

Description of a new species of *Thricops* Rondani, 1856 (Diptera, Muscidae) from Norway with an update of the number of the worldwide known species of the genus

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Thricops norwegicus sp. n. is described from Norway and compared to similar species of the genus. With this publication the number of *Thricops*-species recorded from Norway is raised to twenty, and to thirty-one for the European part of the Palaearctic Region. In total 53 species are known worldwide, they are compiled in a table. The name *Thricops bakusanus* (Shinonaga, 1971) does not stand for a valid species, as erroneously listed by some websites but is the misspelled name of the valid species *Thricops hakusanus* (Shinonaga & Kano, 1971).

Key words: Diptera, Muscidae, *Thricops norwegicus*, new species, Norway, *Thricops* species world-wide.

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Introduction

The examination of non-identified specimens of the Muscidae collection of the Institute of Biodiversity and Ecosystem Research (IBER), Bulgarian Academy of Sciences, Sofia revealed a single female specimen of the genus *Thricops* Rondani, 1856, collected 1968 in Norway. Due to a combination of taxonomic characteristics hitherto not known from the genus, the specimen could not be assigned to any particular species. Therefore, the female is regarded as a representative of a new species, which is described below as *Thricops norwegicus* sp. n. Since no comprehensible up-to-date listing of the world-known species of the genus was found in publicly available sources, the species of *Thricops* treated in the literature as valid species are compiled in tabular form.

Material and methods

Keys to the Muscidae of the Palaearctic Region (Hennig 1964) and to the Muscidae of Central Europe (Gregor *et al.* 2002, 2016) were used for the examination of the material of the muscid collection of IBER, and the review on *Thricops*-species of the world by Savage (2003) was applied for the identification of the species of this genus. Standard terminologies as used in the Manual of Central European Muscidae (Gregor *et al.* 2016) are also predominantly used for the description. External morphological features were examined using a ZEISS Stemi 2000-C stereomicroscope, for illustrations an AxioCam ERc5s camera and for further processing Helicon Focus 6 and Adobe Photoshop CS2 have been applied. Body length was measured in millimeters (mm).

Description

Thrichops norwegicus sp. nov.

Material examined. Female holotype. The specimen is on the whole well preserved. The locality label reads “N: Hardangervidda, Viveliveigdalen, Eidfjord, 23.7.1968, leg. T. Nielsen”. The holotype is located at the entomological collection of IBER, Sofia.

Description. *Head.* Ground-colour dark, at some points of view greyish dusted. Eyes virtually bare, few barely visible microscopic hairs are present. Shortest distance between eye-margins about 3.4 times the width of postpedicel. Width of fronto-orbital plate at level of anterior tip of frontal triangle about twice as broad as diameter of anterior ocellus. Frontal vitta almost parallel shaped and nearly twice as broad as the distance between outer margins of posterior ocelli. Anterior tip of frontal triangle and anterior orbital seta at about the same level. Parafacial almost parallel sided, only very little narrowing at the lower end, at level of insertion of arista into postpedicel about twice as broad as diameter of anterior ocellus. In profile facial edge in line

with profrons. Genal depth below lowest eye-margin approximately about equal to width of postpedicel. When viewed from anterior frontal vitta, ocellar tubercle, fronto-orbital plate, face, parafacial and gena dull dark and depending on light angle more or less greyish dusted, when viewed from anterodorsal or more lateral frontal vitta velvety dark brown, frontal triangle and ocellar tubercle more or less concolorous with frontal vitta. Antennal segments dark brown; postpedicel conspicuously short and broadened, almost roundish and barely 1,5 times as long as broad (Figure 1A) and about 1,7 times as long as pedicel. Arista approximately almost 2,5 times as long as length of postpedicel, longest arista-hairs about 0.3 times as long as width of postpedicel. Inner vertical setae long and strong, ocellar setae almost as long as outer vertical setae, interfrontal setae or corresponding scars absent. Fronto-orbital plate at the anterior half of frons with very few tiny interstitial hairs and two frontal setae, the anterior one distinctly stronger and about twice as long as the smaller upper seta; the upper part of frons with one strong proclinate orbital seta and closer to the frontal triangle two well developed

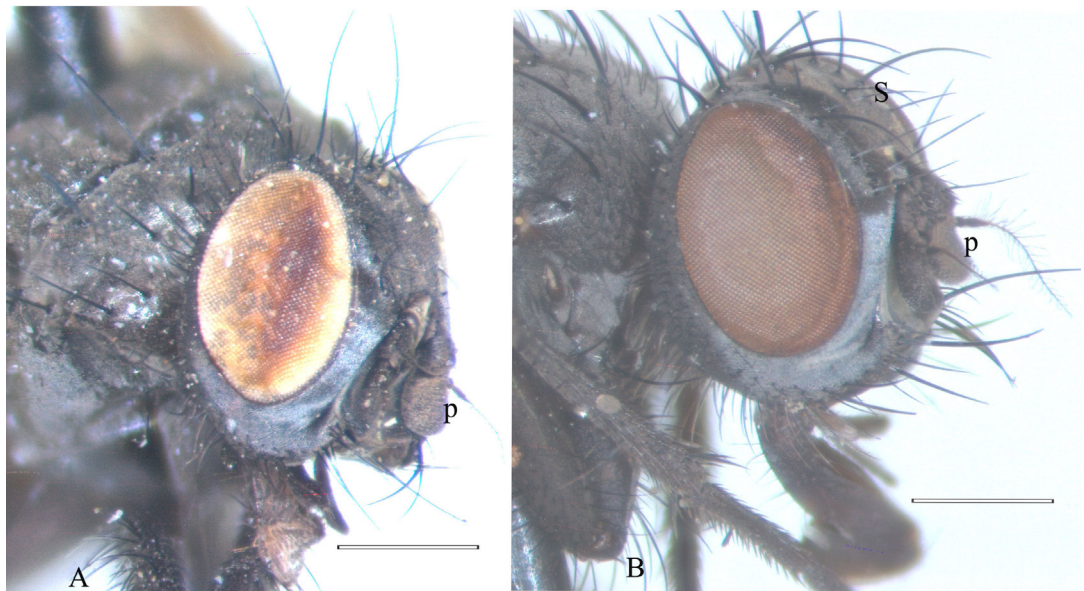


FIGURE 1. Lateral view of head of (A) *Thrichops norwegicus* sp. n. (female holotype) with conspicuously short and somewhat bulbous postpedicel (p) and without interfrontal setae; (B) of a female *Thrichops nigritellus* (Zetterstedt, 1838) with short but not conspicuously bulbous postpedicel (p) and crossed interfrontal setae (S). (Bar = 0,5 mm).

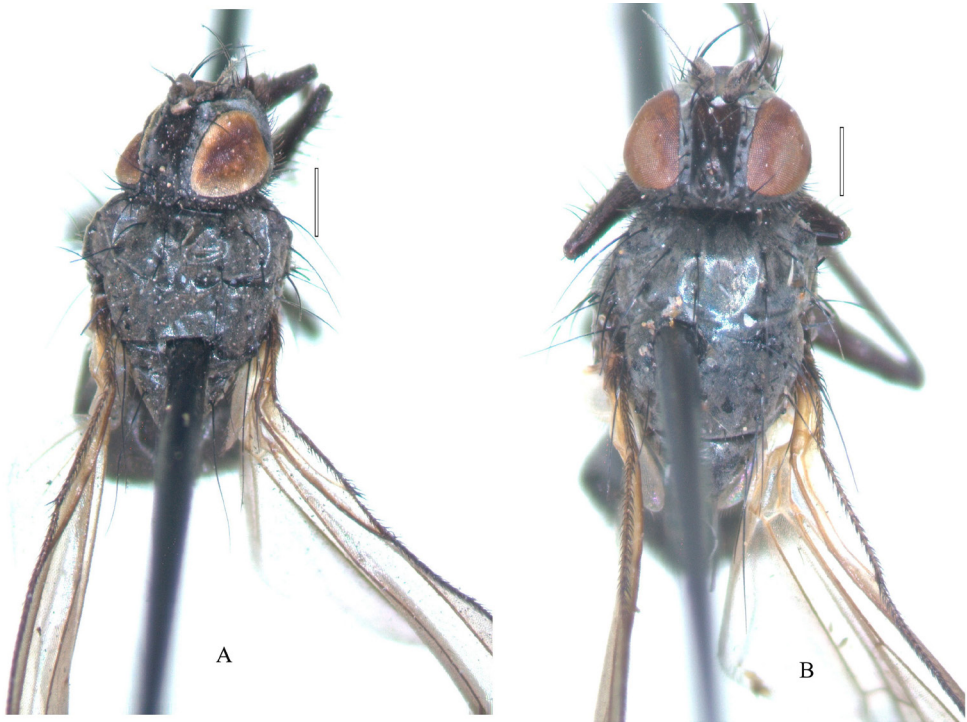


FIGURE 2. Dorsal view of thorax of *Thricops norwegicus* sp. n. (female holotype) predominantly brownish dusted (A) and of the female *Thricops nigritellus* (Zetterstedt, 1838), silver-grey dusted (B). The insertions of the interfrontal setae at the level of the anterior tip of ocellar triangle (two small white spots) are clearly visible in *T. nigritellus*, but they are lacking in *T. norwegicus*. (Bar = 0,5 mm).

laterocline orbital setae, the upper one equally long and strong as the proclinate seta, the anterior one somewhat shorter. Vibrissal setae long and strong, but only slightly longer than the longest peristomal setae. Genal surface below eyes bare, lower margin of gena and post-genal and post-occipital surface covered with black setulose hair. Proboscis short, prementum somewhat bulbous, brown and depending on point of view slightly shining or matt and dusted, labella about 1,5 times as broad as diameter of proboscis. Palpus slender, brown, somewhat longer than prementum.

Thorax. Ground-colour uniformly brown to dark brown. Mesonotum, scutellum and pleura depending on point of view shining brownish or somewhat brownish-grey dusted (Figure 1 B), mesonotum without any specific pattern. Anterior spiracle brown; posterior spiracle brownish. Mesonotum sparsely haired, the ground hair short setulose, some parts of pleura with some longer hairs. Dorsocentral setae 2 + 3; since the staging

needle is penetrating the body just at the level where usually the last postsutural acrostichals are inserted the information regarding acrostichals is 0 + 0-1(?), the presutural acrostichal hairs are about equally short in about four irregular rows; two postpronotal setae, the outer seta about 1,5 times as long as the inner one; two notopleural setae, anterior one longer than posterior seta, notopleuron with very few small hairs at basis of posterior seta; prealar seta at least as long as posterior notopleural seta; two intra-alar setae. Prosternum, proepimeral area, anepimeron, meron bare, katepimeron with one or two small setulae that are hard to see. Katepisternum with 1+3 katepisternal setae, the upper posterior setae distinctly stronger than the lower ones. Anepisternum at posterior margin with a row of approximately five long but not very strong setae varying in length and with few interstitial hairs, barely longer than ground-hair. Scutellum with conspicuously long apical and slightly

shorter lateral setae, basal seta about one third as long as lateral seta and preapical seta barely distinguishable from the longer surrounding hairs; lateral surface with setulae; ventral surface bare.

Wing. Membrane greyish hyaline, cross-veins and surrounding membrane not infuscate. Tegula and basicosta brown to dark, veins at basis of wing yellowish getting more brownish distally. Costal spine distinct, almost as long as cross-vein r-m. Radial node dorsally and ventrally bare. Vein M1 straight, at distal third of wing almost parallel with vein R4+5. Cross-vein r-m slightly apical of the point where vein R1 enters costa, distal cross-vein dm-cu almost straight and in a right angle to vein M1. Anal vein A1 not abbreviated. Calypters whitish transparent with a very weak yellowish tinge, lower calypter slightly longer than upper calypter. Haltere completely yellow, basis of stem more dark yellow.

Legs all dark brown, depending on point of view more shining or dusted. Claws and pulvilli normally developed but rather short. Posterior surface of hind coxa with at least two strong setulae. Fore femur with complete rows of posterodorsal, posterior and posteroventral setae, the setae of the upper two rows about as long as depth of femur, those of the posteroventral row slightly longer. Fore tibia without a posterior seta. Mid femur with a complete row of anterodorsal setae and preapically two posterodorsal setae. Mid tibia with one anterodorsal and two posterior setae, distinctly longer than diameter of tibia. Hind femur with complete row of anterodorsals and about four anteroventrals at apical third, preapically two posterior to dorsal setae. Hind tibia with one anterodorsal seta about twice as long as diameter of tibia and three or four anteroventrals, distinctly longer than the diameter of tibia, at apical third a posterodorsal seta, almost three times as long as diameter of tibia.

Abdomen. Shape of abdomen elongate and slender, but not conspicuously slim. Without any specific pattern, brown and shining, only at some points of view weakly brownish-grey dusted. Tergites three and four with rows of marginals, tergite five with weak marginals and few stronger discal setae. Ventral parts of tergites and sternites brownish and less shining; sternite 1 bare.

Female genitalia, not examined.

Length of body 4 mm, length of wings 4,3 mm.

Male: not known.

Etymology. The name of the new species *norwegicus* is an adjective and derives, somewhat modified, from Norway, the country, where the fly had been collected.

Diagnosis. The major characteristic of *Thricops norwegicus* sp. n., the absence of interfrontal setae, leads in the keys to *Thricops* provided by Hennig (1964), Gregor et al. (2016) and Savage (2003) to *Thricops beckeri* (Pokorný, 1893). But the females of *T. beckeri* are characterized by a conspicuously slender abdomen, densely greyish dusted thorax and abdomen, katepimeron without setulae, yellowish calypters and hind tibia according to Savage (2003) with two or three anterodorsal setae, three anteroventrals and two posterodorsals, and according to Gregor et al. (2016) with two or three anterodorsals, one to three anteroventrals and posterodorsals. The female of *T. norwegicus*, however, is marked by slender abdomen but not as slim as in *T. beckeri*, thorax and abdomen predominantly shining brown, only at few points of view brownish-grey dusted, katepimeron with one or two small setulae very hard to see, whitish calypters and hind tibia with one anterodorsal only, three or four anteroventrals and one posterodorsal seta.

Hennig (1962) reports that the female of *T. beckeri* in muscid collections is often confused with the females of *Thricops nigrifellus* (Zetterstedt, 1838) and *Thricops furcatus* (Stein, 1916) and he stresses that interfrontal setae and posteroventral setae of fore and mid tibiae are absent in *T. beckeri*. *Thricops norwegicus* and *T. nigrifellus* are also without posteroventral setae on the anterior tibiae and both species have hairs present on the katepimeron, one or two setulae hard to see at *T. norwegicus*, and longer setulae clearly visible at *T. nigrifellus*. But *T. norwegicus* is characterized by the absence of interfrontal setae, by a very short and somewhat bulbous postpedicel barely 1,5 times as long as wide (Figure 1A) and longest arista hairs distinctly shorter than half the width of postpedicel, only two frontal setae of which the upper one is weaker

and only about half as long as the lower seta, the predominantly brownish shining body (Figure 2A), only weakly brownish-grey dusted at some points of view and without any dark pattern. Whereas *T. nigritellus* has distinct interfrontals (Figure 1B), the postpedicel is almost twice as long as wide, the longest arista hairs are clearly longer than half the width of postpedicel and there are usually four (three to five) well developed frontal setae, and depending on quality and angle of light the body is usually more or less densely silver-grey dusted (Figure 2B) with short undusted vittae on the anterior half of mesonotum at some points of view. *Thricops furcatus* is also characterized by the presence of interfrontal setae and additionally has a posteroventral seta on the anterior tibia and anteroventral and posteroventral setae on the middle tibia. All these setae are absent in *T. norwegicus*.

Discussion

Species of the genus *Thricops* inhabit preferably the Holarctic Region and several species are found only in mountainous biotopes. Although the genus is rather small with a total of about fifty valid species, it was not possible to find a complete and comprehensible listing of the worldwide known species of the genus in publicly accessible sources. The revision of the genus *Thricops* by Savage in 2003 (Table 1) revealed 44 species and the two subspecies, *Thricops lividiventris plumbeus* (Hennig, 1962) and *Thricops rufisquamus himalayensis* Pont, 1970. Savage synonymized *Thricops medius* (Stein, 1920) with *Thricops villicrura* (Coquillett, 1900), transferred *Thricops fengi* (Fan, 1965) back to the genus *Azelia* Robineau-Desvoidy, 1830 and *Thricops ilamensis* Shinonaga, 1994 to the genus *Phaonia* Robineau-Desvoidy, 1830 respectively. In addition, it was pointed out the intention to synonymize *Thricops flavidus* Xue, 1990 with *Piezura flava* (Xue, 1938). Furthermore it was questioned whether *Thricops gregori* Ceianu, 1998 is a valid species, that is also why this species is not considered in the review. Thus, the compilation provided by Savage in 2003 includes 45 valid *Thricops*-

species worldwide, two of which are subspecies.

Vikhrev (2013) referred to 45 known valid species of the genus in the publication on a new *Thricops*-species from the Altai Mountains. However, it is not clear what species underlie this statement, either the 43 species and the two subspecies or the 43 species including the two subspecies reported by Savage and in addition the two species described by Vikhrev in Vikhrev & Sorokina (2009).

The compilation of *Thricops*-species of the website of Systema dipterorum (version 2.2, March 2019) edited by Evenhuis & Pape (2019) contains 49 names of species (Table 1) of which *Thricops flavidus* and *Thricops ilamensis* are correctly marked as synonym of *Piezura flava* or as transferred from *Thricops* to *Phaonia*, respectively. From the remaining 47 names which are classified in the website as valid *Thricops*-species, the following four are listed twice: *Thricops diannae* with an erroneous spelling of *T. dianae* Savage 2003 and *Thricops diaphanus* (Wiedemann, 1817), *Thricops hirtulus* (Zetterstedt, 1838) and *Thricops innocuus* (Zetterstedt, 1838). Thus, the number of listed valid species is reduced to 43. “*Anthomyia semicinereus* Wiedemann OD” is mentioned by Systema dipterorum under *Lasiothricops* Skidmore, 1985 (subgenus of *Thricops*) as type-species, but it is not included in the list of *Thricops*-species, although it is well-known and accepted as *Thricops semicinereus* (Wiedemann, 1817).

The list of *Thricops*-species in the website of Catalogue of Life, monthly edition March 2019 (Roskov *et al.* 2019) is structured more clearly, but is also not complete. In total 47 species are named (Table 1). Similar to Systema dipterorum, the two subspecies mentioned by Savage (2003) are treated as separate species. The names of 46 species are classified as “accepted” and only *T. flavidus* is marked as synonym. However, *Thricops dianae* is listed twice, due to erroneous spelling. *Thricops tirolensis* (Rondani, 1877), which was classified by Pont (1986) as doubtful species and is a synonym of *Thricops longipes* (Zetterstedt, 1845) in the revision of Savage, is still listed as accepted name by the website, which cites Systema dipterorum as source for this

information. However, the species could not be found there.

The compilations of the worldwide known *Trichops* species discussed above contain two very similar names, namely *Trichops hakusanus* (Shinonaga & Kano, 1971: 109) listed by Savage but not by the websites, and *Trichops bakusanus* (Shinonaga, 1971:113) considered by the websites but not by Savage. The type locality is for both names Mt. Hakusan, Ishikawa, Honshu, Japan (Savage 2003, Evenhuis & Pape 2019). The two names are also listed in the compilation of *Trichops*-species of the website of Global Names Index beta provided by GBIF (Global Biodiversity Information Facility) and EOL (Encyclopedia of Life). However, it is apparent from the original publication by Shinonaga & Kano (1971) that Savage evidently refers to the key to the *Trichops*-species on page 109 of the publication by Shinonaga and Kano, where the new species *T. hakusanus* is for the first time partially characterized; Systema dipterorum and Catalogue of Life refer to the original description of the same species on page 113 of the same publication. But the description of the species is ascribed in the two websites only to Shinonaga and not to Shinonaga and Kano, which would have been correct. And instead of naming the species with the correct name *T. hakusanus*, the name is misspelled. Thus, *T. bakusanus* is not a separate species, and the list of valid species of both sites is reduced to 43 and 42 species respectively (Table 1).

Systema dipterorum and Catalogue of Life indicate that their websites have been updated in the first quarter of 2019, but the latest species mentioned in the compilations are the new species described by Savage in 2003. The question arises as to why *Trichops simplex* (Wiedemann, 1817), a widely and numerously distributed species of the genus, is not included and why the *Trichops*-species described after 2003 have not been considered in the latest updates. *Trichops coronaedeagus* Feng, 2008, *Trichops curvitiba* Ma, Xing & Deng, 2008, *Trichops dawkinsi* and *Trichops tomkovichi* both described by Vikhrev in Vikhrev & Sorokinova (2009), *Trichops kosterini* Vikhrev, 2013 and the latest one, *Trichops iliata*

described by Pont in 2018 are not mentioned in the websites updated early 2019.

The number of valid species reported by Savage (2003) and the updated sites of Systema dipterorum and Catalogue of Life together with the seven species including *Trichops norwegicus* sp. n. described after 2003, sum up to a total of 53 *Trichops* species worldwide. The species are compiled in Table 1.

Pont listed in 1986 twenty-nine *Trichops*-species in the catalogue of the Palaearctic Muscidae. Since then nine other species (Table 1) and *Trichops norwegicus* have been described from the region raising the number to 39. The *Trichops*-fauna of the European part of the Palaearctic Region consists of 26 species according to the information provided by version 2017.06 of the website of Fauna Europaea (Pont 2013). The number of the version “2017.06” gives the impression that the content of the website has been actualized, but the latest species listed was described in 1988. *Trichops gregori* collected in Romania and described by Ceianu in 1998 has not been considered yet by one of the various updates of the website and the species is not mentioned from Europe until today, although it is listed as valid species by Systema dipterorum and Catalogue of Life, and a formal synonymization of *T. gregori* was not found in literature. Also not included in the compilation of Fauna Europaea are *Trichops ponti* described from Sweden by Savage in 2003 and two species described by Vikhrev in 2009 from the European Part of Russia (Table 1). Thus, there should be at least 30 species reported by Fauna Europaea from the European countries and with *T. norwegicus* the number is raised to 31.

Regarding the number of *Trichops*-species reported from Norway 19 species were counted for the country at the actual website of Fauna Europaea (Pont 2013). With the exception of *Trichops rufisquamus* (Schnabl), all other 18 species were reported by Rognes from Norway as early as 1986. Together with *T. norwegicus* from Eidfjord twenty of the thirty-one *Trichops*-species listed from Europe are known from Norway. Updated compilations of the *Trichops*-species known from the Palaearctic Region, the European part and of Norway are also available in Table 1.

TABLE 1. Worldwide known *Thricops*-species listed by Savage (2003), Syst. = Systema dipterorum (Evenhuis & Pape 2019) and CoL = Catalogue of Life (Roskov *et al.* 2019). Species reported by CPM = Catalogue of Palaearctic Muscidae (Pont 1986), FE/E = Fauna Europaea/Europe (Pont 2013) and FE/N = Fauna Europaea/Norway (Pont 2013), respectively, with a summary of the numbers of so far known valid species of the various regions. Abbreviations: No = running number of valid species; Pal. = Palaearctic Region; EU = European part of Palaearctic Region; N = Norway; W = World.

No	Valid <i>Thricops</i> species listed by	Savage	Syst.	CoL	CPM	FE/E	FE/N
1	<i>T. aculeipes</i> (Zetterstedt, 1838)	+	+	+	+	+	+
2	<i>T. aduncus</i> Savage, 2003	+	+	+			
3	<i>T. albibasalis</i> (Zetterstedt, 1849)	+	+	+	+	+	+
4	<i>T. angelorum</i> Savage, 2003	+	+	+			
5	<i>T. beckeri</i> (Pokorny, 1893)	+	+	+	+	+	
6	<i>T. bukowskii</i> (Ringdahl, 1934)	+	+	+	+	+	
7	<i>T. calcaratus</i> (Portschinsky, 1881)	+	+	+	+	+	
8	<i>T. coquilletti</i> (Malloch, 1920)	+	+	+	+	+	
9	<i>T. culminum</i> (Pokorny, 1889)	+	+	+	+	+	
10	<i>T. cunctans</i> (Meigen, 1826)	+	+	+	+	+	+
11	<i>T. diana</i> Savage, 2003	+	+	+			
12	<i>T. diaphanus</i> (Wiedemann, 1817)	+	+	+	+	+	+
13	<i>T. fimbriatus</i> (Coquillett, 1904)	+	+	+			
14	<i>T. foveolatus</i> (Zetterstedt, 1845)	+	+	+	+	+	+
15	<i>T. furcatus</i> (Stein, 1916)	+	+	+	+	+	+
16	<i>T. genarum</i> (Zetterstedt, 1838)	+	+	+	+	+	+
17	<i>T. gregori</i> Ceianu, 1998		+	+			
18	<i>T. hakusanus</i> (Shinonaga & Kano, 1971)	+			+		
19	<i>T. himalayensis</i> Pont, 1976	+ ^[1]	+	+			
20	<i>T. hirtulus</i> (Zetterstedt, 1838)	+	+	+	+	+	+
21	<i>T. ineptus</i> (Stein, 1920)	+	+	+			
22	<i>T. innocuus</i> (Zetterstedt, 1838)	+	+	+	+	+	+
23	<i>T. jiyaoi</i> Feng, 2000	+	+	+			
24	<i>T. lividiventris</i> (Zetterstedt, 1845)	+	+	+	+	+	+
25	<i>T. longipes</i> (Zetterstedt, 1845)	+	+	+	+	+	+
26	<i>T. nepalensis</i> Pont, 1976	+	+	+			
27	<i>T. nigriabdominalis</i> Savage, 2003	+	+	+			
28	<i>T. nigrifrons</i> (Rob.-Desv., 1830)	+	+	+	+	+	+
29	<i>T. nigritellus</i> (Zetterstedt, 1838)	+	+	+	+	+	+
30	<i>T. plumbeus</i> (Hennig, 1962)	+ ^[2]	+	+	+ ^[2]		
31	<i>T. ponti</i> Savage, 2003	+	+	+			
32	<i>T. rostratus</i> (Meade, 1882)	+	+	+	+	+	+

TABLE 1. continued

No	Valid <i>Trichops</i> species listed by	Savage	Syst.	CoL	CPM	FE/E	FE/N
33	<i>T. rufisquamus</i> (Schnabl, 1915)	+	+	+	+	+	+
34	<i>T. semicinereus</i> (Wiedemann, 1817)	+		+	+	+	+
35	<i>T. separ</i> (Zetterstedt, 1845)	+	+	+	+	+	+
36	<i>T. septentrionalis</i> (Stein, 1898)	+	+	+	+		
37	<i>T. simplex</i> (Wiedemann, 1817)	+			+	+	+
38	<i>T. spiniger</i> (Stein, 1904)	+	+	+	+		
39	<i>T. sudeticus</i> (Schnabl, 1888)	+	+	+	+	+	+
40	<i>T. tarsalis</i> (Walker, 1853)	+	+	+			
41	<i>T. tatricus</i> Gregor, 1988	+	+	+		+	
42	<i>T. thudamensis</i> Shinonaga, 1994	+	+	+			
43	<i>T. tuberculatus</i> Deng, Mao & Feng, 1995	+					
44	<i>T. vaderi</i> Savage, 2003	+	+	+			
45	<i>T. villicrura</i> (Coquillett, 1900)	+	+	+			
46	<i>T. villosus</i> (Hendel, 1903)	+	+	+	+	+	
	Number of valid species listed	45	42	43	29	26	19
Erroneously listed species							
	<i>T. bakusanus</i> (Shinonaga, 1971)		+ ^[3]	+ ^[3]			
	<i>T. diannae</i> Savage, 2003		+ ^[4]	+ ^[4]			
	<i>T. diaphanus</i> (Wiedemann, 1817)		+ ^[5]				
	<i>T. flavidus</i> Xue, 1990	+ ^[6]	+ ^[6]	+ ^[6]			
	<i>T. hirtulus</i> (Zetterstedt, 1838)		+ ^[5]				
	<i>T. ilamensis</i> Shinonaga, 1944		+ ^[7]				
	<i>T. innocuus</i> (Zetterstedt, 1838)		+ ^[5]				
	<i>T. tirolensis</i> (Rondani, 1877)			+ ^[8]			
Valid species of worldwide compilations, not included in regional lists		Recorded from		To be added to			
	<i>T. gregori</i> Ceianu, 1998	Romania		Pal. EU			
	<i>T. nigriabdominalis</i> Savage, 2003	Turkey		Pal.			
	<i>T. ponti</i> Savage, 2003	Sweden		Pal., EU			
	<i>T. tatricus</i> Gregor, 1988	Slovakia, France		Pal.			
	<i>T. vaderi</i> Savage, 2003	Turkey, Georgia, Armenia		Pal.			
Valid species, not included in compilations		Recorded from		To be added to			
47	<i>T. coronaedeagus</i> Feng, 2008	China (Sichuan)		W			
48	<i>T. curvittibia</i> Ma, Xing & Deng, 2008	China (Sichuan)		W			
49	<i>T. dawkinsi</i> Vikhrev, 2009	European part of Russia		W, Pal., EU			

TABLE 1. continued

	Valid species, not included in compilations	Recorded from	To be added to	
50	<i>T. iliata</i> Pont, 2018	Armenia	W, Pal.	
51	<i>T. kosterini</i> Vikhrev, 2013	Kazakhstan	W, Pal.	
52	<i>T. norwegicus</i> sp. n.	Norway	W, Pal., EU, N	
53	<i>T. tomkovichi</i> Vikhrev, 2009	European part of Russia	W, Pal., EU	
Total number of currently known valid species				
	World	Palearctic	EU	Norway
	53	39 ^[a]	31 ^[b]	20

Notes: ^[1] = *T. himalayensis* is treated by Savage as subspecies of *T. rufisquamus* and as separate species by Systema dipterorum and Catalogue of Life; ^[2] = *T. plumbeus* is treated by Pont and by Savage as subspecies of *T. lividiventris* but is listed as separate species by Systema dipterorum and Catalogue of Life; ^[3] = *T. bakusanus* is misspelling of *T. hakusanus* and no valid species; ^[4] = due to misspelling of *T. diana*, listed twice as valid species; ^[5] = *T. diaphanus*, *T. hirtulus* and *T. innocuus* are erroneously listed twice as valid species; ^[6] = *T. flavidus* is listed as *Thricops* but was corrected as synonym of *Piezura flava* (Xue, 1938); ^[7] = *T. ilamensis* is still listed as valid species although it has been transferred to *Phaonia*; ^[8] = *T. tirolensis* is still treated as valid species although it is synonym of *T. longipes*. ^[a] = The total of 39 comprises 29 species reported by Pont (1986) and 10 species including *T. norwegicus* that have been described later than 1986; ^[b] = The total of 31 species comprises 26 species reported by Pont (2013), four species which have been described in the period between 1998 and 2009 but have not been considered by Fauna Europaea and the newly described *T. norwegicus*.

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