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ON THE TAXONOMIC REVISION OF THE GENUS *TEPHRITIS* (DIPTERA, TEPHRITIDAE): NEW SYNONYMY

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On the Taxonomic Revision of the Genus *Tephritis* (Diptera, Tephritidae): New Synonymy. Korneyev, S. V. — While revising the Western Palaearctic species of *Tephritis*, the synonymy is revealed as follows: *T. conyzifoliae* Merz, 1992 = *T. academica* Bassov & Tolstoguzova, 1994, **syn. n.** = *T. nartshukovi* Bassov & Tolstoguzova, 1994, **syn. n.** = *T. epicrepis* Shcherbakov, 2001, **syn. n.** *Tephritis angustipennis* (Loew, 1844) is shown to be the senior synonym of *T. ptarmicae* Hering, 1935, **syn. n.** Examination of the holotype *Tephritis kukunoria* Hendel, 1927 shows it to belong in *Trupanea* Schrank, 1795, and the following synonymy is established: *Trupanea kukunoria* (Hendel, 1927), **comb. n.** = *Trupanea pterostigma* Wang, 1996, **syn. n.** With new records from Kazakhstan and Kyrgyzstan, *T. conyzifoliae* is shown to be a widespread species with distribution from West Europe to Siberia. *T. angustipennis* is recorded from Ukraine for the first time. Lectotypes of *T. angustipennis* (Loew, 1844) and *T. ptarmicae* Hering, 1935 are designated.

Key words: Diptera, Tephritidae, *Tephritis*, *Trupanea*, synonymy, lectotype, distribution, host plants.

Introduction

Tephritis Latreille, 1804 is the largest genus of the fruit flies in the Palearctic Region and sixth largest in the world, with over 160 described species. It occurs mostly in the Holarctics and, to the lesser degree, in the Afrotropical, Oriental, and Australasian Regions (Norrbon et al., 1999). Flies of this genus are widespread in most climatic zones and altitudes, except tundra, tropics and polar deserts. Larvae of *Tephritis* species usually feed in flower heads of asteraceous plants of the tribes Anthemideae, Astreae, Cardueae, Cichorieae, Inuleae, and Senecioneae.

While revising the Western Palaearctic species of *Tephritis*, study of type material and literature revealed previously unpublished synonymy, which is considered below.

Material and methods

The material is deposited in collections of the I. I. Schmalhausen Institute of Zoology, National Academy of Science, Kyiv, Ukraine (SIZK), Zoological Institute, Russian Academy of Sciences, St. Petersburg, Russian Federation (ZISP), Museum für Naturkunde, Berlin, Germany (MNKB) and Naturhistorisches Museum Wien, Austria (NHMW), Nationaal Natuurhistorische Museum, Leiden, Netherlands (RMNH), Zoologische Staatssammlung, München (ZSSM), Entomologisches Institut, Eidgenössische Technische Hochschule-Zentrum, Zurich, Switzerland (ETHZ); other type material is deposited in the Natural History Museum London (BMNH).

Terminology and abbreviations generally follow White et al. (1999).

Results and discussion

Tephritis conyzifoliae Merz, 1992 (fig. 1–2)

Tephritis conyzifoliae Merz, 1992: 230; 1994: 65; Norrbom et al., 1999: 216. Evstigneev, 2016.

Tephritis (*Terbita*) *academica* Bassov & Tolstoguzova, 1994: 84; Norrbom et al., 1999: 214, **syn. n.**

Tephritis (*Terbita*) *nartshukovi* Bassov & Tolstoguzova, 1994: 89; Norrbom et al., 1999: 218, **syn. n.**

Tephritis epicrepis Shcherbakov, 2001: 80, **syn. n.**

Material. Type. Holotype ♂ *Tephritis conyzifoliae*: **Switzerland:** Valais: Oberwald, 1450 m (ETHZ).

Paratypes *Tephritis conyzifoliae*: **Switzerland:** GR, 2150 m, Ftan, coll. 18.08.1988, ex flower head *Crepis conyzifolia*, em. 25.08.1988, 1 ♀; 28.08.1988, 1 ♀; coll. 2.08.1990, ex fl. head *Crepis conyzifolia*, em. 7.08.1990, 1 ♀; 10.08.1990, 1 ♂ (Merz) (SIZK); 14.08.1990, 1 ♂ (Merz) (MNKB); 12.08.1990, 1 ♂; 14.08.1990, 1 ♂; 16.08.1990, 1 ♀

(Merz) (ZISP); GR, 1900 m, Susch-Fluella, coll. 1.08.1990, ex fl. head *Cr. conyzifolia*, em. 12.08.1990, 1 ♂ (Merz) (SIZK); 16.08.1990, 1 ♀ (Merz) (RMNH); Valais: 1450 m, Oberwald, coll. 18.07.1991, ex fl. head *Cr. conyzifolia*, em. 31.07.1991, 1 ♀ (Merz) (MNKB); Ticino: Locarno-Gardada, coll. 21.08.1991, ex fl. head *Cr. conyzifolia*, em. 27.08.1991, 1 ♂ (Merz) (SIZK).

Holotype ♂ *T. academica*: **Russia**: Novosibirsk, Akademgorodok, forest park, ex flower heads of *Cicerbia* spp., coll. 16.08.1990, em. 22.08.1990 (Basov) [«Россия, Новосибирск, Академгородок, лесопарк. Выведен из соцветий цицербиты (*Cicerbia* spp.). Сбор 16.VIII.1990, вылет имаго 22.VIII.1990 (Басов) (ЗИН РАН)»] (not located).

Holotype ♂ *T. nartshukovi*: **Russia**: Tatarstan: Buinsk district, 3 km S of Buinsk, meadow, ex flower heads of *Cirsium canum*, coll. 27.07.1991, em. 10–20.09.1990 (Basov & Tolstoguzova) («Россия, Буинский р-н Татарстана, в 3 км, южнее г. Буинск, заболоченный луг. Получен из соцветий бодяка серого [*Cirsium canum*. L]. Сбор 27.VII.1991, вылет имаго 10–20.X.1990 (Басов, Толстогузова) (ЗИН РАН)» (not located).

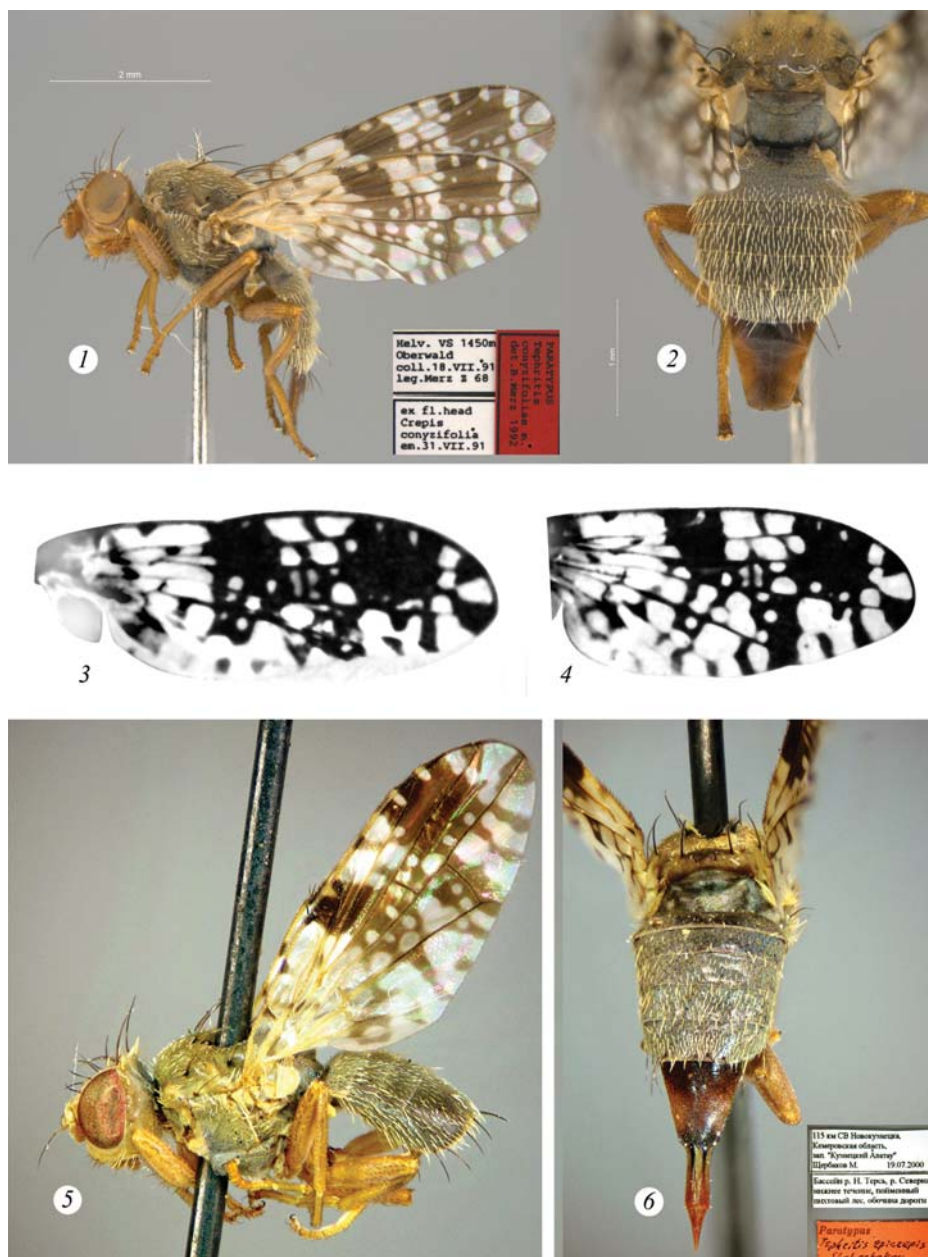


Fig. 1. *Tephritis conyzifoliae*: paratype ♂ (1–2), holotype ♂ of *T. academica* (3), holotype ♂ of *T. nartshukovi* (4) and paratypes ♂, ♀ of *T. epicrepis* (5–6): 1 — habitus and labels; 2 — abdomen (dorsal view); 3–4 — wing (after Basov & Tolstoguzova, 1994, with changes); 5 — ♂, habitus; 6 — ♀ abdomen (dorsal view, and labels).

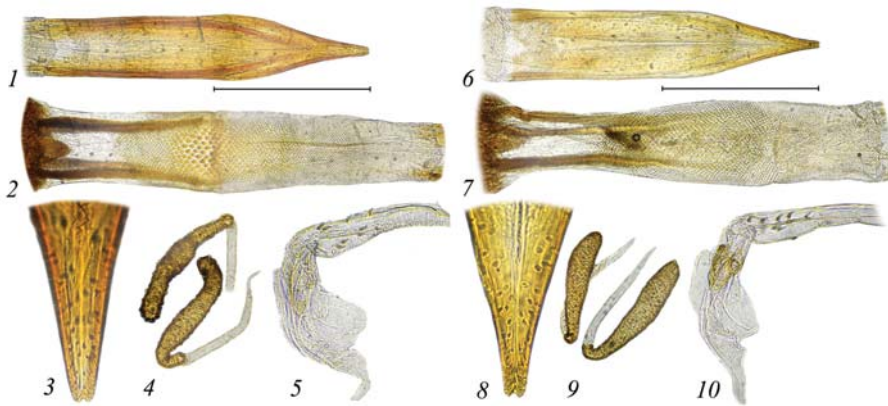


Fig. 2. Paratypes of *Tephritis epicrepis* (1–5) and *T. conyzifoliae* (6–10), genitalic structures: 1, 6 — aculeus, ventral; 2, 7 — eversible membrane, ventral; 3, 8 — aculeus tip, ventral; 4, 9 — spermathecae; 5, 10 — phallus.

Holotype ♂ *T. epicrepis*: **Russia**: Kemerovo Region: 115 km NE Novokuznetsk, Kuznetsk Alatau Mountain reserve, Niznyaya Ters River basin, Severnaya River, flood plain forest with *Abies*, from flowerhead of *Crepis sibirica*, 19.07.2000, emergence 4.08.2000 (M. Shcherbakov) (ZISP) (examined).

Paratypes *T. epicrepis*: **Russia**: Kemerovo Region: same date and locality as for the holotype, 1 ♂, 1 ♀; 80 km S Tisul, vicinity of Belogorsk, dark coniferous forest with *Picea*, *Abies* and herbs, ex flower head *Crepis sibirica*, 4.08.1995, em. 15.08.1995, 1 ♀ (M. Shcherbakov); 106 km NE Novokuznetsk, Pestraya Mt. [54°40' N, 88°14' E], N slope, Veselyi Akchelbak River, 870 m, tall-herbaceous flood plain meadow, ex flower heads *Cr. sibirica*, 22.07.1996, em. 4.08.1996, 1 ♀ (M. Shcherbakov); 113 km NE Novokuznetsk, Chemodan Mt. [54°42' N, 88°24' E], E slope, 800 m, upper stream of Kiya River, left bank, flood plain meadow, from flower heads of *Cr. sibirica*, 8.08.2000, 1 ♂ (M. Shcherbakov); 119 km NE Novokuznetsk, valley of Nizhnyaya Ters River, herb meadow, ex flower heads of *Cr. sibirica*, 17.07.1996, em. 29.07.1996, 1 ♂ (M. Shcherbakov) (ZISP) (examined).

Non-type. Kazakhstan: East Kazakhstan Region: “Malokrasnoyarsk” [Katon Karagay District, vic. Ulken Narym], 23.07.1926, 1 ♀ (V. Vereshchagin); **Almaty Region**: “Zubenko’s Apiary, Bolshaya Almatinka River, Semirechye” [S vic. of Almaty Ulkhen Almaty River], 24.08.1928, 1 ♂ (Shnitnikov) (ZISP); Almaty, near Medeo, *Crepis* sp. 19.09.1986, 2 ♂, 3 ♀ (V. Korneyev & Kameneva); Talgar, Almaty Nature Reserve, ex *Crepis* sp., coll. 24.09.1986, em. 11.10.1986, 4 ♂, 2 ♀ (Korneyev) (SIZK); **Kyrgyzstan**: Chaar-Tash Mt., Ferghana Ridge [40.28° N 73.17° E], 16.08.1928, 1 ♂, 1 ♀ (V. Kuznetsov); Tien-Shan Mts., Karakol River, Przewalsk, 29.06.1986, 4 ♂ (V. Korneyev); Alai, 45 km S of Kyzyl-Kiya, Kichik-Alai ridge, Isfairam-Sai basin, h = 2800–2850 m, 13.07.1999, 1 ♂ (V. Korneyev & Kameneva) (SIZK); **Russia**: Krasnoyarsk Territory: Biryusa vill., “50 verst SW of Krasnoyarsk”, 7.06.1903, 1 ♀; Sukhoy Buzim vill., “45 verst NE of Krasnoyarsk”, 18.06.1903 1 ♀ (Salstrem); Jurty-Kansk, near Enisey, 9.06.1912, 1 ♀ (Mishyn Verhov.) (ZISP); Leningrad Region: Agalatovo, 1.10.1961, 1 ♀ (Stackelberg) (ZISP); **Switzerland**: Valais: Simplon-Gabi, 1400 m, 30.06.1990, 1 ♀ (Merz) (ZSSM); Graubünden: Ardez, 1600 m, Z 191, ex flower heads *Crepis conyzifolia*, coll. 2.08.1990 ep. 16.08.1990, 1 ♀ (Merz) (ZISP); Samedan, 1800 m, ex fl. heads *Cr. conyzifolia*, coll. 16.08.1991, em. 27.08.1991, 1 ♂, 1 ♀ (Merz) (ZSSM); Lenzerheide, 1700 m, 6.08.1992, 1 ♂, 3 ♀ (B. Merz) (RMNH).

Discussion. *Tephritis conyzifoliae* was recognized as superficially very similar to *T. crepidis* Hendel, 1927, with the main difference in the unique for the genus *Tephritis* microscopic spines on basiphallus. This structure is present in *T. conyzifoliae* (fig. 2, 10), but entirely lacking in *T. crepidis*. According to Merz (1994), the two species use different host plants: larvae of *T. crepidis* feed in flower heads of *Crepis biennis* L., *Cr. pyrenaria* (L.) Greuter and *T. conyzifoliae* was hitherto known to infest only *Cr. conyzifolia* (Gouan) A. Kern.

Tephritis (Terbita) academica Bassov & Tolstoguzova, 1994 and *T. (Terbita) nartshukovi* Bassov & Tolstoguzova, 1994 were described from Western Siberia and Tatarstan (Russia) without any comparison with *T. conyzifoliae*, or mention of the paper by Merz (1992). Types of both species were said to be in ZISP collection. While identifying and rearranging all the *Tephritis* material at the Zoological Institute, Saint Petersburg in September 2013, I have not found any traces of the *T. academica* and *T. nartshukovi* types. I suppose that they actually have never been deposited there and were left in private Basov’s collection until his death in 2008, possibly still existing in Elets State University (Russia), but remaining

unavailable. Comparison of the original figures and photographs (fig. 1, 3; 1, 4) with the paratypes of *T. conyzifoliae* shows no morphological differences to recognize these nominal species them from each other. Both nominal species were said to be reared, from *Cicerbita* (*T. academica*) and *Cirsium* (*T. nartshukovi*), which are believed to be resulted either from misidentification of the host plant in the first case or mislabeling in the second case. I therefore consider the type specimens of the three nominal species to be conspecific and establish synonymy of the three names.

Tephritis epicrepis Scherbakov, 2001 was described based on specimens from Southern Siberia mostly reared from *Crepis sibirica* L. In the description, *T. epicrepis* was compared with *T. conyzifoliae* and said to differ from it in the structure of distiphallus (wider lateral membranous lobes in basal part) and length of oviscape (said to be as long as tergites 5 and 6 combined in *T. epicrepis* and as long as tergites 4–6 combined in *T. conyzifoliae*). In 2013 I examined the specimens of *T. epicrepis* deposited in ZISP collection. The shape of phallus (fig. 2, 5; 2, 10) and aculeus were found to be the same: aculeus length of *T. epicrepis* = 1.1 mm (fig. 2, 1; 2, 3), aculeus length of *T. conyzifoliae* = 1.05 mm (fig. 2, 6; 2, 8), spermathecae (fig. 2, 4; 2, 9) without significant differences. Also, the relative length of oviscape (compared to the last two or three abdominal tergites clearly overlap in both series). So, compare the type series of *T. conyzifoliae* in several Western European museums (fig. 1, 1; 1, 2) and type series of *T. epicrepis* in Zoological institute of Saint Petersburg (fig. 1, 5; 1, 6) show no significant difference between specimens, so were made a decision to synonymise these two names.

Evstigneev (2016) recently reared *T. conyzifoliae* from *Crepis pannonica* (Jacq.) K. Koch. and *Cr. sibirica* in Samara and Uljanovsk Regions (Russia); this also widens the host plant and distribution range of this species. Further studies of Eastern European *Crepis* are needed to fill the narrow, but still existing gap between its European and Siberian localities.

The subgenus *Terbita* Bassov & Tolstoguzova, 1994 (type species *Tephritis (Terbita) academica* Bassov & Tolstoguzova, 1994) established for *Tephritis* species with spinulose preglans of males is restricted now to a single species sharing many essential characters with the group of species associated with other Asteraceae Cichorieae, and rooted within that group forming no separate lineage in *Tephritis*. Currently I do not consider any subgeneric division of *Tephritis* at all (Korneyev, in prep.).

Distribution. Czech Republic, Switzerland, France, Russia (Central, East; West Siberia, incl. Altai), Kazakhstan (first record), Kyrgyzstan (first record).

Host plants. *Crepis conyzifolia* (Gouan) A.Kern. (Merz, 1992); *Cr. sibirica* L. (Shcherbakov, 2001); *Cr. pannonica* (Jacq.) K. Koch. (Evstigneev, 2016).

Tephritis angustipennis (Loew, 1844) (fig. 3)

Trypeta angustipennis Loew, 1844: 382; *Tephritis angustipennis*: Loew, 1862: 113; Hendel, 1927: 182; Hering, 1944: 31; Merz, 1994: 62; Norrbom et al., 1999: 214; Greve, 1999: 6; Söderman et al., 2007: 6; Smit, 2010: 107; Evstigneev, 2016. — *Trypeta segregata* Frauenfeld, 1864: 147; *Tephritis angustipennis* f. *segregata*: Hering, 1944: 31; Norrbom et al., 1999: 214. — *Tephritis ptarmicae* Hering, 1935: 171, 1944: 31; Norrbom et al., 1999: 218, **syn. n.**

Material. Type. Lectotype ♂ *Trypeta angustipennis* (here designated): [Sweden?: Lappland]: “Tr. leontod. Zttst* Lapp.”, “sp. depict. /Germ. Zeitsch”, “angusti / pennis Lw.” coll. Loew”, “Typus” [red label], (MNKB) (examined) (fig. 3, 1–3). **Lectotype** ♀ *Tephritis ptarmicae* (here designated): **Poland**: “Crossen a[m]. O[der]. 24.VI.1934 Hering, E.” “Paratype / Tephritis ptarmicae / det. M. Hering, 1935”, “Paratypus” [red label], “Synonym of Tephritis angustipennis (Loew) det. B. Merz 1991” (MNKB) (examined) (fig. 3, 4–5); paralectotypes: 1 ♀: “Crossen a[m]. O[der]. 24.VI.1934 Hering, E.” “Paratype Tephritis ptarmicae* det. M. Hering, 1935”, 3 ♂: “Crossen a[m]. O[der]. 5.VI.1934 Hering, E.” “P.T. Tephritis ptarmicae* det. M. Hering, 1935”, “Synonym of Tephritis angustipennis (Loew) det. B. Merz 1991” (MNKB).

Non-type. [Country unknown:] (dark red paper rhomb), “coll. Loew”, 1 ♂, 1 ♀ (on common pin) (MNKB); **Germany**: NE Bavaria, Waidhaus, “X-28”, ex *Achillea ptarmica*, em. 14.08.1995, 6 ♂, 8 ♀ (ZSSM);

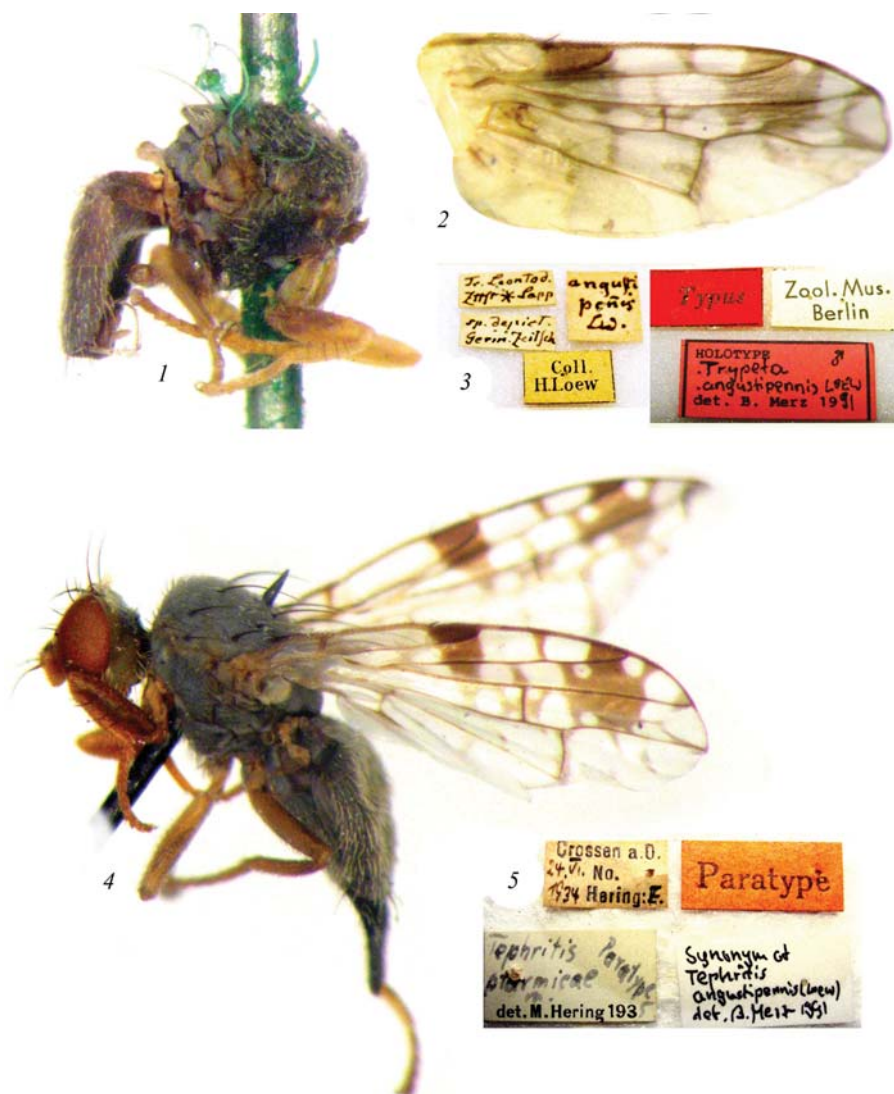


Fig. 3. *Tephritis angustipennis*, lectotype ♂ (1–3) and *T. ptarmicae*, lectotype ♀ (4–5): 1 — habitus; 2 — wing; 3 — labels; 4 — habitus; 5 — labels.

“angustipennis /Zett., Loew / Hamburg / v. Winth.[em]”, “2531”, 1 specimen (abdomen and wings missing); Frankfurt am Oder [no data], 9 ♂, 12 ♀ (Riedel) (“*Tephritis angustipennis* Lw. E. Hering det.’ 35”) (MNKB); **Kazakhstan**: “Uralsk, Khanskaya Roshcha” [Oral], 14.05.1935, 1 ♀ (Fridolin); Atbasar, 27.07.1935, 1 ♂; 4.06.1936, 1 ♂ (Rezvoy); Akmolinsk, 14.06.1932, 1 ♂; Akmolinsk, Kokshetau, Borovoye, 25.06.1932, 1 ♀ (Popov); W Akmolinsk, Kokshetau, meadow, Tersakkan river, near water, 13.06.1957, 5 ♂ (Nartshuk) (ZISP); **Norway**: “Norwegen. 7. 35580”, 1 ♂ (MNKB); **Russia**: Leningrad Region: Terioki (Zelenogorsk), 1 ♀ (Wagner); Shuvalovo, railroad to Finland, 26.09.1894, 1 ♂; 1 ♀ (Bianchi); 17.06.1897, 1 ♂ (Jacobson); Rjabovo Iri-novskaja railroad station, 24.09.1895, 1 ♂, 1 ♀ (Bianchi); Saint-Petersburg, Lebyazhye 23.06.1899, 1 ♂ (Pleske); Petrograd, Smolenskoe cemetery, 28.06.1918, 1 ♂ (Stackelberg); Ozerki, Petrograd county, 16.04.1920, 2 ♂ (Stackelberg); Ozerki, 3.06.1920, 1 ♀ (Kosyanov); Kolomiagi, Petrograd county, 6.08.1921, 1 ♂ (Stackelberg); Udelnaya station, 12.10.1922, 2 ♀ (Fridolin); Luga county, Van-der-Vliet [Kalganovka], 11.06.1925, 1 ♀; Jukki, 25.08.1931, 1 ♂; 16.08.1933, 1 ♂; Petrograd, Lesnoi, 30.09.1932, 1 ♂; 20.09.1935, 1 ♀; vic. Luga, Tolmatshevo, 15.07.1932, 1 ♂; 15.07.1935, 1 ♀; Luga, 19.08.1953, 1 ♀; 25.08.1953, 1 ♀ (Stackelberg); Solnechnoe, 12.08.1954, 3 ♀ (M. Kandybina); Jashera nr. Luga, 19.06.1957, 1 ♂, 1 ♀; 25.06.1957, 1 ♀; 5.07.1957, 4 ♂, 3 ♀; 18.07.1957, 1 ♂; 13.07.1958, 1 ♂, 1 ♀; 26.08.1958, 1 ♂; 20.07.1959, 1 ♂; 29.06.1960, 1 ♂; (Stackelberg); Vyborg district, Bolshoi Berezovyi Is. 13.08.1979, 2 ♂, 1 ♀; 22.08.1979, 1 ♀; 4.08.1981, 1 ♀ (M. Kandybina); Orenburg Region: Ural, nr. Orenburg, Verkhniaya Dneprovka, 20.05.1932, 1 ♀; 22.06.1932, 23.06.1932, 1 ♂; 31.07.1932, 1 ♀; 1.07.1934, 1 ♀; 15.07.1935, 1 ♀ (Zimin); Tyumen Region: Samarovo on Irtysh, 5.06.1925, 1 ♂ (Fridolin);

Kemerovo Region: W Kuznetsk Alatau Mountain Reserve, 113 NE Novokuznetsk, Chemodan Mt., western slope, foothill, 850 m Kedrovyi Brook, meadow, ex *Achillea impatiens*, coll. 4–9.08.1995, em. 13.08.1995, 2 ♂, 9 ♀ (M. Shcherbakov) (ZISP); “Siberia / Schnabl”, “coll. H. Loew”, 2 ♀ (MNKB); **Sweden**: “Lund, VI. 59282”, 1 ♂; “Malmö, 8. 36458” 1 ♂, 1 ♀ (MNKB); **Switzerland**: Basel, Riehen, 270 m, coll. 14.08.1989, 1 ♂, 1 ♀; ex *Achillea ptarmica*, em. 16.08.1989, 1 ♀; ex *A. ptarmica*, em. 22.08.1990, 1 ♂, 1 ♀ (Merz) (ZISP); **Ukraine**: Kherson Region: Novotroitske, 16.05.1923, 1 ♂; “Vladimirovka” [?Novorosyiske], 19.05.1923, 1 ♀ (Dobzhansky); Burkuty, “Burkutski plavni” [marshes], lower reaches of Dnipro, 13.06.1933, 7 ♂, 4 ♀; Askania-Nova, 9.07.1933, 2 ♂, 3 ♀; 21.07.1933, 6 ♂, 7 ♀ (Ter-Minassian); 20.05.1923, 1 ♂ (Dobzhansky) (ZISP).

Discussion. Originally, *T. angustipennis* was described as the species that Zetterstedt partly misidentified as *T. leontodontis* (“Tephritis Leontodont. Zett. Ins. lapp. p. 745. No. 6. var. a. (ex. p.)”). He has seen only one couple sent to him by Zeller from Zetterstedt (“Ich besitze von dieser äusserst kenntlichen Art nur ein Pärchen, welches Herrn Zeller als Teph. Leontodontis von Herrn Zetterstedt zugeschickt wurde.”). These two specimens as well as the other specimens of the “var. a” later reidentified in Zetterstedt’s collection as *Tephritis angustipennis* consist the syntype series. The male in Loew’s collection (MNKB) with the wing depicted with the original description (Loew, 1844: Tab. II, fig. 41) is one of the extant syntypes and the only in Loew’s collection; I therefore designate it in this paper, which is a part of taxonomic revision as a lectotype for the purpose of taxonomic stability.

T. ptarmicae Hering, 1935 was described from Oder floodplain near Crossen (now Crosno, Poland), based on a series of specimens reared from *Achillea ptarmica* L.; Hering indicated that it contains “♂-,♀-Typus [...] vom 19. und 29. August 1933 [...]. Paratypen wie bei voriger art.” He did not explicitly indicate that the series includes a single name-bearing name; all of them are therefore the syntypes, including the couple collected in 1933, now deposited in the BMNH, and the specimens from MNKB marked as paratypes and collected in 1934, but before 1935. An examined female specimen from this series is designated here as lectotype.

Descriptions and figures of *T. angustipennis* and *T. ptarmica* specimens, as well as study of available types show them to be conspecific. Hering (1935) did not compare them; furthermore, not mention *T. angustipennis* and probably omitted it from consideration. *Tephritis ptarmica* is not mentioned later in Hering’s (1944) key to species of *Tephritis*, which includes *T. angustipennis* instead. It quite probably means that Hering by that time had discovered their conspecificity. However, this synonymy has not been ever formally established, and I synonymize both species names here.

Distribution. Northern and Central Europe (Merz & Korneyev, 2004); Ukraine (**first record**); Asian Russia (Korneyev & Ovchinnikova, 2004); Kazakhstan (Richter, 1965); Japan (Sueyoshi, 1998) and northern part of North America (Foote, Blanc & Norrbom, 1993). It is associated with low river banks, flood plains and lake shores, where the host plants grow.

Host plants. *Achillea alpina* var. *discoidea* Reg. (Sueyoshi, 1998); *A. impatiens* (first record), *A. ptarmica* (Merz, 1994), *A. salicifolia* Bess. (Evstigneev, 2016).

Trupanea kukunoria (Hendel, 1927), **comb. n.** (fig. 4)

Tephritis kukunoria Hendel, 1927: 189; Hardy, 1968: 125; Norrbom et al., 1999: 217. — *Trupanea pterostigma* Wang, 1998: 307, Korneyev & Ovchinnikova, 2004: 564, **syn. n.**

Material. Type. Lectotype ♀ *Tephritis kukunoria*, [China: Qinghai Hu: “Kuku-nor-Geb. / ded. 17.I.1894 / R. Tancre”, “Coll. Hendel”, “Type ♀” [D. E. Hardy’s handwriting on red paper], “*Tephritis / kukunoria* / Hendel / marked by / D. E. Hardy, 1961” (NHMW) (examined).

Discussion. This species was originally described in the genus *Tephritis* based apparently on one female (exact number of specimens not indicated explicitly; only the lack of information on the wing length and pattern variability possibly show that Hendel had a single female on hand). Study of the specimen in the NHMW collection clearly showed that



Fig. 4. *Trupanea kukunoria*, lectotype ♀: 1 — habitus; 2 — scutellum; 3 — wing; 4 — labels.

it possess only 2 scutellar setae (fig. 4, 2), belongs in the genus *Trupanea* Shrank, 1795, and is transferred to the latter genus here. In the key to Eastern Palaearctic species *Trupanea* species (Korneyev & Ovchinnikova, 2004) it runs to *Trupanea pterostigma* Wang, 1998 and fits description of the female. I therefore consider both species names to be synonyms. Type localities of these nominal species are both in Qinghai Province c. 600 km from each other but lie in the same nature zone and on elevation 3500–4000 m.

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References

- Basov, V. M., Tolstoguzova, I. A. 1994. Two new species and a new subgenus of fruit flies of the genus *Tephritis* (Diptera, Tephritidae) from Russia. *Zoologicheskii Zhurnal*, **73** (9), 83–90 [In Russian].
- Evstigneev, D. A. 2016. Tephritid flies of the “Higher Tephritines” Group (Diptera, Tephritidae, Tephritinae) in Ulyanovsk and Samara Regions of Russia. *Ukrainska Entomofaunistyka*, **7** (1) (In press).
- Foote, R. H., Blanc, F. L., Norrnom, A. L. 1993. *Handbook of the fruit flies (Diptera: Tephritidae) of America north of Mexico*. Comstock Publishing Associates, Ithaca. i–xii + 1–571.
- Frauenfeld, G. R., von. 1864. Zoologische Miscellen. *Verhandlungen der Zoologisch-Botanischen Gesellschaft in Wien*, **14**, 147–158.
- Greve, L. 1999. Notes on tephritid flies (Diptera, Tephritidae) from Norway. *Norwegian Journal of Entomology*, **46**, 1–7.
- Hardy, D. E. 1968. The fruit fly types in the Naturhistorisches Museum, Wien (Tephritidae-Diptera). *Annalen des Naturhistorischen Museums in Wien*, **72**, 107–155.
- Hendel, F. 1927. 49. Trypetidae. In: Lindner, E., ed. *Die Fliegen der palaearktischen Region*. **5** (Lfg. 16–19). Schweizerbartsche Verlag, Stuttgart, 1–221 + I–XVII pl.
- Hering, E. M. 1935. Drei neue Bohrfliegen-Arten aus der Mark Brandenburg (Dipt. Trypetidae) (6. Beitrag zur Kenntnis der Trypetidae). *Märkische Tierwelt*, **1**, 169–174.

- Korneyev, V. A., Ovchinnikova, O. G. 2004. [79. Fam. Tephritidae — Fruit Flies.] In: Leley, A. S., ed. *Keys to Insects of Far East Russia. Vol. VI. Diptera and Fleas. Part 3.* Dal'nauka, Vladivostok, 456–564 [In Russian].
- Loew, H. 1844. Kritische Untersuchung der europäischen Arten des Genus *Trypeta*. *Germa's Zeitschrift für die Entomologie*, **5**, 312–437.
- Loew, H. 1862. *Die europäische Bohrfiegen (Trypetidae)*. Wien, 1–128 + I–XXVI.
- Merz, B. 1992. Fünf neue Fruchtfliegenarten aus den Schweizer Alpen und systematische Bemerkungen zu einigen europäischen Gattungen und Arten (Diptera, Tephritidae). *Mitteilungen der Schweizerischen entomologischen Gesellschaft*, **65**, 227–239.
- Merz, B. 1994. Diptera: Tephritidae. *Insecta Helvetica Fauna*. HGE press, Geneva, **10**, 1–198.
- Norrbom, A. L., Carroll, L. E., Thompson, F. C., White, I. M. & Freidberg, A. 1999. Systematic Database of Names. In: Thompson, F. C., ed. *Fruit Fly Expert Identification System and Systematic Information Database*. Backhuis Publishers, Leiden, 65–299.
- Richter, V. A. 1965. [A review of the fauna of fruit-flies (Diptera, Trypetidae) of Kazakhstan]. *Entomologicheskoe obozrenie*, **44** (1), 79–84 [In Russian].
- Shcherbakov, M. V. 2001. Three new species of the genus *Tephritis* Latreille (Diptera, Tephritidae) from Southern Siberia. *International Journal of Dipterological Researches*, **12** (2), 79–89.
- Smit, J. T. 2010. De Nederlandse boorvliegen (Tephritidae). *Entomologische Tabellen. Supplement bij Nederlandse Faunistische Mededelingen*, **5**, 1–159.
- Söderman, G., Winqvist, K., Albrecht, A. & Kahanpää, J. 2007. Suomen hedelmäkärpästen (Diptera: Tephritidae) biologia, levinneisyys ja uhanalaisuus. *Sahlbergia*, **12**, 1–19.
- Sueyoshi, M. 1998. A revision of the genus *Tephritis* Latreille (Diptera: Tephritidae) from Japan. *Entomological Science*, **1** (1), 115–128.
- Wang, X.-J. 1998. The fruit flies (Diptera: Tephritidae) of the East Asian Region. *Acta Zootaxonomica Sinica*, (1996), **21**, 1–419 + [1–40] + I–XLI pl.
- White, I. M., Headrick, D. H., Norrbom, A. L. & Carroll, L. E. 1999. Glossary. In: Aluja, M. & Norrbom, A. L., eds. *Fruit Flies (Tephritidae): Phylogeny and Evolution of Behavior*. CRC Press, Boca Raton, 881–924.

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