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New Palearctic Species of *Torymus* (Hymenoptera, Torymidae)

Andrei G. ZAVADA

Schmalhausen Institute of Zoology of National Academy of Sciences of Ukraine, B. Khmelnitsky str. 15, Kiev, 01601, Ukraine
E-mail: hommer@i.com.ua, andre_zavada@hotmail.com

ZAVADA, A.G. 2001. New Palearctic Species of Torymus (Hymenoptera: Torymidae). ***Entomol. Probl.*** **32(1): 85 – 90.** – Three new species, *T. drewseni* sp.nov., *T. tatianae* sp.nov. from Ukraine, and *T. terentianus* sp.nov. from Northern Kazakhstan, are described. A new record of *T. arcticus* Thomson is reported.

Key words: Hymenoptera, Torymidae, *Torymus*, new species, Central Asia, Europe.

Intorduction

The descriptions follow in terminology those written in the recent Revision of *Torymus* (GRAHAM & GIJSWIJT, 1998) except that the length of thorax, measured from the foremost point of neck of pronotum to the rearmost point of scutellum in dorsal view, was preferred to the length of mesosoma, which is length of thorax plus propodeum; hence the ratio length/breadth of thorax is less than that of mesosoma of Graham & Gijswijt; however, the latter ratio is also given.

Species-groups of *Torymus* adopted in the present paper have been in part defined by GRAHAM (1994); and by GRAHAM & GIJSWIJT (1998) where a key to species groups is presented, and their composition. Although, some amendments are proposed here (see under Comparative Notes on *T. terentianus* sp.nov.).

Depositories

SIZK Schmalhausen Institute of Zoology of Ukrainian Acad. Sci., Kiev, Ukraine
ZMAN Zoologisch Museum Amsterdam, afd. Entomologie, The Netherlands

Torymus drewseni sp.nov.

Type material: Holotype ♀, UKRAINE, Zakarpatskaya obl., nr v. Hetyna, 20-30.07.1999, ex cecidomyiid gall on *Salix* sp., emerg. i.2000 (Zavada) (SIZK); **paratypes** 2 ♂♂, same data as holotype; 2 ♀♀, UKRAINE, Khersonskaya obl., nr v. Vinogradnoye, 15.07.2000 (Zavada) (SIZK); 1 ♀, same data (ZMAN).

Additional material: 7 ♂♂, 10 ♀♀, TURKMENISTAN, Kopet-Dag, v. Nokhur, ex galls of *Asphondylia* sp. on *Astragalus*, coll. 18.v.1975, reared ix.1976 (Diakonchuk).

♀. Head in dorsal view 2× as broad as long, temples 0.28× length of eye, weakly curved; foremost point of occipital carina not quite reaching posterior margin of eyes; POL:OOL 1.9 – 2.15, OOL:OD 1.2 – 1.25, distance from lateral ocellus to occipital carina as long as OOL; vertex weakly to moderately transversely rugose, with several close piliferous punctures and with some hairs within ocellar triangle. Parascrobal areas weakly protruding. Head in front view (Fig. 1) 1.1 – 1.2× as broad as high, malar space 0.36× height of eye, genae very weakly curved in lower third, mouth 2.15× malar space. Anterior margin of clypeus straight. Face rather thickly clothed with white hairs. Antennal scape not, or just, reaching lower margin of anterior ocellus, about 4× as long as broad. Pedicellus 0.6× length of F1, 1.5 – 1.7× as long as broad. Anellus very slightly transverse, 0.3× length of F1; F1 stouter than anellus, 1.6 – 1.7× as long as broad, slightly constricted in basal half; F2 – F5 1.6 – 1.8× as long as broad, F6 1.5× so, F7 1.2×. Sensilla biseriate; flagellum slender, filiform; flagellum plus pedicellus 1.54× breadth of head.

Thorax 1.6 – 1.7× as long as broad; mesosoma 1.75 – 1.8× as long as broad. Mesoscutum 1.2× as broad as long, piliferous punctures small, only fairly conspicuous; sculpture very finely reticulate, on anterior 1/2–2/3 overlaid with transverse rugosity. Scutellum rather narrowly truncate at base, 1.4× as long as broad; its posterior 0.35 differing slightly from the rest in having more golden tinge; sculpture coarsely alutaceous, more close near base. Dorsum of thorax quite thickly pilose. Propodeum very weakly alutaceous, with entire row of small foveolae at base. Mesepimeron at apex slightly narrower than at base, 0.8× as long as mid coxa. Hind coxa (Fig. 4) 1.9× as long as broad, pilose dorsally in basal part, with posterior margin evenly curved; its lateral surface with smoothed reticulation, meshes along posterior margin larger, elongate. Longer spur of hind tibia about as long as apical breadth of tibia and almost 0.4× length of basitarsus; the latter 0.45× as long as tibia (Fig. 3). Costal cell of fore wing (Fig. 2) with rows of setae on both surfaces broadly interrupted; basal cell with several setae below SM; cubital vein bare except in distal third; speculum extending just to M, narrowly open proximally below.

Gaster rather strongly compressed. First gastral

sternite 1.5× as long as hind coxa. Tergite 5 deeply emarginate (Fig. 5!). Hypopygium bare. Ovipositor sheaths 1.3× as long as body, index 4.6 – 4.8.

Colour. Body bright-green except lateral surface of hind coxae, sides of thorax and of gaster, and gastral tergite 6 which are bright golden-coppery; fore coxae in basal half, mid coxae and anterior surface of hind coxae green; scape testaceous, brownish except dorso-apically, femora and tibiae testaceous, light-brown; tarsi light-yellow, claws dark. Wing venation brownish, SM and ST being somewhat darker than M or PM.

Body length excluding ovipositor, 3.5 – 3.9 mm (holotype 3.9 mm).

♂. Structurally close to female, differing in that the length of longer spur of hind tibia is 0.4× length of basitarsus, base of scutellum more widely truncate, rows of setae on costal cell complete on either side, basal cell of fore wing closed below, and in colour as follows: scape dark-green, hind femora broadly green in the middle, also mid femora dorsally; fore coxae green entirely. Body length 2.8 mm.

Comparative notes. *T. drewseni* sp.nov. is close in general aspect to *T. arundinis* (WALKER); it differs from as follows: (a) posterior margin of gastral tergite 5 is deeply emarginate with no horizontal parts laterally (in *arundinis*, the emargination takes at most 1/2 medially of the margin); (b) basal cell of fore wing is almost bare, space behind cubital vein without rows of setae; (c) hind coxa is broader in lateral view (ratio length:breadth is 2.5 in *arundinis*); (d) spurs of hind tibiae are a little longer (0.23–0.25 in the latter). Besides, *T. arundinis* appears to be strictly bound to *Phragmites* species, and has not been recorded from other host plants. The deep emargination of tergite 5 is also observed in *T. bedeguaris* (L.) and in *T. calcaratus* (NEES); from *bedeguaris* the new species may be unmistakably distinguished by its longer 1st gastral sternite and longer ovipositor sheaths, by absence or scarcity of piliferous punctures on thoracic dorsum, and by the green colour of the gaster. From *calcaratus* it differs in the absence of tooth on hind femur.

The Turkmenistan specimens have the emargination of gastral tergite 5 less pronounced, though as yet well marked.

T. drewseni sp.nov. falls into the species group of *chloromerus* (GRAHAM & GIJSWIJT, 1998), being close to *T. narvikensis* GRAHAM & GIJSWIJT and, especially, *T. impar* RONDANI, from which species it differs in having the aforementioned deep emargination of gastral tergite 5.

The following couplets should be inserted in the key of GRAHAM & GIJSWIJT (1998) to key out *T. drewseni* sp.nov.:

81 (the text in brackets should be omitted) ..... 81'

81' Posterior margin of gastral tergite 5 with a deep and broad emargination. 1st gastral sternite 1.5× as long as hind coxa. POL:OOL 1.9 – 2.15. .... *T. drewseni* sp.nov.

– Posterior margin of gastral tergite 5 weakly emarginate. 1st gastral sternite less than 1.4 x as long as hind coxa. POL:OOL 1.6 – 1.8 82

Biology. Reared from a cecidomyiid gall on *Salix* sp. in Ukraine, and from *Asphondylia* sp. (Diptera: Cecidomyiidae) on *Astragalus* sp. in Turkmenistan.

Distribution. Ukraine, Turkmenistan.

Etymology. The species is named after probably the first person to have seen the species.

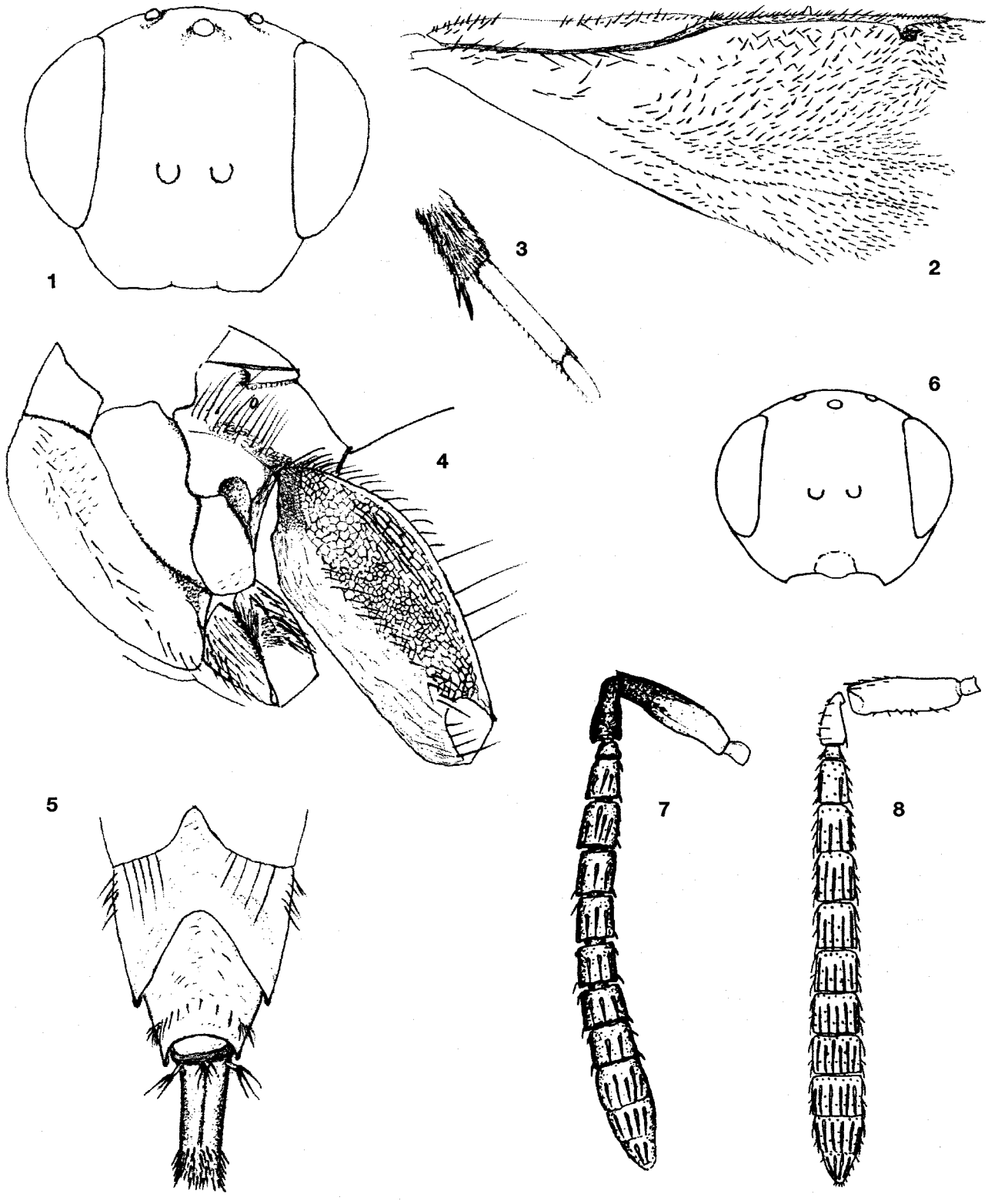
This species has probably been confused with *T. arundinis* (WALKER). HOFFMEYER (1930) may be referring to *drewseni* when he, in his comments on *arundinis*, mentions that "In Z. M. [Zoologische Museum, Kopenhagen] befinden sich 2 ♀, die mit dieser Art genau übereinstimmen, nur ist die Farbe mehr blau, besonders auf dem Hinterleibe. Sie wurden von Drewsen aus Cecidomyidengallen auf *Salix* gezüchtet." (p. 249). Through courtesy of Dr. Rudolf Meier (Zoological Museum, University of Copenhagen, Denmark) I examined Hoffmeyer's material referable to *arundinis* extant in Copenhagen. There was 1 ♀ labelled "Kyrkslätt", "Reuter", "Callimome arundinis Curt. det. Hoffmeyer 1931", "Coll. Erik B. Hoffmeyer". Unfortunately, it was destroyed while en route; only the head was found in the box, and right mid leg and hind wing glued to the cardboard triangle. With these remains, it was still possible to identify this destroyed specimen as *T. arundinis* (WALKER). Apparently, the material reared by von Drewsen was lost, either, since there were no other specimens of *arundinis*, except one ♀ collected and determined by Dr. Bouček, present in Zoological Museum of Copenhagen.

***Torymus tatianae* sp.nov.**

Type material: Holotype ♀, UKRAINE, Kherson obl., Chernomorsky Res., Soleno-Ozerny area, oak/birch grove, 6.v.1982 (Kotenko) (SIZK); **paratype** ♀, UKRAINE, Lougansk obl., Streltzovskaya Steppe [Reserve], 10 km S v. Melovoe, 25.v.1979, swept on *Caragana frutex* (PEREPECHAENKO) (ZMAN).

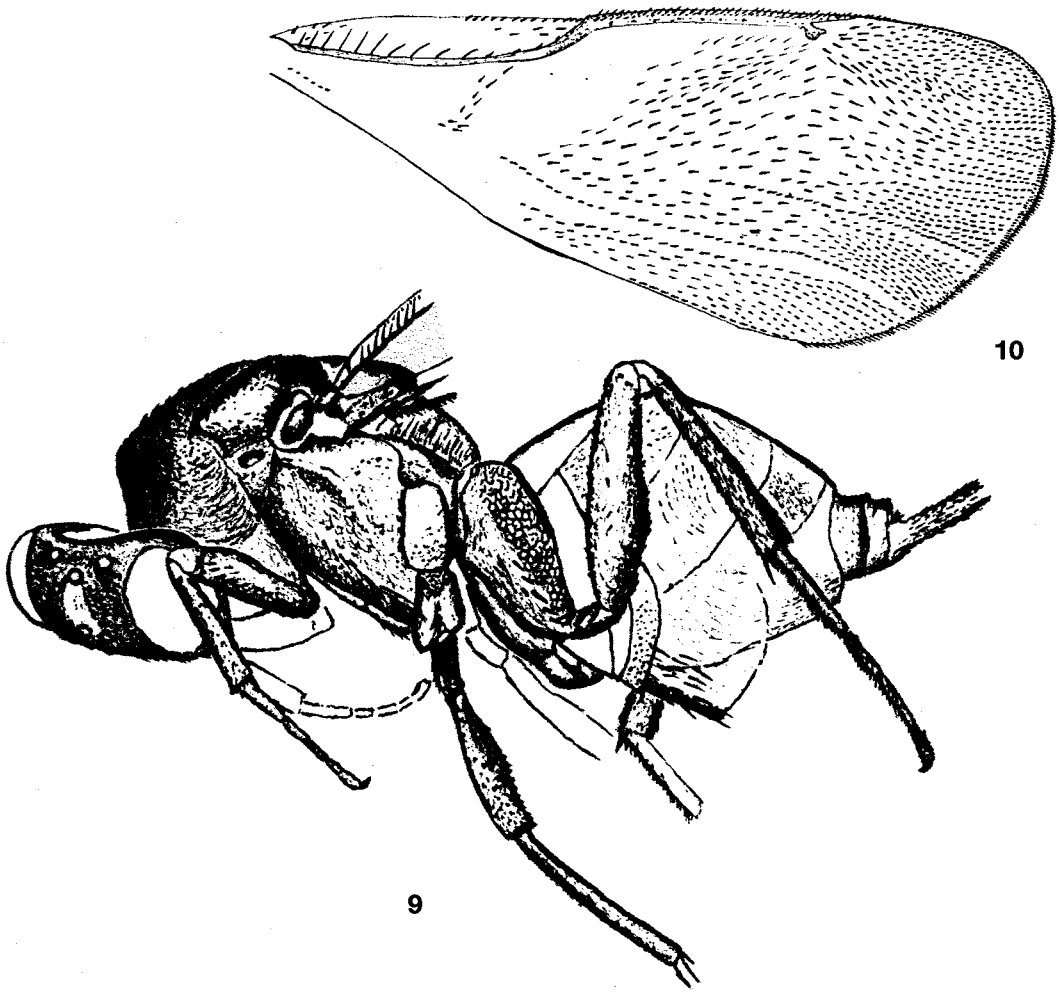
♀. Head in dorsal view: 2.05× as broad as long; temples slightly curved, 0.2× length of eye. Oculo-ocellar suture quite distinct; OOL:OD 1.1, POL:OOL 2.3, distance from lateral ocellus to occipital carina 1.1–1.2× OOL; vertex within ocellar triangle with large and close punctures. Parascrobal areas level with anterior margin of eyes. Head in front view subtrapeziform, as high as broad; genae straight, 0.35× height of eye, mouth 2.33× length of genae; clypeus very slightly produced forward; face except clypeus, in numerous piliferous punctures and in short whitish hairs. Frontal depression with vestigial sculpture. Scape reaching middle to top of anterior ocellus. Pedicellus about 1.5× as long as broad; anellus distinctly transverse and distinctly narrower than F1; all funicular segments subquadrate, clava slightly shorter than F6 + F7; flagellum filiform; sensilla numerous, short, biseriate. Flagellum plus pedicellus 1.12× as long as the breadth of head.

Thorax 1.6× as long as broad, moderately arching; mesosoma 1.66× as long as broad. Mesoscutum 1.18× as broad as long, transversely rippled except at extreme base, in numerous and fairly conspicuous piliferous punctures



Figs 1 – 8: 1 – 5) *Torymus drewseni* sp.nov., ♀; 6, 7) *T. terentianus* sp.nov., ♀; 8) *T. gracilior* GRAHAM, ♀ (from GRAHAM & GIJSWIJT, 1998): 1, 6) head in front view; 2) fore wing; 3) hind basitarsus and tibial spurs; 4) mesosoma in lateral view; 5) apical gastral tergites; 7, 8) antenna.

separated by about their diameter, clothed by rather short, greyish adpressed hairs. Scutellum 1.1× as long as broad, with several quite conspicuous punctures, with peculiar circular rugosity covering frenal area which is delimited from basal part of scutellum by a distinct sulcus; the latter is curved posterad; base of scutellum broadly truncate. Propodeum sloping at about 50°, smooth, with an entire, depressed row of indistinct trabeculae at base which is not reaching spiracles. Mesepimeron twice as long as broad. Hind coxa bare dorsally, 2.25× as long as broad



Figs 9, 10 *T. tatianae* sp.nov., ♀: 9) habitus (paratype); 10) fore wing.

with posterior margin strongly bent near base, its remaining abscissa almost straight; lateral surface with smoothed uniform reticulation. Longer spur of hind tibia distinctly shorter than apical breadth of tibia, 0.27× length of basitarsus which is 0.45 length of tibia.

Fore wing (Fig. 10) 2.6× as long as broad. Costal cell with a row of short setae in distal third or slightly more, on both surfaces at extreme anterior edge of the cell, plus some (10) scattered, longer setae on under surface in distal third. Basal cell bare. Cubital vein with several short setae in proximal 1/5; basal vein pilose. Speculum broadly open proximally, extending almost to one-half the length of M. Stigma very small, sessile; PM distinctly narrower than M near stigma. SM:M:PM:ST as 60:44:12:4.

Gaster not compressed, 1.2× as long as mesosoma. First gastral sternite 1.2× as long as hind coxa. Hypopygium with a few setae at apex; lower parts of gastral sternites pilose. Tergites except 1st, and sternites uniformly alutaceous. Posterior margin of tergite 5 entire, that of tergite 4 very shallowly and broadly emarginate. Ovipositor sheaths as long as body with index 3.8.

Colour. Body including all coxae and femora, hind tibiae, and fore and mid tibiae extensively, green; fore tarsi dark amber-greyish, mid and hind tarsi pale-greyish; gaster dorsally with volatile dark coppery sheen; scape dull greyish testaceous except dorsally and at apex. Venation pale-testaceous.

Body length excluding ovipositor, 2.6 mm.

♂ unknown.

Biology unknown.

Distribution. Ukraine.

Comparative notes. *T. tatianae* sp.nov. belongs to *baudysi*-species group; from *T. baudysi* Bouček it differs in considerably longer ovipositor (not longer than gaster in *baudysi*), presence of hairrow on costal cell and on basal vein (both bare in the latter), conspicuous and numerous piliferous punctures on mesoscutum and scutellum (devoid of such in *baudysi*), and head being as high as broad (1.2× as high in the latter species).

In the Graham & Gijswijt's key, *T. tatianae* sp.nov. and *T. baudysi* Bouček should better be placed in one couplet; couplet 5 should be replaced with:

5. Stigma very small and sessile. Scutellum with peculiar circular sculpture which is spreading onto frenal area, where it is as strong as in basal part of scutellum. [Frenal sulcus distinct. Venation pale. All coxae, femora, and tibiae metallic green.] ..... 5'
– Stigma normal or larger, distinctly petiolate. Sculpture on scutellum not circular, on frenal area weaker or absent 6

5' Ovipositor sheaths as long as body. Scutellum with distinct, though sparse, piliferous punctures. Head as high as broad in front view. Costal cell pilose .... *T. tatianae* sp.nov.

– Ovipositor sheaths as long as gaster. Scutellum without piliferous punctures. Head 1.2× as high as broad. Costal cell bare ..... *T. baudysi* BOUČEK

***Torymus terentianus* sp.nov.**

Holotype ♀, KAZAKHSTAN, Akmolinskaya obl., Shchuchinsk, ex seeds of *Cotoneaster melanocarpa* LODD., 1997 (GNINENKO) (SIZK); **paratypes** 8 ♀♀, same data as holotype (SIZK).

♀. Head in dorsal view 1.7× as broad as long; temples 0.47× length of eye, strongly curved. POL:OOL 2, OOL:OD 1.25; vertex strongly alutaceous with fine transverse rugae. Head in front view nearly circular (Fig. 6); malar space 0.42× height of eye, genae distinctly curved. Clypeus broad, testaceous, not produced forward or hardly so. Inner orbits distinctly diverging downwards. Face in sparse greyish porrect hairs. Parascrobal areas protruding by 1/3 the length of eye. Scape 3.8 – 4.1 as long as broad, 0.9 – 1.1× breadth of eye. Pedicellus 2.2× as long as broad, 1.4 – 1.5× as long as F1, constricted proximally; anellus subquadrate, 0.4× length of F1; F1 as broad at base as anellus, 1.33× as long as broad; F2 1.2× as long as broad and appears very slightly longer than F1 or F3, F3 1.2× as long as broad, F4 slightly oblong, F5 (and F6) quadrate, F7 slightly transverse. Sensilla uniseriate. Antenna (Fig. 7) moderately clavate: F7 about 1.5× as broad as F1. Flagellum plus pedicellus 1.36× breadth of head.

Thorax 1.8 – 1.9× as long as broad; pronotum with sides weakly converging; mesosoma slightly less than 2× as long as broad. Mesoscutum as long as broad, rippled over its entire surface. Scutellum with frenal area extending over 0.4 of its length, shining and bumpy, delimited by a sulcus. Propodeum inclined at 60° to longitudinal axis of body, rather strongly alutaceous, 1.2× as long medially as dorsellum, with entire row of fine fovea along base; upper margin of petiolar foramen forms, in dorsal view, a deep excavation into propodeum. Mesepimeron almost twice as high as broad. Hind coxa 2.3× as long as broad, bare dorsally in basal half, loosely and indistinctly reticulate. Basitarsus short, 0.27× the length of hind tibia, longer tibial spur 0.6× as long as basitarsus. Rows of setae on both surfaces of costal cell of fore wing rather thick, though absent from proximal 0.4 of the length of cell; on lower surface with additional setae in distal half. Basal cell with several scattered setae, open proximally below; speculum narrowly open proximally. SM:M:PM:ST as 59:37:14:6. Stigma large, oblique.

Gaster moderately compressed, slightly longer than mesosoma. Basal sternite 1.5× as long as hind coxa. Hypopygium approximately at 0.7 of the length of gaster. Ovipositor sheaths about as long as gaster plus 3/4 of mesosoma, index 2.75.

Colour. Body blue-green with violet spots on dorsum of thorax; scape dark except in lower third to one half; all coxae and hind femora blue-green; fore and mid femora and hind tibiae brown except at tips, legs otherwise testaceous, pale-yellow; claws dark. Venation testaceous.

Body length excluding ovipositor, 2.3 – 3.1 mm (holotype 2.4 mm).

♂ unknown.

Biology. Reared from seeds of *Cotoneaster melanocarpa* LODD.

Distribution. Northern Kazakhstan.

Etymology. The epithet is a first-hit expansion of *tertius*, the species being the third I describe.

Comparative notes. *T. terentianus* sp.nov. pertains to *varians*-species group. From both *T. varians* (WALKER) and *T. druparum* BOHEMAN it differs in having shorter ovipositor sheaths, less compressed gaster, and by smaller size. From *T. aucupariae* (RODZIANKO) the new species differs in longer pedicellus (in *aucupariae*, 1.6 – 1.7× as long as broad), narrower head (1.85× as broad as long in *aucupariae*), and in greenish-blue with violet colour of thorax which is green with golden tint in the latter. Also, the new species has a different host plant.

In the referred key, couplet 20 should be expanded as follows:

20 Scape less than 3.5× as long as broad and 0.7 – 0.8× breadth of eye ..... *T. gracilior* GRAHAM

\- Scape 3.8 – 4.1× as long as broad and 0.9 – 1.1× breadth of eye ..... *T. terentianus* sp.nov.

According to authors (GRAHAM, 1994; GRAHAM & GIJSWIJT, 1998) *T. gracilior* GRAHAM belongs to a different species-group, that of *cyaneus*. I examined females of *gracilior* (1 ♀, "Paratype", "FRANCE, Dépt. Gard, M. J. Gijswijt", "Crespion, langs Doulibre in struiken, 8.vi.1982", "Torymus gracilior M. de V. Graham det. 1994, paratype ♀"; 1 ♀, "ITALY – Abr., Prov l'Aquita, M. J. Gijswijt", "Gran Sasso d'Italia, S.E. slope, 1400 m, 17.vi.1993", "Torymus gracilior Graham, M. J. Gijswijt det. 1995") and found it very close to *terentianus* differing only (Fig. 8) in shorter scape (about 3× as long as broad), shorter pedicellus (less than 2× as long as broad, and 0.8× breadth of eye), and stouter flagellum (F1 about 1.1× as long as broad and distinctly stouter than anellus).

A key to species-groups *varians* and *cyaneus* is given; the composition of these groups is as follows:

varians-group: *T. varians* (WALKER), *T. druparum* BOHEMAN, *T. gracilior* GRAHAM, *T. terentianus* sp.nov., *T. aucupariae* (RODZIANKO).

cyaneus-group: *T. cyaneus* Walker, *T. macrurus* (FOERSTER), *T. affinis* (FONSCOLOMBE), *T. notatus* (WALKER), *T. cerri* (MAYR), *T. fastuosus* BOHEMAN.

1. Length of propodeum measured in the middle at most 0.6 that measured next to medial margin of propodeal spiracle. Parascrobal areas protruding by at least 1/3 the length of eye. Genae distinctly curved; head in front view nearly circular. Gaster tending to compressed; 1st gastral tergite at least 1.3× as long as hind coxa ..... *varians* species-group

– Length of propodeum measured in the middle at least 0.8 that measured next to spiracle. Parascrobal areas level with anterior margin of eyes. Genae straight; head in front view of irregular shape. Gaster not compressed; 1st gastral tergite not so long .... *cyaneus* species-group

While the former species group is quite clearly delimited, the latter is preserved here in the sense of GRAHAM (1994:21), and may be better subdivided in three subgroups: (a) *cyaneus* and *macrurus*; (b) *affinis*, *cerri* and *notatus*; and (c) *fastuosus*.

GRAHAM & GIJSWIJT (1998:55) mention that *Torymus arcticus* THOMSON had not been recorded elsewhere except in Swedish Lapland (its type locality). In SIZK, one ♀ of this species was found. It is labelled "Far East Russia Kunashir Isl., N. part of Yu-Kurilsk, Golovina Bay, 145°51.50' E 40°02.50' N, boggy meadow along Bolotnyi Ck, boggy meadow, 4.09.1977, Marusik."

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