of *T. mutica* because, fortunately, the species belongs to distinctive forms, characterized by some well-defined traits such as the shape of the bridge and the dorsal/ventral aspect of the dististyle (Fig. 3). These characters were more or less adequately described and illustrated in the original description (DAHL, 1966, Fig. 2).

On the other hand, some features should be corrected or added. The figure of the aedeagal complex, as presented by DAHL (1966, Fig. 3), is quite confusing depicting unreal proportions and configurations (see also the note by MENDL under Type material examined). In fact, the parameres are long and slender and other parts are arranged as illustrated (Fig. 5). These discrepancies were actually the main reason why the holotype was borrowed for study. Unfortunately, similar inaccuracies often occur in illustrations by the latter author which obscures considerably the identity of many *Trichocera* species. In contrast to the original description, setae on dorsal side of Sc are present even though very few. They were also traced in the holotype. The most striking feature to be mentioned is the shape of the dististyle in lateral aspect (Fig. 4).

Finally, it should be stated that three North American species cited in the introduction of the original description of *T. mutica* as possibly being closely related to the latter (DAHL, 1966 : 271), viz. *T. bituberculata* ALEXANDER, 1924; *T. tetonensis* ALEXANDER, 1945 and *T. hyaloptera* ALEXANDER, 1949, have nothing in common with *T. mutica*. The two latter are now even considered synonyms of a species assigned to the subgenus *Metatrachocera*. Considering all this, it may seem somewhat surprising that *T. major* EDWARDS, 1921, widely distributed in Europe and reminiscent of *T. mutica* in dorsal/ventral aspect of the dististyle, although actually not related to, was not mentioned in this connection, even more so since it was given in a faunal list appended to the description.

Trichocera (Trichocera) tenuistylus sp. n.

(Figs 2, 6-8)

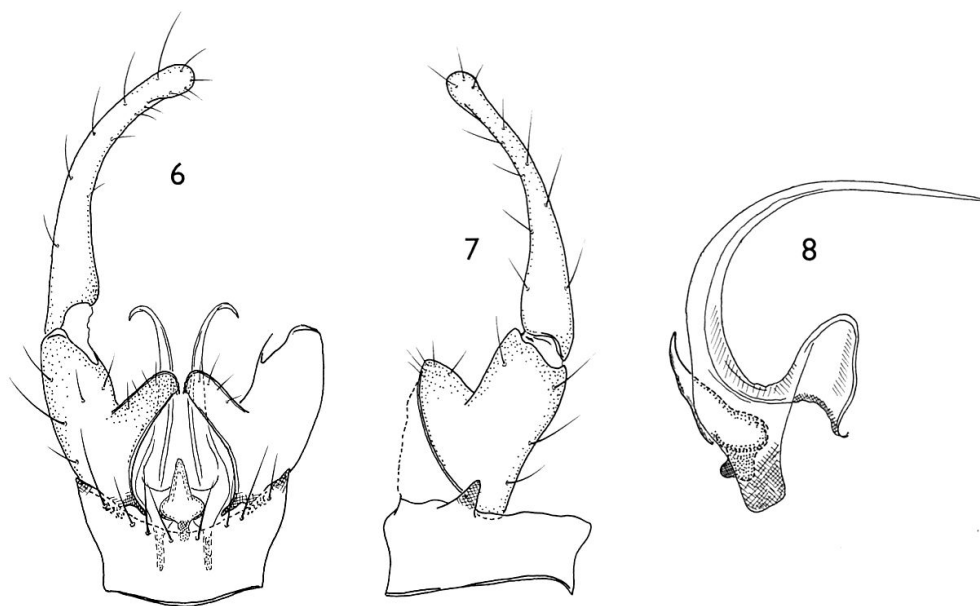
Diagnosis

Medium-sized species. General body colouration brown, abdomen paler than thorax. Dististyle of male genitalia very long, narrowed distally and bulbous at apex. Body length 4.5 mm, wing length 7 mm.

Male

Head dark-brown. Palpi long, more than twice as long as head. Last palpal segment constricted at mid-length, about 1.5 as long as preceding one. Antennae longer than in *T. mutica*, extending beyond abdominal segment 4. Pedicel appearing larger than in the latter species. First flagellomere rather conical, only slightly longer than second (thus, shorter than in *T. mutica*). Following flagellomeres becoming slightly longer distally and more slender. Distal half of antennae exceedingly thin, filiform. Verticils on proximal flagellomeres about twice as long as diameter of flagellomere, or slightly more (thus, shorter than in *T. mutica*) (Fig. 2).

Thorax brown. Pleura bare. Wing venation: Sc₁ ending distinctly beyond R₂; Sc₂ beyond 1/3 Rs, nearly opposite half the latter; R₂₊₃₊₄ distinctly longer than R₂₊₃, about twice as the latter; R₂ slightly reversely oblique (as in *T. mutica*); discal cell generally as in previous species. Setae on Sc somewhat more numerous than in *T.*



Figs. 6-8. *Trichocera (Trichocera) tenuistylus* sp. n. (holotype). 6-7: general view, ventral (6) and lateral (7). 8: aedeagal complex, lateral.

mutica. Halteres whitish-yellow, reaching distal margin of abdominal segment 3. All legs are broken in the holotype so that length of tibial spurs and tarsal claws could not be determined.

Abdomen yellowish-brown, paler than thorax. Male genitalia (Figs. 6-8) generally not as large as in *T. mutica*. Segment 9 with sternal part as in the latter species except that bristles along distal margin are less numerous. Basistyle (gonocoxite) slender, its ventrobasal lobe not especially broad at base and not conspicuously tapered distally, arising at acute angle from basistyle so that bridge is higher than in *T. mutica* (Figs 6-7). Dististyle (gonostylus) slender and very long, almost twice as long as basistyle, distinctly narrowed distally and conspicuously bent inwardly, circular in cross section and with apex appearing bulbous from all sides (Figs 6-7). Aedeagal complex much as in *T. mutica*, including unusual shape of vesica and position of vaginal apodeme, differing in that laterodorsal blades of parameres appear not as deflected as in the latter species (Fig. 8). Other details are evident from Fig. 8.

Female unknown.

Material examined

Holotype ♂: Switzerland/Graubünden: S-chanf, God Drosa, 8.X.1985 (GEIGER leg., in alcohol); in coll. Musée d'Histoire naturelle, Neuchâtel.

Discussion

T. mutica and *T. tenuistylus* sp. n. are easily distinguishable from each other by the shape of the dististyle and other details of the male genitalia, as indicated in the above descriptions (cf. Figs 3-4 and 6-7). Further distinctions may be found in

the structure of the antennae (cf. Figs 1 and 2) and the wing venation. However, due to the limited material available and possible variation, these traits must be considered with some reservation. Nevertheless, it seems that at least the length of the verticils (cf. Figs 1 and 2) is sufficiently constant and may be useful for separating the two species.

On the other hand, the following complex of characters may serve as evidence of a close relationship between the two species: the considerable length of palpi, reversely oblique R_2 , distally expanded segment 9, long dististyle without any tubercle at inner base and, above all, the unusual shape of vesica.

In two specimens of *T. mutica* (out of the 6 available), the cross-vein m-cu is shifted proximally from the distal end of the discal cell, being situated, in the holotype, as far as at $3/4 M_{3+4}$. Only additional material may show whether this tendency is present also in *T. tenuistylus* sp. n.

Etymology

The species is named *tenuistylus* after its long and slender dististyle. The name is a noun in the nominative singular standing in apposition to the generic name.

ACKNOWLEDGEMENTS

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