

## A new species of the genus *Trichina* (Diptera: Hybotidae) with a key to European species

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**Abstract:** *Trichina thaya* sp. n. (Diptera: Hybotidae) from the Czech Republic is described and illustrated. Key to European species of the genus *Trichina* is provided.

**Key words:** *Trichina*; new species; Czech Republic; Europe

### Introduction

The genus *Trichina* Meigen, 1830, type species *Trichina clavipes* Meigen, 1830 (des. Rondani, 1856), was re-described in details by Chvála (1983). The list of valid European *Trichina* species was presented by Chvála & Wagner (1989), and more recently by Chvála (2004), as follows (alphabetically): *T. bilobata* Collin, 1926, *T. clavipes* Meigen, 1830, *T. elongata* Haliday, 1833, *T. opaca* Loew, 1864, *T. pallipes* (Zetterstedt, 1838), and *T. unilobata* Chvála, 1981. An additional species, *T. thaya* sp. n., is described here as new species for science.

### Material and methods

Within the project “Complex research of Diptera in the Podyjí National Park” (Barták & Kubík 2005) we found a new species of *Trichina* that is here described. Type materials are deposited in the collection of the Czech University of Life Sciences in Prague. The genitalia were macerated in 10% KOH (24 hours, room temperature) and stored together with specimens in plastic microvials with glycerine. The morphological terms used here follow those of Merz & Haenni (2000) and Sinclair (2000).

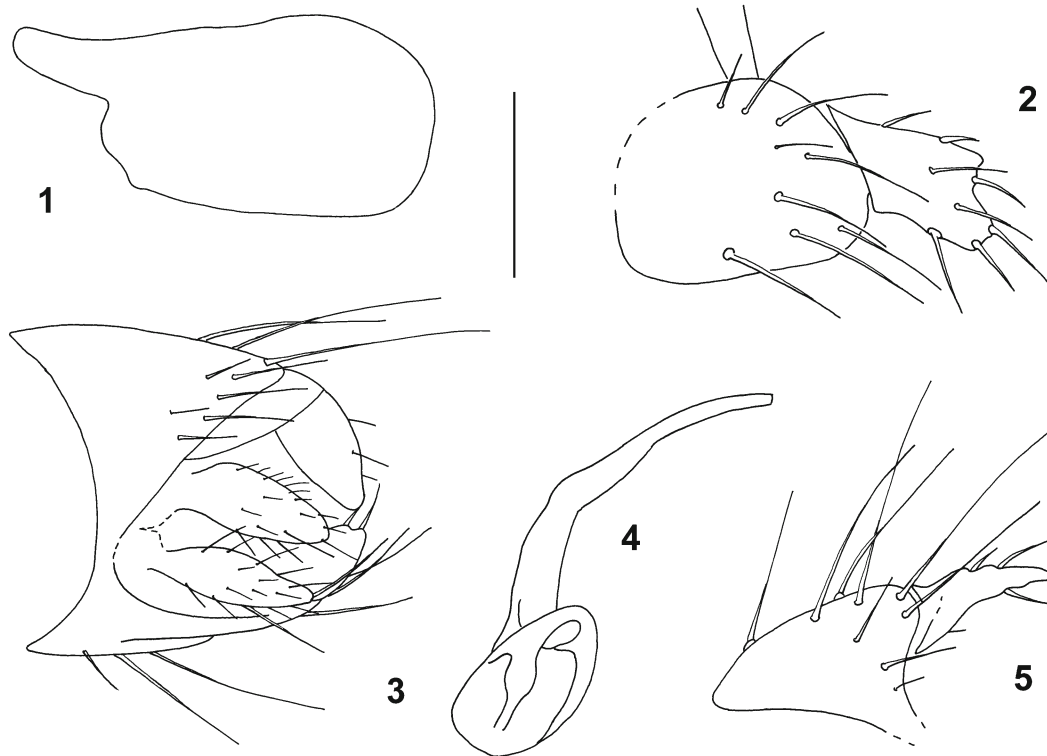
*Trichina thaya* sp. n. (Figs 1–5)

**Description. Male.** Eyes holoptic, facets on lower half of eye much smaller than on upper half. Frontal triangle just above antennae small, black, microtrichose, bare. Ocellar setae black, fine, about 0.10 mm long, prominent ocellar triangle with a pair of additional short setae. Face brownish black, microtrichose, very narrow (0.02 mm broad in the narrowest place), bare. Occiput brownish black, rather thinly microtrichose, with black setae. Antennae black, length of antennal segments (antennomeres 1 : 2 : 3; setulose part of stylus: bare part of stylus, respectively, in 0.01 mm scale) = 2 : 6–7 :

18–22 : 6–7 : 3–4, the 2<sup>nd</sup> antennomere short setose; 3<sup>rd</sup> antennomere 2.5–3.4 times as long as broad in its broadest place. Proboscis short, palpus brown with a few setae (preapical seta about 0.10 mm long). Genae very narrow.

Thorax brown with dark setae. Prothorax (except proepimeron) microtrichose. Central part of mesoscutum lustrous, lateral parts microtrichose. Microtrichose parts: front part of mesoscutum up to foremost dorsocentrals, notopleuron, scutellum and prescutellar area and lateral parts of mesoscutum up to posthumeral seta (and slightly above it) and supraalar setae. Anepisternum mostly lustrous as well as the entire katepisternum and proepimeron, front part of anepimeron and meron (lower hind part of meron thinly microtrichose). Chaetotaxy: both proepisternum and propleura with 1–2 short and fine setae; prosternum bare, 1 long and 1–2 small setae on postpronotum; about 8–10 narrowly biserial acrostichals; 5–8 uniserial dorsocentrals, ending in 1–2 long prescutellars; both acrostichals and dorsocentrals are fine and short (dorsocentrals about 0.10 mm long in middle of the rows and acrostichals slightly shorter); 1 intrahumeral; 1 posthumeral (usually no other setae laterad of dorsocentrals in presutural area); 2–3 notopleurals (sometimes 1–2 small additional setae); 1 small supraalar (some specimens with additional 1–3 small and fine setae between supraalars and prealar area; these setae including supraalar are situated on the boundary between lustrous and microtrichose areas of mesoscutum); altogether 6–8 scutellars.

Fore coxae yellow, fore femur brownish yellow, other parts of legs brown. Hind femur in several specimens brownish yellow along base. Hind tibia and hind tarsus, and in some specimens also proximal parts of all tarsi, dark brown. Legs including coxae with dark setae. Hind trochanter with fine setae only. Fore leg short setose, fore tibia slightly spindle-shaped dilated, fore basitarsus with several prominent setae ventrally. Mid



Figs 1–5. *Trichina thaya* sp. n.: 1 – hypandrium; 2 – left epandrial lamella; 3 – genitalia in dorsal view; 4 – phallus; 5 – right epandrial lamella. Scale 0.1 mm.

legs short setose. Hind femur thin (about 0.10 mm wide in the broadest place) with several long setae dorsally in basal half, hind tibia swollen, in apical part about twice as thick as the broadest diameter of hind femur, with several dorsal setae as long as diameter of tibia. Hind basitarsus narrow (about as hind femur) and short setose.

Wing brownish, stigma dark. Halter brown, calypter brown with dark fringes.

Abdomen brown, sternites and lateral parts of tergites polished to subpolished, most of tergites including entire dorsal parts velvety blackish brown microtrichose. All abdominal setae dark. Hind marginals on sides of tergites subequally long as their corresponding segments, discal setae shorter than marginals. Dorsum of tergites with shorter setae. Sternites with long setae (up to 0.30 mm long, especially on sternites 2–3). Terminalia (Figs 1–5) similar to *T. pallipes* (as figured by Chvála, 1983; Figs 255–260). Hypandrium (Fig. 1) rather broad, with short process; left surstylus (Fig. 2) short, nearly rectangular, without conspicuous process; right surstylus (Fig. 5) short, pointed apically, setose. Length of body 2.4–2.8 mm (without genitalia), wing 2.5–3.0 mm.

**Female.** Similar to male, differing as follows: eyes narrowly dichoptic, all facets subequal in size. Frons 0.03 mm broad in narrowest place and 0.20 mm long, with microtrichose central stripe and lustrous margins, bare. Areas close to lateral margins of ocellar triangle lustrous. Face 0.01 mm broad in narrowest place and 0.25 mm long.

Thorax with setae paler than in male, even large setae yellow in several specimens. Lustrous part of mesoscutum larger than in male. The boundary line between microtrichose and lustrous parts of mesoscutum: base of posthumeral seta – uppermost boundary of notopleuron – halfway between posterior notopleural seta and supraalar seta.

Legs much paler than in male, all coxae, fore and mid femur, mid tibia and basal half of hind femur yellow, proximal parts of legs brownish to brown (the boundary between yellow basal half and brown apical half of hind femur sharper than in male). Also setae on legs paler than in male, those on coxae and proximal parts of femora entirely yellow. Chaetotaxy and shape of fore and mid legs as in male. Hind tibia less swollen than in male, subequally thick in the broadest place as hind femur in its broadest place.

Wing lighter than in male with paler veins, calypter pale yellow with yellow fringes. Halter yellow.

Abdomen brown, with both yellow and dark setae which are shorter than in male (the longest setae on tergites 2–3 about 0.15 mm long). Length of body: 2.2–3.0 mm, wing 2.6–2.9 mm.

**Materials examined. Holotype – Male:** Czech Republic, Podyji National Park, Fládnická chata, mixed forest, 360 m a.s.l., 48°48'45" N, 15°58'02" E, Malaise trap, 21.V.–12.VI.2004, leg. M. Barták et Š. Kubík. The holotype is deposited in the collection of the Czech University of Life Sciences in Prague (CULSP). **Paratypes:** 4 ♂♂, 1 ♀, same data as the Holotype; 3 ♂♂, same locality as the Holotype, 29.IV.–21.V.2004; 1 ♂, Podyji National Park, Hardegg – vyhlídka, mixed forest, 48°51'30" N, 15°51'35" E,

420 m a.s.l., 21.V.–12.VI.2004; 1 ♂, Podyjí NP, Liščí skála, Quercetum, 48°49'52" N, 15°56'35" E, 410 m a.s.l., 29.IV.–21.V.2004; 1 ♂, 1 ♀, same locality, 21.V.–12.VI.2004; 1 ♂, Podyjí NP, Braitava – letohrádek, mixed forest, 48°52'32" N, 15°50'05" E, 530 m a.s.l., 29.IV.–21.V.2004; 7 ♀♀, same locality, 13.V.–1.VI.2002; 2 ♀♀, same locality, 1.–26.VI.2002; 1 ♀, same locality, 26.–28.VI.2002; 1 ♂, Podyjí NP, Pod ledovými slujemi, lowland wood, 48°53'09" N, 15°50'29" E, 290 m a.s.l., 26.III.–13.V.2002; 1 ♀, same locality, 12.–14.V.2002; 1 ♀, Podyjí NP, Vraní skála, deciduous wood, 48°51'02" N, 15°53'37" E, 20.V.–5.VI.2003; 1 ♀, Podyjí NP, Zadní Hamry, deciduous wood, 48°53'18" N, 15°49'54" E, 320 m a.s.l., 31.V.–2.VI.2002; 1 ♀, Podyjí NP, Horní Břečkov, wetland near pond, 48°53'28" N, 15°52'32" E, 400 m a.s.l., 24.–27.V.2001; 2 ♂♂, 4 ♀♀, Podyjí NP, Nad Šobesem, forest-steppe, 48°49'03" N, 15°58'39" E, 340 m a.s.l., 3.V.–2.VI.2003; 1 ♂, Podyjí NP, Terasy, mixed wood, 48°53'22" N, 15°50'18" E, 460 m a.s.l., 3.V.–2.VI.2003; 1 ♀, Podyjí NP, Hnanice, damp forest, 48°48'12" N, 15°58'22" E, 300 m a.s.l., 27.V.–26.VI.2001. Most specimens were collected by Malaise trap, only three females by yellow pan water traps and four females by emergence traps. Paratypes depository: CULSP.

**Dates of occurrence.** August – May.

**Distribution.** Czech Republic (South Moravia).

**Derivatio nominis.** The species is named after the old name of Dyje River (Thaya).

**Differential diagnosis.** *Trichina thaya* sp. n. may be differentiated from other European species of *Trichina* by characters given in the key. Male with short third antennomere and lacking ventral spine on hind trochanter is similar to *T. opaca*; however, the latter has the whole mesoscutum microtrichose and different genitalia. Female of *Trichina thaya* sp. n. has (similarly as females of *T. opaca* and *T. elongata*) microtrichose anterior part of mesoscutum; however, microtrichosity along lateral parts of mesoscutum does not reach supraalar seta. Moreover, proximal parts of legs are yellow as in *T. elongata*, but third antennomere is short as in *T. opaca*. The shape of male terminalia, that is similar to *T. pallipes*, supports congenericity of *T. pallipes* with remaining *Trichina* species as proposed by Chvála (1983), synonymizing the genus *Oedaleopsis* Tuomikoski, 1959 with *Trichina*.

**Key to European species of *Trichina***

- 1 Antennal style laterally compressed and very broad, as deep as tip of third antennomere.... *T. pallipes*
- Antennal style slender, seta-like..... 2
- 2 (1) **Male**..... 3
- **Female** (of *T. unilobata* unknown)..... 8
- 3 (2) The entire thorax polished, even front part just behind neck without microtrichiae..... *T. clavipes*
- At least front part of mesoscutum microtrichose.. 4
- 4 (3) The whole of mesoscutum microtrichose.....
- ..... *T. opaca*

- The central parts of mesoscutum polished, without microtrichiae..... 5
- 5 (4) Hind trochanter without any posterior to ventral spine-like setae. 6 or more scutellar setae. Left surstylus nearly rectangular..... *T. thaya* sp. n.
- Hind trochanter with 1 or more posterior to ventral spine-like setae. 4 scutellar setae (exceptionally with additional smaller setae). Left surstylus U-shaped (*T. bilobata*) or C-shaped (*T. unilobata*, *T. elongata*)..... 6
- 6 (5) Postpronotum polished and this polished area is connected by polished streak with polished disc of mesoscutum (posthumeral seta inserted on the polished part of mesoscutum). Left surstylus broadly bifurcated, forming two subequally long processes..
- ..... *T. bilobata*
- Postpronotum and area of mesoscutum just above postpronotum microtrichose (posthumeral seta inserted on the microtrichose part of mesoscutum). Left surstylus with one process long and the second small..... 7
- 7 (6) Face broader (in the narrowest part about as broad as three ommatidia combined). Length of 3<sup>rd</sup> antennomere: length of style = 1.6 (range unknown)
- ..... *T. unilobata*
- Face narrow (in the narrowest part about as broad as diameter of a single ommatidium). Length of 3<sup>rd</sup> antennomere: length of style usually more than 2.3
- ..... *T. elongata*
- 8 (3) Front part of mesoscutum polished black, without microtrichose areas..... 9
- Front part of mesoscutum microtrichose just behind neck..... 10
- 9 (8) Notopleural setae inserted on the boundary line between polished and microtrichose areas. Both frons and face approximately equally wide. Front part of postpronotum polished. Meron entirely polished ...
- ..... *T. clavipes*
- Notopleural setae inserted on the microtrichose area. Frons twice wider than face. Front part of postpronotum microtrichose. Meron microtrichose on lower hind part..... *T. bilobata*
- 10 (8) The boundary line between polished and microtrichose parts of mesoscutum situated half way between dorsal notopleural and supraalar setae. Proximal parts of legs including coxae yellow .....
- ..... *T. thaya* sp. n.
- The boundary line between polished and microtrichose parts of mesoscutum situated close to supraalar seta. Proximal parts of legs yellow to dark .. 11
- 11 (10) The third antennomere usually less than 3.2 times as long as broad. Usually 3 or more scutellars at least on one side of scutellum. Proximal parts of legs yellowish brown to brown..... *T. opaca*
- The third antennomere usually more than 3.4 times as long as broad. Usually 2 scutellars on each side of scutellum. Proximal parts of legs yellow .....
- ..... *T. elongata*

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