

A review of the spider genus *Tibellus* Simon, 1875 of the East Palaearctic (Aranei: Philodromidae)

Обзор пауков рода *Tibellus* Simon, 1875 (Aranei: Philodromidae) Восточной Палеарктики

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КЛЮЧЕВЫЕ СЛОВА: пауки, *Tibellus*, таксономия, фаунистика, Восточная Палеарктика.

ABSTRACT: Eight species of the genus *Tibellus* appear to populate North Asia. A key to all species is provided, with all distributions mapped. *T. lineatus* Utotschkin, 1981 and *T. longicephalus* Utotschkin, 1981 are synonymised with *T. oblongus* (Walckenaer, 1802). Three new species are described: *T. fengi* sp.n. (female), *T. japonicus* sp.n. (female), and *T. orientus* sp.n. (male and female). The male of *T. aspersus* Danilov, 1991 is described for the first time.

РЕЗЮМЕ: Для фауны Северной Азии указываются 8 видов пауков рода *Tibellus*. Даны карты распространения и ключ для определения всех видов. Два вида впервые синонимизированы с *T. oblongus* (Walckenaer, 1802): *T. lineatus* Utotschkin, 1981 и *T. longicephalus* Utotschkin, 1981. Описаны три новых вида: *T. fengi* sp.n., *T. japonicus* sp.n. и *T. orientus* sp.n. Впервые описан самец *T. aspersus* Danilov, 1991.

Introduction

The crab-spider genus *Tibellus* belongs to usual inhabitants of grassy associations and is characterised by an elongate, slender body and long legs.

Although *Tibellus* is probably one of the smallest genera among the boreal philodromids in terms of the number of constituent species, it seems to be highly complicated taxonomically. The great morphological variability of and similarities between some of the congeners, especially *T. oblongus* (Walckenaer, 1802), *T. asiaticus* Kulczyński, 1908, *T. aspersus* Danilov, 1991 and *T. tenellus* (L. Koch, 1876), have resulted in several wrong descriptions and misidentifications.

The first record of *Tibellus* in Siberia belongs to Grube [1861]: *T. oblongus*, sub *Thanatus trilineatus* (P. Müller, 1775), at Nikolaevsk. Later, three species were described from North Asia: *T. asiaticus* from Yakutia

[Kulczyński, 1908], *T. lineatus* Utotschkin, 1981 from the Perm Area [Utotschkin, 1981, 1984], and *T. aspersus* from Buryatia [Danilov, 1991]. Until now, nine *Tibellus* species have been recognized in this region: *T. asiaticus*, *T. aspersus*, *T. macelius* Simon, 1875, *T. maritimus* (Menge, 1875), *T. oblongus*, *T. tenellus*, *T. lineatus*, *T. longicephalus* Utotschkin, 1981, and *T. parallelus* C.L. Koch, 1837. However, the latter four species must be excluded from the list of Siberian *Tibellus* for the following reasons.

(1) Based on a revision of the types of both *T. lineatus* and *T. longicephalus*, these names appear to be junior synonyms of *T. oblongus*.

(2) The records of *T. parallelus* in China [Song, 1987: ♂; Hu & Wu, 1989: ♀] are misidentifications and they actually belong to *T. oblongus*.

(3) Great confusion appears to exist as regards the identity of *T. tenellus*. The literature reveals the following. Illustrations were made from specimens belonging at least to three different species: (i) by Bösenberg & Strand [1906: ♂, ♀], Saito [1934: ♀] and Chikuni [1989: ♂, ♀], (ii) by Song [1987: ♂, ♀], and (iii) by Feng [1990: ♂, ♀]. The following arguments can be put forth to prove that all of these three drawing versions actually display three different species, yet obviously none referring to the original concept of L. Koch [1876]. There are some specimens corresponding to illustration versions (ii) and (iii) in material deriving from South Siberia and the Far East. In addition, five specimens of “*tenellus*” from Japan (courtesy of N. Tsurusaki) appear to be referred to drawing version (i). Unfortunately, the types of *T. tenellus*, described from Australia, can be presumed to be lost, as they have been located neither in the collection of the Senckenberg Museum, Frankfurt (courtesy of M. Grasshoff) nor in the Museum für Naturkunde, Berlin (courtesy of Sh. Nawai). As only topotypic material can shed light on the true identity of *T. tenellus*, at least for the time being the above three “*tenellus*” variants have been decided to be described as new species.

It is noteworthy that Marusik's [1989: 144] report of the holotype of *T. asiaticus* located in the collection of the Zoological Institute, Russian Academy of Sciences, St. Petersburg, Russia is false. This holotype (re-examined) is in the collection of the Institute of Zoology, Polish Academy of Sciences, Warsaw, Poland.

Thus, the objective of the present paper is to describe or rediagnose as well as to key all East Palaearctic species of *Tibellus*. Two new synonyms have become recognized during this study.

Material and methods

All specimens have been borrowed from or have been housed in the following museums: ISEN — Zoological Museum, Institute for Animal Systematics and Ecology, Novosibirsk, Russia (courtesy of D.V. Logunov); IZW — Institute of Zoology, Polish Academy of Sciences, Warsaw, Poland (courtesy of W.B. Jędryczkowski); NSMT — National Science Museum, Tokyo (courtesy of H. Ono); PSU — Department of Zoology, Perm State University, Perm, Russia (courtesy of S.L. Esyunin); UT — University of Turku, Turku, Finland (courtesy of S. Koponen and M. Saaristo); ZMMU — Zoological Museum of the Moscow State University, Moscow, Russia (courtesy of K.G. Mikhailov).

The following abbreviations have been accepted in the text and figures: a — apically, C — cymbium, CD — copulatory ducts, CO — copulatory opening, COG — copulatory opening guide, CON — conductor, d — dorsally, E — embolus, ET — embolus tip, FD — fertilization ducts, MOA-L — median ocular area length, MOA-WA — width of anterior median ocular area, MOA-WP — width of posterior median ocular area, MS — median septum, PE — posterior extension, pr — prolaterally, rt — retrolaterally, RTA — retrolateral tibial apophysis, S — spermatheca, s.d. — same district, SG — spermathecal gland, SGD — spermathecal gland ducts, s.lo. — same locality, T — tegulum, v — ventrally.

The bulk of material treated below was collected by the following persons: A.B. — A.M. Basarukin; B.Z. — B.P. Zakharov; D.L. — D.V. Logunov; O.L. — O.V. Lyakhov; S.E. — S.L. Esyunin; V.E. — V.E. Efimik; V.P. — V.I. Pereleshina; Y.M. — Y.M. Marusik.

For leg spination, the system is that used by Logunov [1996]. All measurements are in millimeters. Scale — 0.1 mm.

Morphological terms and the nomenclature for the genitalia accepted in the text are chiefly those used by Van den Berg & Dippenaar-Schoeman [1994], with the exception that the term "conductor" sensu Schick [1965] substitutes the "membranous philodromid conductor" sensu Logunov [1996].

Synopsis

Tibellus tenellus sibirica Utotschkin, 1980 — a nomen nudum

New taxa described:

Tibellus fengi sp.n. (female, the Primorye Province and China)

Tibellus japonicus sp.n. (female, southern Sakhalin and Japan)

Tibellus orientus sp.n. (male and female, South Siberia and China)

New synonymy:

Tibellus lineatus Utotschkin, 1981 = *T. oblongus* (Walckenaer, 1802)

Tibellus longicephalus Utotschkin, 1981 = *T. oblongus* (Walckenaer, 1802)

Species excluded from the list:

Tibellus tenellus L. Koch, 1876

Tibellus parallelus (C.L. Koch, 1837)

Survey of species

Genus *Tibellus* Simon, 1875

Type species: *Aranea oblonga* Walckenaer, 1802

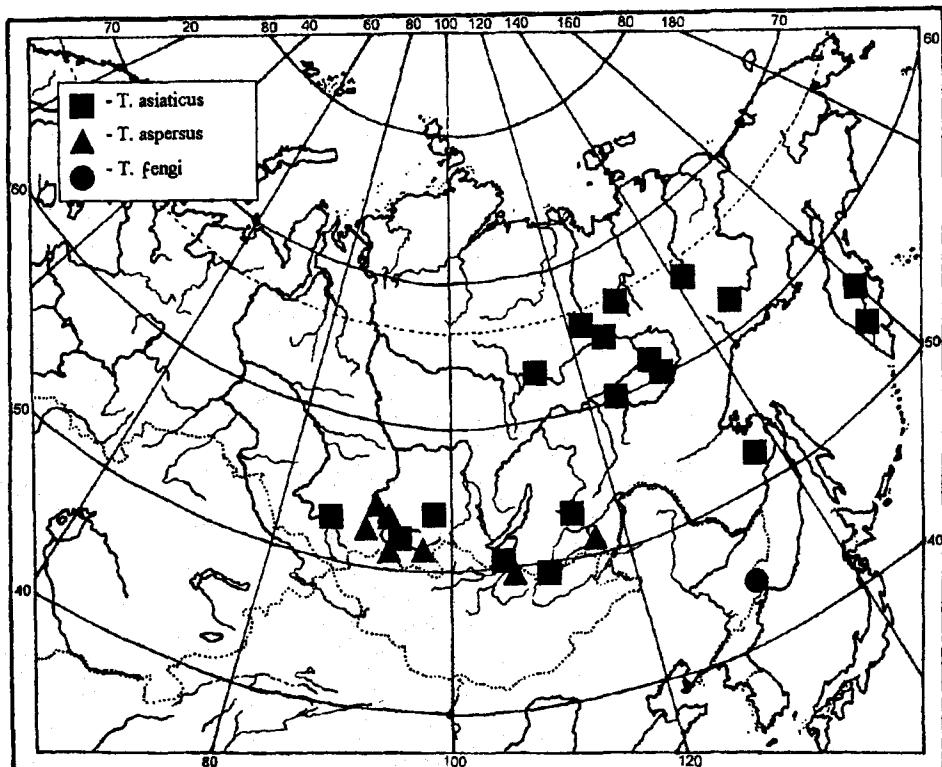
DISCRIPTION: Total length 4.3–10.2. Carapace longer than wide, smoothly convex at lateral margins, creamy white to red-brown with a brown median and a pair of marginal stripes. Posterior row of eyes strongly recurved; posterior median eyes distinctly closer to each other than to posterior lateral eyes. Sternum yellow with brown spots or with dark edges. Legs long, slender, yellow or brown with dark rings, sometimes with longitudinal stripes; leg II longest. Abdomen elongate, slender, usually narrower than carapace, yellow-white, dorsum with a dull lanceolate marking, a hardly visible median stripe and sometimes with 1–2 pairs of dark spots; venter creamy, sometimes with 1–2 brown longitudinal stripes. Palpal tibia with or without small retrolateral apophysis. Embolus short, situated at anterior end of tegulum. Tip of embolus varying in shape. Epigyne with median septum bordered by copulatory ducts; copulatory openings surrounded by guides. Spermathecae ovoid, with or without posterior extension; spermathecal gland present, with or, sometimes, without ducts.

DIAGNOSIS: Among the Holarctic philodromid genera, *Tibellus* is similar to *Paratibellus* Simon, 1932 (9 ♀♀, 2 ♂♂ from the Stavropol Province, examined) by the elongate, slender body and legs, but it can be distinguished easily as follows: carapace and abdomen with a dark dorsomedial stripe; posterior median eyes distinctly closer to each other than to posterior lateral eyes; posterior row of eyes strongly recurved; embolus tip of male palp short, not arcuate; palpal tibia without ventral apophysis; epigyne without lateral guide pocket.

KEY TO EAST PALAEARCTIC SPECIES OF *TIBELLUS*:

Males.

1. Base of cymbium with 6 spines (Figs 12, 13) *asiaticus* Kulczyński
— Base of cymbium with 3–4 spines 2.
2. Base of cymbium with 4 spines (Figs 14, 17) 3.
— Base of cymbium with 3 spines (Figs 15, 16, 18–20) 4.
3. Tip of embolus open; front edge of base of tip of embolus with (Figs 21, 84, 90) or, sometimes, without angular broadening (Figs 22, 89). Venter of abdomen with two brown longitudinal stripes *orientus* sp.n.



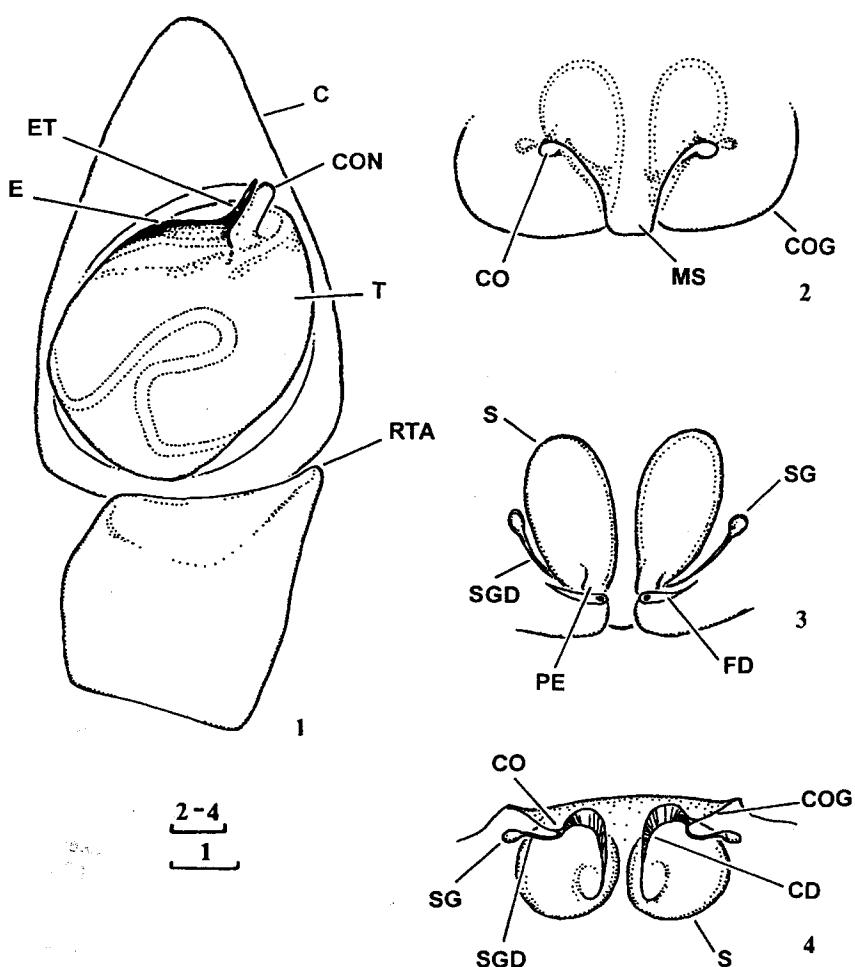
Map 1. Distribution of *Tibellus asiaticus*, *T. aspersus* and *T. fengi* sp.n.

Карта 1. Распространение *Tibellus asiaticus*, *T. aspersus* и *T. fengi* sp.n.

- Tip of embolus hidden, with a smooth front edge (Figs 23, 61). Venter of abdomen with a brown longitudinal stripe *aspersus* Danilov
- 4. Basal part of embolus expanded, grooved and ridged (Figs 27–28, 71) *maritimus* (Menge)
- Embolus with basal part neither expanded nor grooved, nor ridged (Figs 25–26) 5.
- 5. Embolus visible all over in ventral view (Fig. 72). Tip of embolus long, straight, with a small spiral notch on top (Fig. 26). Conductor present, protruding (Figs 77–79). Retrolateral tibial apophysis less than half as high as tibia (Fig. 78) *oblongus* (Walckenaer)
- Embolus hidden for nearly its entire length in ventral view (Fig. 66). Tip of embolus somewhat twisted (Fig. 25). Conductor depressed, absent. Retrolateral tibial apophysis half as high as tibia (Fig. 67) *macellus* Simon
- 5. Copulatory openings wide (Figs 38, 50, 80–83) *oblongus* (Walckenaer)
- Copulatory openings small, narrow (Figs 33, 49, 68–70) *macellus* Simon
- 6. Copulatory opening guide encircling copulatory openings from behind (Fig. 86). Abdomen with two brown longitudinal narrow stripes ventrally *orientus* sp.n.
- Copulatory opening guide not encircling copulatory openings from behind (Figs 56–58, 63). Abdomen with one brown longitudinal narrow stripe ventrally 7.
- 7. Spermathecal posterior extension long (Fig. 40). Copulatory opening guide together with copulatory ducts forming a nearly right angle (Fig. 63) *aspersus* Danilov
- Spermathecal posterior extension very short (Figs 31, 39). Copulatory opening guide together with copulatory ducts forming an obtuse angle (Figs 56–58) *asiaticus* Kulczyński

Females:

- 1. Spination of tibiae I–II: 2-2-2-2a *japonicus* sp.n.
 - Spination of tibiae I–II: 2-2-2a 2.
 - 2. Copulatory openings near center of epigyne (Figs 64, 73–75) 3.
 - Copulatory openings near posterior or lateral margins of epigyne (Figs 56–58, 63, 68–70, 80–83, 86) 4.
 - 3. Copulatory opening guide reaching the posterior margins of epigyne (Figs 73–75). Spermathecal gland with ducts (Fig. 51) *maritimus* (Menge)
 - Copulatory opening guides considerably far from reaching the posterior margins of epigyne (Fig. 64). Spermathecal gland without ducts (Fig. 54) *fengi* sp.n.
 - 4. Copulatory openings near posterior margins of epigyne (Figs 68–70, 80–83) 5.
 - Copulatory openings near lateral margins of epigyne (Figs 56–58, 59, 86) 6.
- Tibellus asiaticus* Kulczyński, 1908
Figs 12, 13, 24, 31, 39, 47, 55–60.
- Tibellus asiaticus* Kulczyński, 1908: 4, 68–69, pl. 2, fig. 79 (♀ holotype, re-examined).
- Tibellus gertschi* Chamberlin & Ivie, 1942: 81, figs 230–231 (♂, ♀, not examined). Synonymized with *T. asiaticus* by Marusik [1989].
- Tibellus gertschi*: Dondale & Redner, 1978: 101, figs 333–337 (♂, ♀, not examined).
- Material examined: RUSSIA: 1 ♀ (IZW, 46/51.U, holotype), Yakutia, Dolgulach, 24.06–4.07.1885 (W. Kulczyński); 1 ♂ (ISEN), Altai Province, Ust-Koksa Distr., 3–4 km of Mt. Belukha, alpine meadows, 12–20.07.1977 (S. Reshetnikov); 1 ♀ (ISEN, Ph.132), Tuva, West Sayan, Kurtushybinski Mt. Range, 8–10 km NW of Shyviliq, meadow, 6.07.1990 (D.L.); 1 ♀ (ISEN Ph.237), same province, environs of Kyzyl, 1.07.1990 (D.L.); 1 ♀ (ISEN),



Figs 1–4. Copulatory organs of *Tibellus* spp: 1 — *T. oblongus*, ♂ palpus; 2 — *T. maritimus*, epigyne; 3 — *T. oblongus*, spermathecae, dorsal view; 4 — *T. macellus*, caudal view. Explanations in the text.

Рис. 1–4. Копулятивные органы *Tibellus* spp: 1 — *T. oblongus*, пальпа ♂; 2 — *T. maritimus*, эпигина; 3 — *T. oblongus*, сперматека, вид сверху; 4 — *T. macellus*, то же, вид сзади. Пояснения в тексте.

same province, 35 km W of Oo-Shinaa, Lake Amdygan, 19.07.1993 (D.L.); 1 ♀ (ISEN), Chita Area, Kyra Distr., 60 km SW of Kyra, Sokhonda Reserve, 1,300–1,400 m a.s.l., 5.08.1991 (V. Dubatolov); 1 ♀ (ISEN), same reserve, 1300 m, *Larix & Betula* forest, 14.06.1991 (D.L.); 1 ♂ (ISEN), Buryatia, Selenga Distr., Taezhnyi, 30.07.1984 (B. Zakharov); 2 ♂♂ (ISEN), s.lo., 10.08.1984, (B.Z.); 1 ♀ (PSU), Transbaikalia, between Goryachansk and Tataurov stations, 22–24.08.1907 (D. Smirnov); Yakutia: 1 ♀ (PSU), right bank of Lena River, 6.07.1925 (leg. L. Bianki, det. A. Utotschkin as *T. tenellus*); 1 ♀ (PSU), date, coll. ??; 1 ♀ (ZMMU), Magadan Area, Tenkinskii Distr., upper flow of Kolyma River, foothills of Bolshoi Annachag Mt. Range, Sibit-Tyellakh River Basin, Aborigen Research Station, 15–16.06.1983 (Y.M.); 2 ♀♀ (ZMMU), s.lo., summer 1986 (Y.M.); 8 ♂♂ (ZMMU), s.lo., summer 1985 (Y.M.); 1 ♀ (ZMMU, Ta-2364), Kamchatka Area, Kamchatka River, Krasnyi Yar, 19.08.1930 (V.P.); 1 ♀ (ZMMU, Ta-2365), s.lo., 11.08.1930 (V.P.); 3 ♀♀ (ZMMU, Ta-2368), s.lo., 13.08.1930 (V.P.); 1 ♂, 1 ♀ (ZMMU, Ta-2362), s.lo., 23.07.1930 (V.P.); 3 ♀♀ (ZMMU, Ta-2363), s.lo., Dolgii plyazh, 26.08.1930 (V.P.); 1 ♂, 5 ♀♀ (ZMMU), lower flow of Belya River, 15.08.1930 (V.P.).

DIAGNOSIS: *T. asiaticus* is very similar to *T. aspersus* and *T. orientus* sp.n. but it can be separated by the greatest number of spines (six) at the base of the cymbium (Figs 12 & 13), the shape of the embolus (Fig. 24), the shape of the epigyne and the structure of the spermathecae: copulatory opening guide together with copulatory ducts forming an obtuse angle (Figs 56–58); spermathecal posterior extension long (Fig. 40).

DISTRIBUTION: Siberia (Map 1), North America (Donald & Redner, 1978: as *T. gertschi*).

HABITATS: Meadows, alpine meadows, larch-birch forests.

DESCRIPTION: MALE. Measurements. Total length 7.0–8.7. Carapace 3.3–3.5 long, 2.7–2.9 wide. Median ocular area: MOA-WA 0.41, MOA-WP 0.53, MOA-L 0.44. Clypeal height 0.44. Cheliceral length 0.94. Length of leg segments: Leg femur patella tibia metatarsus tarsus I 3.30–4.05 1.41–1.62 3.00–3.60 2.58–3.22 1.83–2.12 II 3.80–4.89 1.53–1.82 3.73–4.49 3.12–4.05 2.22–2.47 III 3.30–3.58 1.10–1.27 2.53–2.96 1.80–2.47 1.42–1.68 IV 4.12–4.84 1.31–1.48 3.44–3.75 2.82–3.53 1.72–1.98

Leg spination: Legs I–IV: femur (d, pr, rt), tibia (pr, rt) I–1–1; tibia d 0–0–1, v 2–2–2a. Metatarsus: I — pr 1(2)–1, rt 1–1–0, v 2–2; II — pr 1–1–1, rt 1–1–0, v 2–2; III — pr 1–1–1, rt 1–1–1(2), v 2–2, IV — pr 1–1–2(1)a, rt 1–1–1a, v 2–2–1a. Spination of cymbium: six spines at base (Figs 12, 13).

COLOURATION: Carapace yellowish-brown to red-brown with a median longitudinal dark stripe extending from PME to posterior edge, and with marginal longitudinal stripes. Legs and carapace with fine dirty brown flecks. Sternum yellow with dirty brown spots. Abdomen dirty yellow, dorsum with a narrow lanceolate marking covered with a brown median longitudinal stripe; with two brown interrupted strips on both sides of the median stripe; sometimes with scattered dirty

Figs 5–8. Body colouration of *Tibellus* spp. (♀♀): 5 — *T. asiaticus*, holotype; 6 — ditto, from Magadan Area; 7 — *T. aspersus*; 8 — *T. macellus*. Scale: 0.5 mm.

Рис. 5–8. Окраска тела *Tibellus* spp. (♀♀): 5 — *T. asiaticus*, голотип; 6 — то же, из Магаданской области; 7 — *T. aspersus*; 8 — *T. macellus*. Масштаб: 0,5 мм.

brown flecks. Venter with a brown median stripe extending from epigastric furrow to spinnerets.

Palpal structure as in Figs 24, 55, 59 & 60.

FEMALE. Measurements. Total length 8.4–11.5. Carapace 2.7–4.3 long, 2.5–3.5 wide. Median ocular area: MOA-WA 0.41, MOA-WP 0.38, MOA-L 0.44. Clypeal height 0.44. Cheliceral length 1.20. Length of leg segments:

Leg	femur	patella	tibia	metatarsus	tarsus
I	3.10–4.13	1.31–1.88	2.74–3.30	2.08–2.82	1.43–2.12
II	3.60–4.49	1.53–1.72	3.23–4.00	2.52–3.18	1.62–2.08
III	2.80–3.68	1.10–1.27	2.00–2.97	1.80–2.30	1.22–1.50
IV	3.32–4.64	1.15–1.48	2.84–3.75	2.32–3.10	1.35–1.80

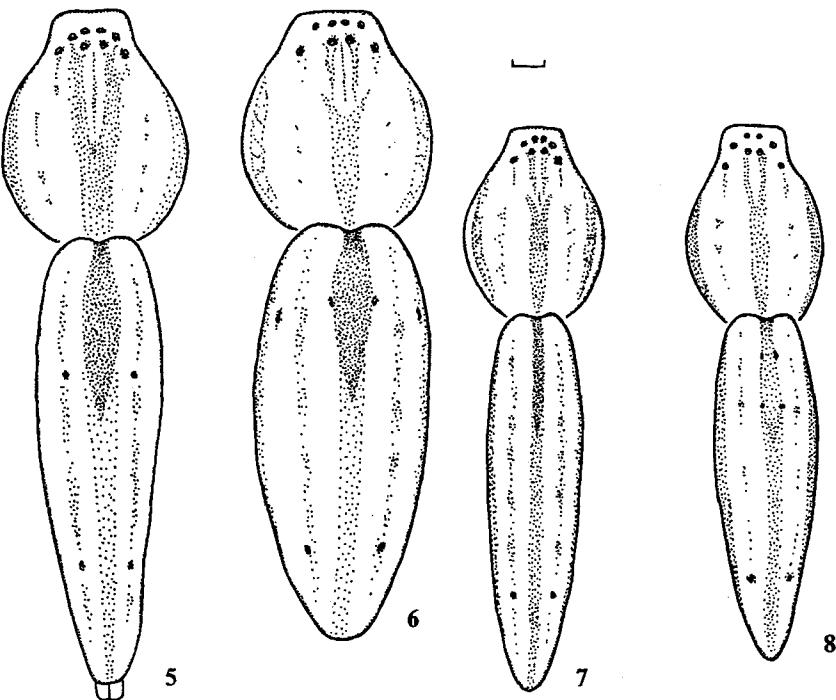
Leg spination. Leg I: femur d 0-1-1, pr and rt 1-1-1; tibia d 0-0-1, pr and rt 1-1-1, v 2-2-2a; metatarsus pr and rt 1-1-0, v 2-2. Legs II–III: femur d, pr and rt 1-1-1; tibia d 0-0-1, pr and rt 1-1-1, v 2-2-2a; metatarsus pr and rt 1-1-0, v 2-2. Leg IV: femur d, pr 1-1-1, rt 0-0-1; tibia d 1-0-1, pr, rt 1-1-1, v 2-2-2a; metatarsus pr 1-1-2a(1a), rt 1-1, v 2-2-1a.

Colouration as described for male but slightly lighter. See also Figs 5 & 6. Epigyne and spermathecae as in Figs 31, 39, 47, 56–58.

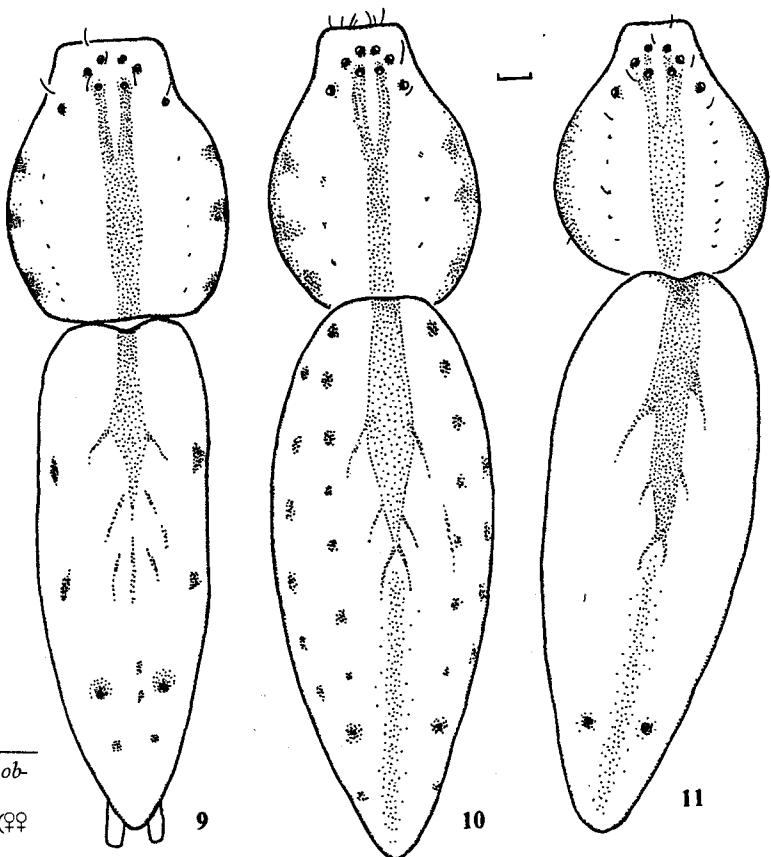
Tibellus aspersus Danilov, 1991
Figs 7, 14, 23, 32, 40, 48, 63, 61–62.

Tibellus aspersus Danilov, 1991: 139–140, figs 1, 2 (♀ holotype, re-examined).

Material examined: RUSSIA: Buryatia: 1 ♀ (ZMMU, holotype), Kyakhta Distr., Ust-Kiran, 30.07.1988 (S. Danilov); Tuva: 2 ♂♂ (ISEN Ph.132–133), West Sayan, Kurtushybinski Mt. Range, 8–10 km NW of Shiyvilig, meadows, 6.07.1990 (leg. D.L. det. O.L. as *T. asiaticus*); 2 ♀♀ (ISEN), NE bank of Lake Ubsu-Nur, 1,700 m as.l., *Potentilla* association, 18.07.1993 (D.L.); 2 ♂♂, 2 ♀♀ (ISEN), s.lo., shrubby steppe, 50°40'N, 92°58'E,

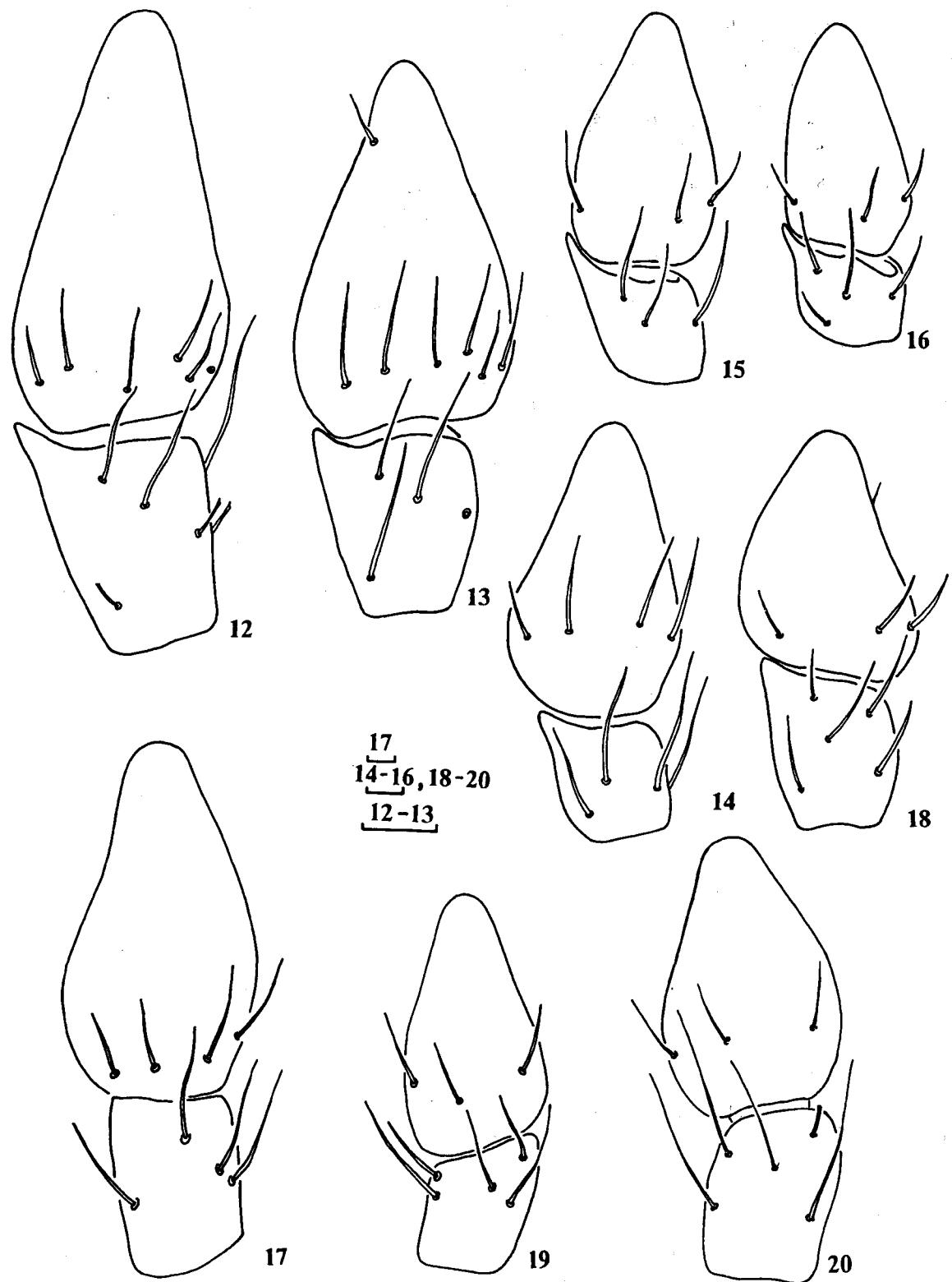


14.06.1995 (Y.M., D.L.); 1 ♂ (ISEN Ph.237), environs of Kyzyl, 1.07.1990 (leg. D.L., det. O.L. as *T. asiaticus*). 1 ♂ (ISEN), 13–15 km of Khandagaity, Kham-Dag River, 25.07.1993 (D.L.); 2 ♂♂, 3 ♀♀ (ZMMU), 15 km E of Kyzyl, environs of Kaa-Khem River, 800–1200 m, 16–18.06.1996 (Y.M.); 1 ♀ (PSU), 1.5 km E of Samagalai Valley, Samagalai River, *Caragana* shrubby steppe,



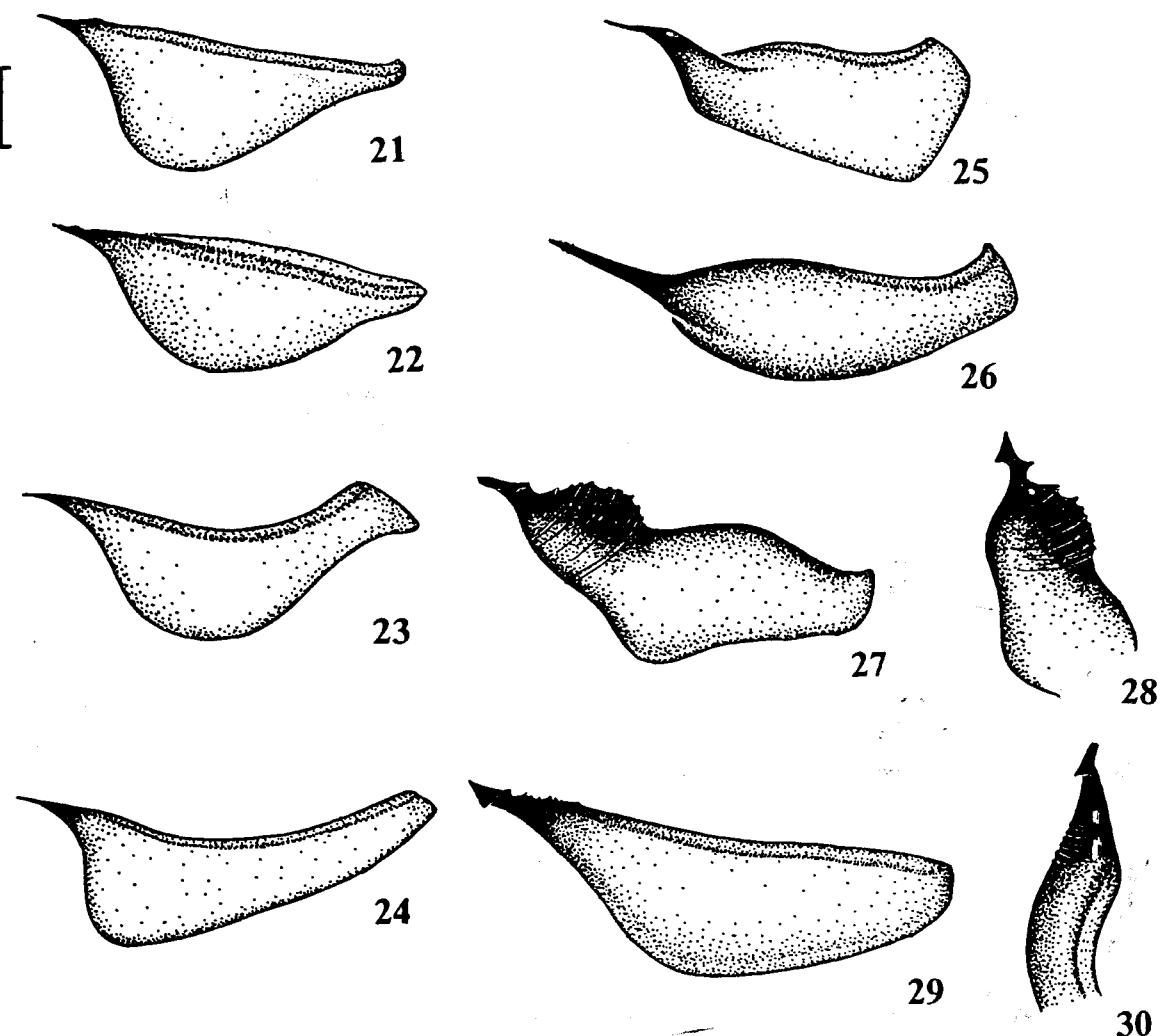
Figs 9–11. Body colouration of *Tibellus oblongus* (♀♀), Chelyabinsk Area. Scale: 0.5 mm.

Рис. 9–11. Окраска тела *Tibellus oblongus* (♀♀) из Челябинской области. Масштаб: 0,5 мм.



Figs 12–20. Spination of cymbium and palpal tibia of *Tibellus* spp.: 12–13 — *T. asiaticus* (Magadan Area); 14 — *T. aspersus* (Tuva); 15–16 — *T. macellus* (Bashkiria and Chelyabinsk Area, respectively); 17 — *T. orientus* sp.n. (Chita Area); 18 — *T. oblongus*; 19–20 — *T. maritimus* (Chelyabinsk Area).

Рис. 12–20. Вооружение цымбиума и голени пальпа *Tibellus* spp.: 12–13 — *T. asiaticus* (Магаданская область); 14 — *T. aspersus* (Тува); 15–16 — *T. macellus* (соответственно Башкирия и Челябинская область); 17 — *T. orientus* sp.n. (Читинская область); 18 — *T. oblongus*; 19–20 — *T. maritimus* (Челябинская область).



Figs 21–30. Embolus of *Tibellus* spp.: 21–22 — *T. orientus* sp.n. (Chita Area and Buryatia, respectively); 23 — *T. aspersus*; 24 — *T. asiaticus*; 25 — *T. macellus*; 26 — *T. oblongus*; 27–30 — *T. maritimus*.

Рис. 21–30. Эмболяс *Tibellus* spp.: 21–22 — *T. orientus* sp.n. (соответственно Читинская область и Бурятия); 23 — *T. aspersus*; 24 — *T. asiaticus*; 25 — *T. macellus*; 26 — *T. oblongus*; 27–30 — *T. maritimus*.

14.07.1993 (D.L.); 1 ♂ (ISEN), Lake Terekhol, Shalaa, settlement and around it, 50°01'47"N, 95°03'45"E, 1,050 m a.s.l., 6–14.07.1996 (Y.M.); 1 ♀ (ISEN), Erzin Distr., 20 km NW of Erzin, Lake Dus-Khol, 800–900 m a.s.l., (D.L., Abramov); Krasnoyarsk Province: 2 ♀♀ (ISEN Ph.129–130), Khakassia, Askiz Distr., 25 km NE of Askiz, stony steppe, 2.07.1990 (leg. D.L., det. O.L. as *T. asiaticus*); 2 ♀♀ (ISEN Ph.140–141), 40 km SE of Belyi Yar, steppe, 23.06.1990 (D.L.); 1 ♀ (ISEN Ph.102) Yermakovskoye Distr., 15 km E of Yermakovskoye, forest edge, 2.06.1990 (D.L.); 1 ♀ (PSU), Chita Area, environs of Nizhnii Tsasuchei, 08.1996 (V. Dubatolov); 1 ♂ (ISEN), Primorye Province, Lake Khanka, CE shore, 45°12'N, 131°71'E, 17–18.07.1998 (Y.M.).

DIAGNOSIS: *T. aspersus* is very similar to *T. asiaticus* and *T. orientus* sp.n. but can be separated from *T. asiaticus* by the smaller number of spines (four) at the base of the cymbium (Fig. 14), the shape of the embolus (Fig. 23), the shape of the epigyne and the structure of the spermathecae: copulatory opening guide together with copulatory ducts forming a nearly right angle (Fig. 63), spermathecal posterior extension long (Fig. 40). Specimens of *T. aspersus* differ from those of *T. orientus* sp.n. by a single longitudinal stripe on the venter of the abdomen, the smooth front edge of the embolus tip (Figs

23 & 61), the long spermathecal posterior extension of the spermathecae, and the shape of the epigyne.

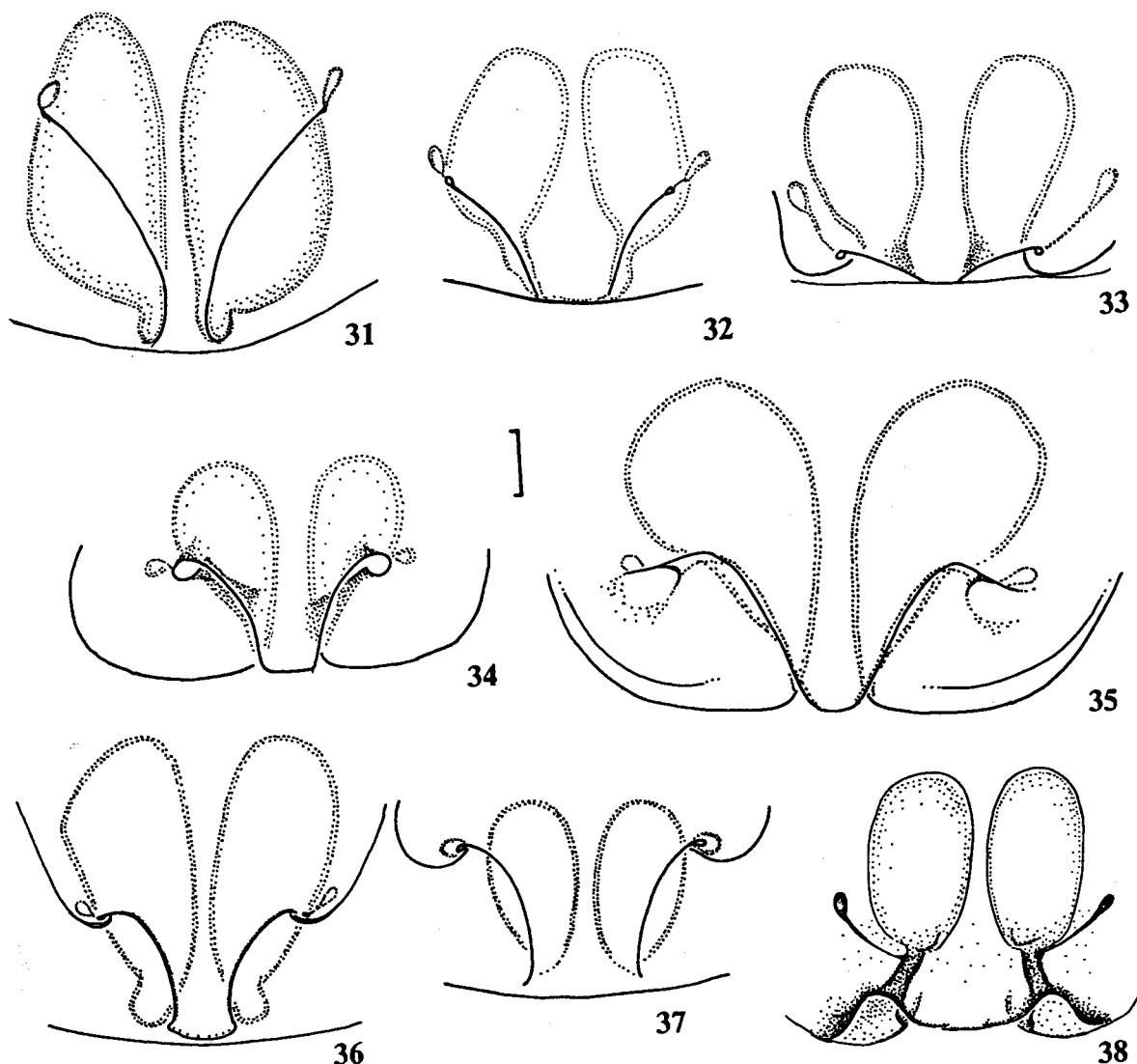
DISTRIBUTION: South Siberia (Map 1). Type locality: Buryatia [Danilov, 1991, in 1995 as *T. tenellus*; Mikhailov, 1997].

HABITATS: Meadows, steppe, stony steppe, forest edges.

DESCRIPTION: MALE. Measurements. Total length 4.9–7.3. Carapace 2.0–2.8 long, 1.7–2.2 wide. Median ocular area: MOA-WA 0.34, MOA-WP 0.41, MOA-L 0.39. Clypeal height 0.34. Cheliceral length 0.87. Length of leg segments:

	Leg femur	patella	tibia	metatarsus	tarsus
I	2.30–2.93	1.00–1.22	2.05–2.48	1.65–2.12	1.13–1.50
II	2.78–3.19	1.13–1.32	2.43–3.00	2.10–2.48	1.32–1.58
III	2.40–2.52	0.71–1.00	1.74–2.07	1.54–1.73	1.12–1.15
IV	2.95–3.24	0.93–1.12	2.44–2.85	2.21–2.70	1.17–1.51

Leg spination. Legs I–IV: femur d, pr and rt 1-1-1, tibia d 0-0-1, pr and rt 1-1-1, v 2-2-2a. Metatarsus: I-II — pr and rt 1-1-0, v 2-2; III — pr 1-1-1, rt 1-1-0, v 2-2; IV — pr 1-1-1(2)a, rt 1-1-0(1)a, v 2-2-1a. Spination of cymbium: four spines at base (Fig. 14).



Figs 31–38. Spermathecae of *Tibellus* spp., ventral view: 31 — *T. asiaticus*; 32 — *T. aspersus*; 33 — *T. macellus*; 34 — *T. maritimus*; 35 — *T. japonicus* sp.n.; 36 — *T. orientus* sp.n.; 37 — *T. fengi* sp.n.; 38 — *T. oblongus*.

Рис. 31–38. Сперматеки *Tibellus* spp., вид снизу: 31 — *T. asiaticus*; 32 — *T. aspersus*; 33 — *T. macellus*; 34 — *T. maritimus*; 35 — *T. japonicus* sp.n.; 36 — *T. orientus* sp.n.; 37 — *T. fengi* sp.n.; 38 — *T. oblongus*.

Colouration. Carapace yellow-red, with a median and marginal stripes brown. Legs coloured like carapace, prolaternal and retro-lateral parts as well as dorsum with dirty brown flecks. Sternum creamy, with brown points. Abdomen creamy white to dark creamy, dorsum with a dirty brown median longitudinal stripe. No lanceolate marking visible. Two interrupted strips on both sides of median stripes poorly expressed. Venter creamy, with a dirty brown median stripe.

Palpal structure as in Figs 23, 61 and 62.

FEMALE. Measurements. Total length 7.1–9.6. Carapace 2.4–3.4 long, 2.0–2.5 wide. Median ocular area: MOA-WA 0.32, MOA-WP 0.44, MOA-L 0.39. Clypeal height 0.33. Cheliceral length 0.81. Length of leg segments:

	Leg femur	patella	tibia	metatarsus	tarsus
I	2.80–3.73	1.12–1.52	2.18–3.00	1.75–2.42	1.23–1.40
II	3.19–4.08	1.13–1.42	2.65–3.00	2.00–2.43	1.42–1.53
III	2.20–2.92	0.81–1.20	1.64–2.19	1.41–1.83	0.85–1.23
IV	3.12–4.24	0.93–1.31	2.44–3.00	2.00–2.82	1.11–1.63

Leg spination. Legs I-II: femur d 1(0)-1-1, pr and rt 1-1-1; tibia pr and rt 1-1-1, v 2-2-2a; metatarsus pr and rt 1-1, v 2-2. Leg III: femur d and pr 1-1-1, rt 0-0-1; tibia pr 1-1-1, rt 1(0)-1(0)-1, v 2-2-2a; metatarsus as in legs I-II. Leg IV: femur d 1-1-1, pr and rt 0-0-1; tibia as in legs I-II; metatarsus pr 1-1-1(2)a, rt 1-1, v 2-2-1a.

Colouration as described for male. See also Fig. 7. Epigyne and spermathecae as in Figs 32, 40, 48 & 63.

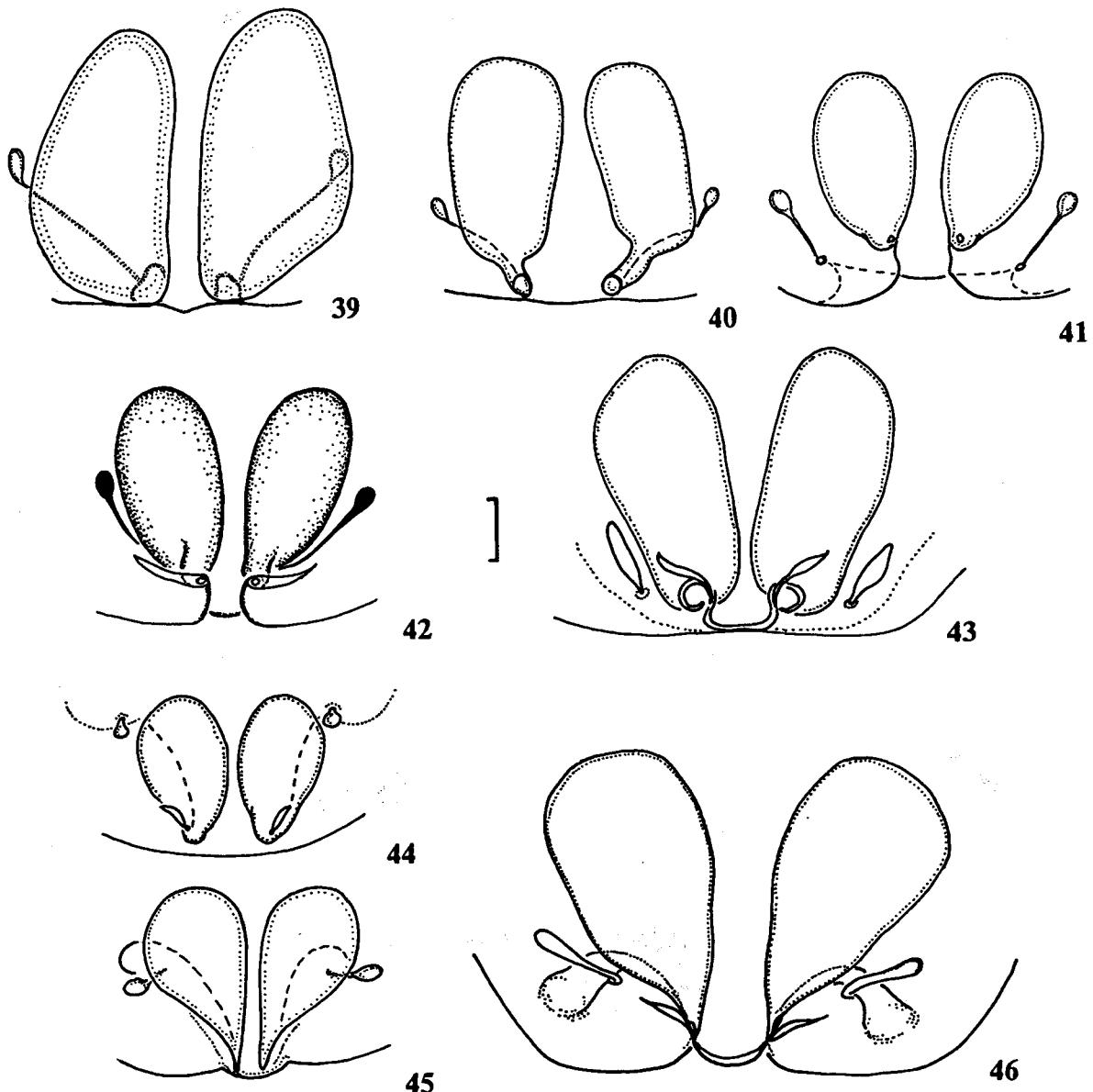
Tibellus fengi sp.n.

Figs 3, 4, 37, 44, 64.

Tibellus tenellus non L. Koch, 1876: Feng, 1990: 196, figs. 1–4 (♂, ♀, not examined).

Holotype: 1♀ (ZMMU), Primorye Province, Khorol, 16.06.1981 (G. Belova).

Paratype: 1 ♀ (ISEN), Primorye Province, Khasan Distr., Khasan, environs of Lake Talmal, 27.06.1976 (B.Z.).



Figs 39–46. Spermathecae of *Tibellus* spp., dorsal view: 39 — *T. asiaticus*; 40 — *T. aspersus*; 41 — *T. macellus*; 42 — *T. oblongus*; 43 — *T. orientus* sp.n.; 44 — *T. fengi* sp.n.; 45 — *T. maritimus*; 46 — *T. japonicus* sp.n.

Рис. 39–46. Сперматеки *Tibellus* spp., вид сверху: 39 — *T. asiaticus*; 40 — *T. aspersus*; 41 — *T. macellus*; 42 — *T. oblongus*; 43 — *T. orientus* sp.n.; 44 — *T. fengi* sp.n.; 45 — *T. maritimus*; 46 — *T. japonicus* sp.n.

DIAGNOSIS: Differs from congeners chiefly by the central position of the copulatory openings, the semi-circular copulatory opening guides surrounding the copulatory openings (Fig. 64), the spermathecal gland without ducts (Fig. 54), the short embolus and the shape of the distal end of the tegulum divided into two parts (see the description of the male in Feng [1990: 196, fig. 171]). *T. fengi* sp.n. is closely related to *T. orientus* sp.n. by the structure of the endogyne (see caudal view: figs 53 & 54), with which it has been confused.

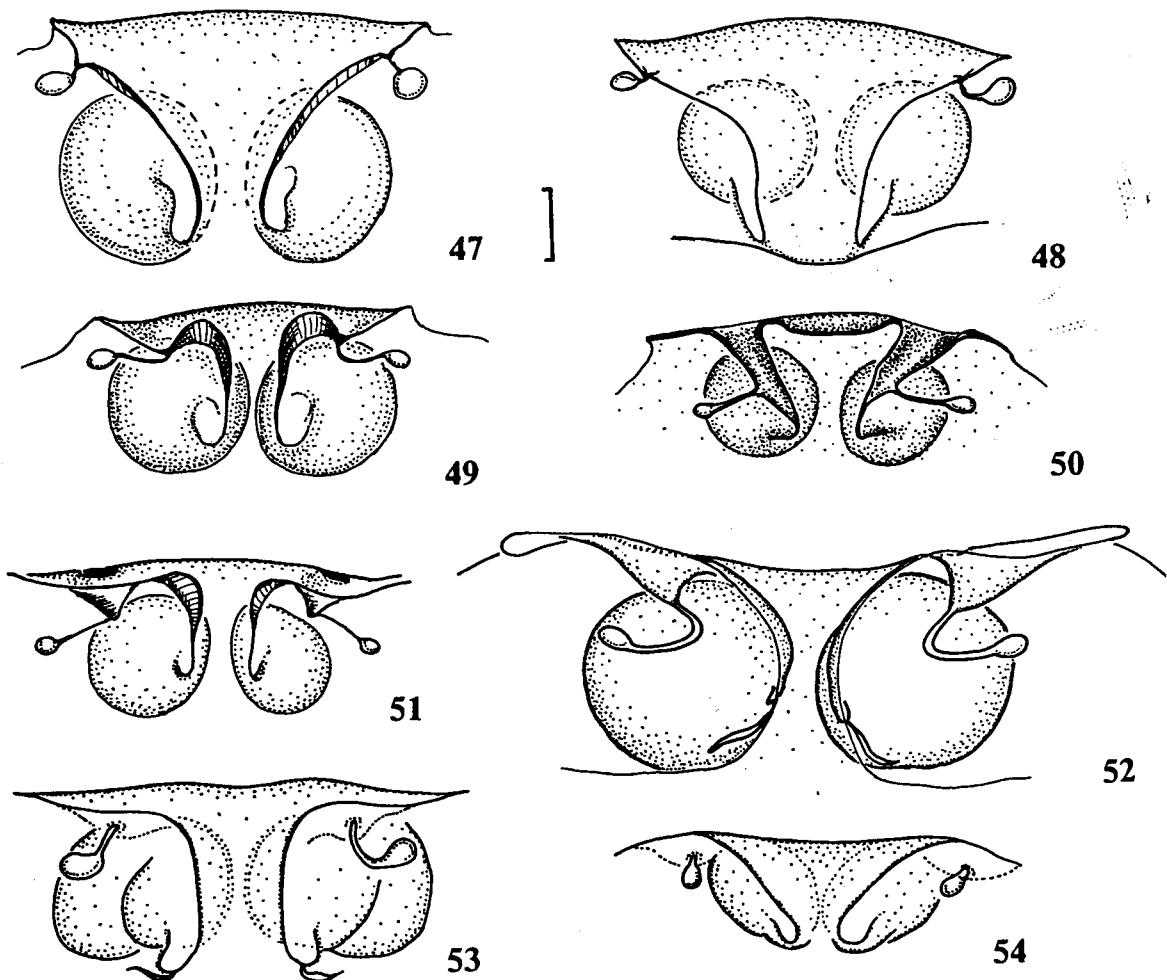
DISTRIBUTION: Southern Primorye Province (Map 1) and China: Heilongjiang, Liaoning, Henan, Hunan, Jiangxi (Feng, 1990: sub *T. tenellus*).

DESCRIPTION: MALE. See Feng [1990] (as *T. tenellus* (L. Koch, 1876): 196, figs 3 & 4).

FEMALE. Measurements (paratype/holotype). Total length 10.0 / 10.2. Carapace 2.5 / 3.1 long, 1.9 / 2.35 wide. Median ocular area: MOA-WA 0.25, MOA-WP 0.38, MOA-L 0.31. Clypeal height 0.25 / 0.4. Cheliceral length 0.81 / 1.2. Length of leg segments:

	Leg femur	patella	tibia	metatarsus	tarsus
I	2.72/4.15	1.11/1.35	2.43/3.40	1.73/2.55	1.22/1.65
II	2.92/4.25	1.13/1.50	2.71/3.85	2.20/3.25	1.53/2.00
III	2.20/2.95	0.80/1.00	1.63/2.11	1.33/1.80	0.82/1.13
IV	3.24/4.31	1.00/1.38	2.42/3.8	1.90/2.87	1.24/1.53

Leg spination. Legs I-II: femur d, pr and rt 1-1-1; tibia pr and rt 1-1-1, v 2-2-2a; metatarsus pr and rt 1-1, v 2-2. Leg III: femur d and pr 1-1-1, rt 0-0-1; tibia pr and rt 1-1-1, v 2-2-2a; metatarsus pr and rt 1-1, v 2-2. Leg IV: femur d 1-1-1, pr 0-



Figs 47–54. Spermathecae of *Tibellus* spp., caudal view: 47 — *T. asiaticus*; 48 — *T. aspersus*; 49 — *T. macellus*; 50 — *T. oblongus*; 51 — *T. maritimus*; 52 — *T. japonicus* sp.n.; 53 — *T. orientus* sp.n.; 54 — *T. fengi* sp.n.

Рис. 47–54. Сперматеки *Tibellus* spp., вид сзади: 47 — *T. asiaticus*; 48 — *T. aspersus*; 49 — *T. macellus*; 50 — *T. oblongus*; 51 — *T. maritimus*; 52 — *T. japonicus* sp.n.; 53 — *T. orientus* sp.n.; 54 — *T. fengi* sp.n.

1-1, rt 0-0-1; tibia pr and rt 1-1-1, v 2-2-2a; metatarsus pr 1-1-1a, rt 1-1, v 2-2.

Colouration. Carapace yellow-white or yellow-red, with a pale-brown median and with marginal stripes. Sternum creamy yellow. Legs dirty brown or yellow, tibia and metatarsus with or without outstretched spines to nearly true spines. Abdomen yellow-white, dorsum with a dull lanceolate marking and a hardly visible median stripe.

Epigyne and spermathecae as in Figs. 37, 44 & 64.

NAME: The species honours Feng, the Chinese arachnologist who was the first to illustrate this new species as *T. tenellus*.

Tibellus japonicus sp.n.

Figs 35, 46, 52, 65.

Tibellus tenellus non L. Koch: Bösenberg & Strand, 1906: 271–272, pl. 10, fig. 156 (♂ ♀, not examined).

Tibellus tenellus non L. Koch: Saito, 1934: 327–328, fig. 1 (♀, not examined).

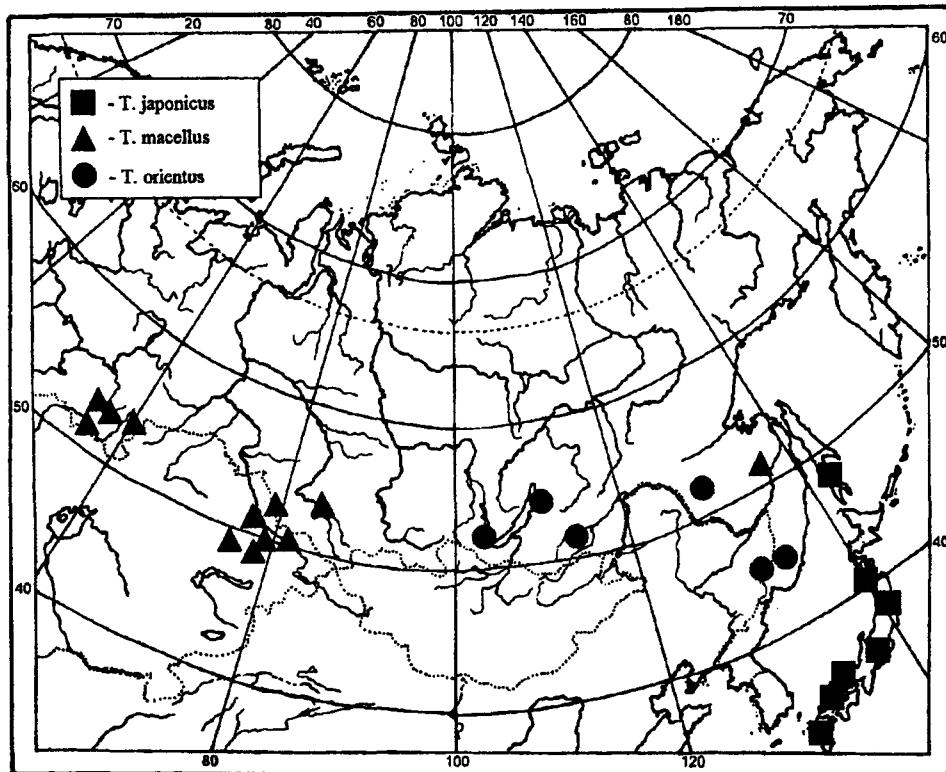
Tibellus tenellus non L. Koch: Chikuni, 1989: 133, fig. 2 (♂ ♀, not examined).

Holotype: 1 ♀ (NSMT-Ar 4156), Japan, Honshu, Hiroshima Pref., Hatsukaichi-shi, Mt. Gokurakuji, 30.08.1992 (Y. Ihara).

Paratypes: 1 ♀ (NSMT-Ar 4157), Japan, Honshu, Tottori Pref., Tottori, Ochidani Shrine, 29.07.1987 (M. Hosoda); 1 ♀ (ZMMU), same island, Hiroshima Pref., Hatsukaichi-shi, Sagata, 28.07.1991 (Y. Ihara); 1 ♀ (ISEN), same pref., Akashi, 1.06.1992 (Y. Ihara); 1 ♀ (PSU), s.lo., Akashi, 30.06.1991 (Y. Ihara).

DIAGNOSIS: *T. japonicus* sp.n. can be distinguished easily from all congeners occurring in the East Palaearctic by the spination of tibiae I–II (2-2-2-2a), and the claw-shaped tip of the embolus (see Bösenberg & Strand, 1906: 271–272, pl. 10, fig. 156, and Chikuni, 1989: 133, fig. 2). The male of *T. japonicus* sp.n is similar to that of the North American *T. duttoni* (Hentz, 1847) by the claw-shaped tip of the embolus (see fig. 343 in Dondale & Redner [1978]), from which it can be distinguished by the wide basis of the embolus. The female of *T. japonicus* sp.n is similar to that of *T. maritimus* by the shape of the epigyne (Figs 65 and 73–75) and the structure of the endogynę (Figs 35, 52 and 34, 51), but it can be separated by the wider median septum of the epigyne (Fig. 65), the longer and bent spermathecal gland ducts (Fig. 52).

DISTRIBUTION: Southern Sakhalin [Saito, 1934, 1935] and Japan [Bösenberg & Strand, 1906; Saito, 1934, 1939; Chikuni, 1989] (Map 2).



Map 2. Distribution of *Tibellus japonicus* sp.n., *T. macellus* and *T. orientus* sp.n.

Карта 2. Распространение *Tibellus japonicus* sp.n., *T. macellus* и *T. orientus* sp.n.

DESCRIPTION: MALE. See Bösenberg & Strand, 1906: 271–272, pl. 10, fig. 156b.

FEMALE. Measurements. Total length 7.7–9.4. Carapace 3.2–3.4 long, 2.5 wide. Median ocular area: MOA-WA 0.29, MOA-WP 0.36, MOA-L 0.32. Clypeal height 0.44. Cheliceric length 1.00. Length of leg segments:

	Leg femur	patella	tibia	metatarsus	tarsus
I	2.94–3.00	1.25–1.38	2.56–3.44	1.94–2.00	1.38–1.39
II	3.31–3.81	1.25–1.26	2.81–3.13	2.45–1.50	1.50–1.63
III	2.50–2.75	0.94–1.13	1.88–2.00	1.50–1.63	0.94–1.00
IV	3.25–3.50	1.00–1.13	2.44–2.63	2.13–2.19	1.13–1.25

Leg spination. Leg I-II: femur d 0-1-1, pr 1(0)-1(0)-1(0), rt 0-1(0)-1(0); tibia d 0-0-1, pr and rt 1-1-1, v 2-2-2a; metatarsus pr and rt 1-1-0, v 2-2. Legs III: femur d 1(0)-1(0); tibia pr and rt 0-1-1, v 2-2-2a; metatarsus pr and rt 1-1-0, v 2-2. Leg IV: femur d 0-1-0; tibia d 0-1(0), pr, rt 0(1)-1-1, v 2-2a; metatarsus pr 1-1-1a, rt 1-1, v 2-2.

Colouration. Carapace creamy white to light yellow-brown, with a dirty brown median and with marginal stripes; usually a very thin longitudinal line of spots and fine setae between median and lateral stripes (sometimes not expressed). Sternum coloured like carapace but slightly lighter, with dark edges. Legs yellow with dirty brown spots. Abdomen white-yellow, dorsum with an indistinct lanceolate marking, a brown median and two black spots each in anterior 1/3 and in posterior 1/3 extent.

Epigyne and spermathecae as in Figs 35, 46, 52 & 65.

NAME. The species name refers to the country of origin.

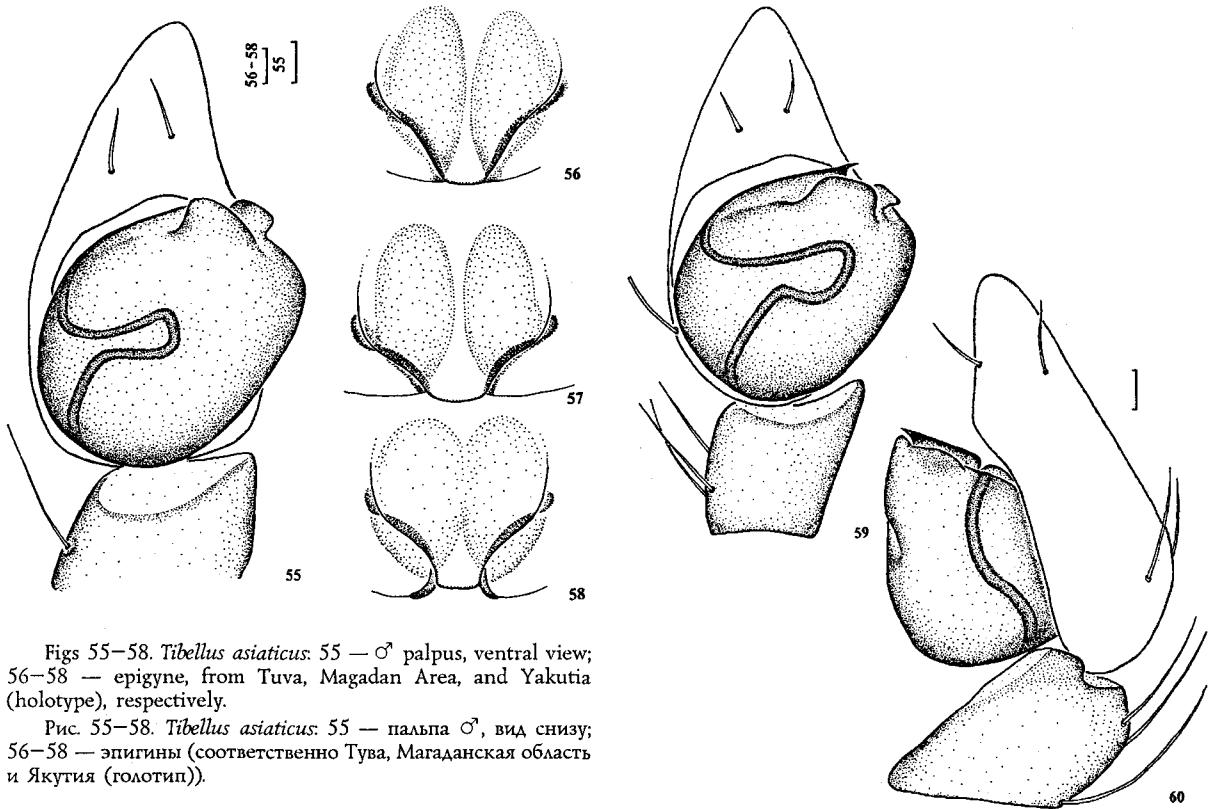
Tibellus macellus Simon, 1875

Figs 8, 15, 16, 25, 33, 41, 49, 66–70.

***Tibellus macellus*: Simon, 1932: 865, figs 1327 & 1328 (♂, ♀, not examined).**

***Tibellus macellus*:** Utotschkin, 1981: 12, 16, figs 16–20 (♂, ♀, examined).

Material examined: RUSSIA: Bashkiria: 1 ♂, (PSU), Bashkirsk Reserve, mountainous steppe, 13.06.1988 (V.E.); 1 ♀ (PSU), Meleuz Distr., Syrtlanovo, Caragana steppe, 13.09.1990 (V.E.); 2 ♂♂, (PSU), s.lo., Stipa steppe, 20.7.1990 (V.E.); 3 ♂♂, 3 ♀♀ (PSU), s.lo., 3.09.1990 (V.E.); Orenburg Area: 1 ♀ (PSU), Orenburg Distr., *Populus* forest, 24.06.1988 (S. Kuznetsov); 1 ♀ (PSU), Sol-Iletsk Distr., Linevka, 1.07.1988 (leg. & det. S. Kuznetsov as *T. oblongus*); Chelyabinsk Area: 1 ♀, (PSU), Troitsk Distr., Troitsky Nature Reserve, steppe, 06.1986 (T. Polyanina); 5 ♀♀ (PSU), s.lo., 06.1986 (T. Polyanina); 1 ♂ (PSU), s.lo., 06.1986 (T. Polyanina); 1 ♂ (PSU), s.lo., forest edge, 27.07.1985 (O. Sibiryakova); 2 ♂♂ (PSU), s.lo., 1940 (L. Beklemisheva & N. Rusinova); 2 ♂♂, 2 ♀♀ (PSU), s.lo., steppe, 06.1995 (V.E.); 1 ♀ (PSU), s.lo., steppe, 26.07.1985 (det. O. Sibiryakova as *T. maritimus*); 1 ♂ (PSU), s.lo., 27.07.1985 (det. O. Sibiryakova as *T. oblongus*); 2 ♀♀ (PSU), s.lo., *Betula* forest, 4.07.1984 (det. A. Utotschkin as *T. maritimus*); 1 ♀ (PSU), s.lo., steppe, 18.07.1974 (leg. Saenko, det. A. Utotschkin as *T. maritimus*); 1 ♂, 1 ♀ (PSU), s.lo., 27.06.1975 (Saenko & Khramtsova); 1 ♀ (PSU), s.lo., 26.07.1972 (A. Utotschkin); 6 ♀♀ (ISEN). Altai Province, environs of Barnaul, valley of Ob River, meadows, 07.1984; 1 ♀ (ISEN). Novosibirsk Area, environs of Krasnozorskoe, 19–23.07.1989 (A. Alekseev); 1 ♀ (PSU), Khabarovsk Province, environs of Komsomolsk-on-Amur, Komsomolskii Reserve, inside a house, 3.07.1987 (Sheverda). — KAZAKHSTAN: Pavlodar Area: 5 ♀♀ (ISEN), Ermakovskoye Distr., Leninskii, 6.07.1990 (O.L.); 3 ♂♂, 5 ♀♀ (ISEN), s.d., steppe, 23.06.1990 (O.L.); 30 ♂♂, 20 ♀♀ (ISEN), s.d., environs of Malyi Kalkaman, 10.06.1994 (O.L.); 2 ♀♀ (ISEN), 25 km SE of Pavlodar, steppe, 30.06.1990 (O.L.); 3 ♀♀ (ISEN), valley of Irtysh River, meadow, 29.07.1990 (O.L.); 2 ♀♀ (ISEN), environs of Pavlodar, 31.07.1990 (O.L.); 4 ♀♀ (ISEN), Bayanaul Distr., Kyzyl-Tau, 11.06.1991 (O.L.); 1 ♀ (ISEN), Lebyazhinsk Distr., 8 km NE of Shoktal, 5.07.1990 (O.L.); 1 ♀ (ISEN), Ekipastuz Distr., Shiderty, valley of Shiderty River, 2.08.1992 (O.L.); 12 ♂♂, 14 ♀♀ (ISEN), environs of Zarya, 20.06.1991, (O.L.); 1 ♂, 4 ♀♀ (ISEN), Maiskoe Distr., valley of Irtysh River, meadows, 10.08.1989 (O.L.); 8 ♂♂, 20 ♀♀ (ISEN), 25 km N of Pavlodar, meadows, 20.06.1992, (O.L.).



Figs 55–58. *Tibellus asiaticus*: 55 — ♂ palpus, ventral view; 56–58 — epigyne, from Tuva, Magadan Area, and Yakutia (holotype), respectively.

Рис. 55–58. *Tibellus asiaticus*: 55 — пальпа ♂, вид снизу; 56–58 — эпигини (соответственно Тува, Магаданская область и Якутия (голотип)).

Comparative material: KAZAKHSTAN: 2♀ (ISEN, Ph.1751–1752), Alma-Ata Area, Kegen Distr., 10 km S of Shaidak-Bulak, 20.07.1992 (E. Kopdykbaev).

DIAGNOSIS: *T. macellus* is similar to *T. oblongus* by the long retrolateral tibial apophysis, the general structure of the embolus, the copulatory openings situated near the posterior margins of the epigyne, and the long spermathecal gland ducts. *T. macellus* can be separated from *T. oblongus* and other congeners chiefly by the slightly twisted tip of the embolus (Fig. 25), the small copulatory openings situated near the posterior margins of the epigyne (Figs 68–70), the distinctive structure of the endogyne (Figs 33, 41, 49), and the smaller body size.

DISTRIBUTION: So far reported from southern and central Europe [Bonnet, 1959], the Crimea, the Ukraine, the North Caucasus, Georgia [Mikhailov, 1997], the mountains of Central Asia (present data); in Russia from the middle flow of Volga River, the Middle and South Urals [Esyunin & Efimik, 1996]. The localities where the species has been found in Siberia are shown on Map 2.

HABITATS: Meadows, steppes, mountainous steppes and, in the South Urals, deciduous forests.

DESCRIPTION:

MALE. Measurements. Total length 4.3–4.9. Carapace 1.6–2.3 long, 1.3–1.9 wide. Median ocular area: MOA-WA 0.19, MOA-WP 0.31, MOA-L 0.31. Clypeal height 0.25. Cheliceral length 0.50. Length of leg segments:

	Leg femur	patella	tibia	metatarsus	tarsus
I	3.12–3.53	1.33–1.62	2.88–3.48	2.43–2.92	1.43–1.90
II	3.58–4.69	1.33–1.62	3.31–4.20	2.90–3.59	1.92–2.28
III	2.40–3.22	0.79–1.00	1.94–2.27	1.74–2.13	1.00–1.32
IV	3.63–4.84	1.23–1.32	3.00–3.82	2.81–3.40	1.29–1.41

Leg spination. Legs I–III: femur d, pr and rt 1-1-1; tibia pr and rt 1-1-1, v 2-2-2a; metatarsus pr and rt 1-1, v 2-2. Leg IV: femur and tibia as on the legs I–III; metatarsus pr and rt 1-1-

Figs 59–60. *Tibellus asiaticus*, ♂ palpus, ventral and lateral views, respectively.

Рис. 59–60. *Tibellus asiaticus*, пальпа ♂, вид соответственно снизу и сбоку.

1a, v 2-2. Spination of cymbium: 3 spines in base (Figs 15–16).

Colouration. Carapace yellowish creamy, with a dirty brown median and with lateral stripes. Legs with numerous fine black dots and dark petty spines, femur with two light stripes dorsally. Abdomen creamy white, dorsum with a narrow lanceolate marking and a brown median stripe; with two black small spots in distal 1/3 extent (sometimes absent). Sides with brown stripes. Venter whitish.

Palpal structure as in Figs 25, 66 & 67.

FEMALE. Measurements. Total length 8.1–9.2. Carapace 2.5–3.1 long, 2.0–2.4 wide. Median ocular area: MOA-WA 0.31, MOA-WP 0.37, MOA-L 0.37. Clypeal height 0.31. Cheliceral length 0.93. Length of leg segments:

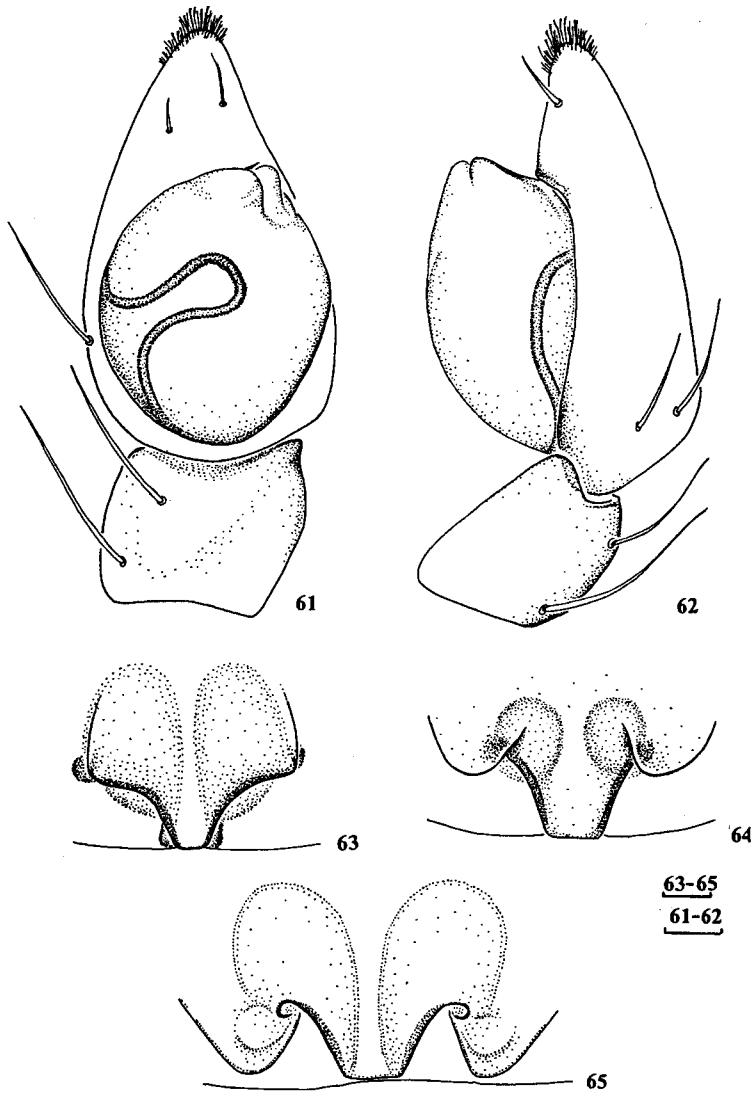
	Leg femur	patella	tibia	metatarsus	tarsus
I	2.72–3.43	1.11–1.50	2.20–3.00	1.83–2.52	1.23–1.60
II	3.13–4.10	1.11–1.62	2.71–3.40	2.20–2.79	1.42–1.84
III	2.00–2.82	0.90–1.11	1.44–2.10	1.34–1.73	0.70–1.12
IV	3.32–4.21	1.00–1.22	2.40–3.22	2.00–2.78	1.09–1.31

Leg spination. Legs I–III: femur d 1(0)-1-1, pr 1(0)-1-1(0), rt 1(0)-1(0)-1(0); tibia pr and rt 1-1-1, v 2-2-2a; metatarsus pr and rt 1-1, v 2-2. Leg IV: femur d 1-1-1, pr 1(0)-1-1, rt 0-0-1; tibia as in legs I–III; metatarsus pr and rt 1-1-1a, v 2-2-2a.

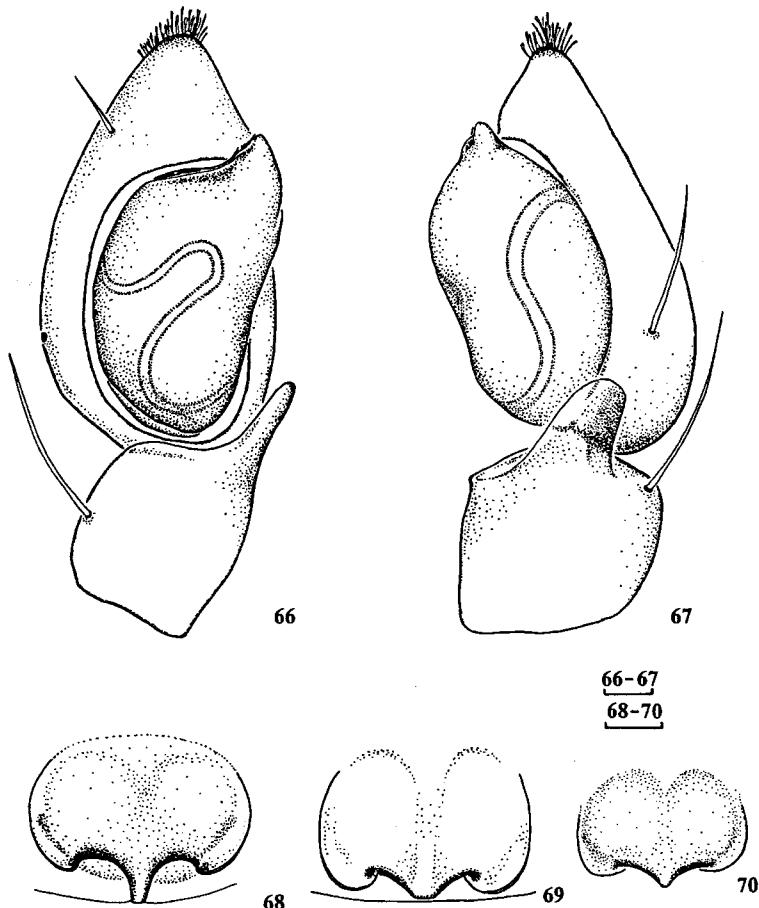
Colouration as described for male (Fig. 8), except as follows: sometimes carapace with three pairs of dark markings in the area of marginal stripes; abdomen laterally with brown markings and points. Epigyne and spermathecae as in Figs 33, 41, 49, 68–70.

Tibellus maritimus (Menge, 1875)

Figs 19, 20, 27–30, 34, 45, 51, 71–76.

Tibellus oblongus: Simon, 1932: 866, figs 1331, 1332 (σ° , ♀, not examined).*Tibellus maritimus*: Dondale & Redner, 1978: 97, figs 324–327 (σ° , ♀, not examined).*Tibellus maritimus*: Utotschkin, 1981: 12, 16, figs 6–10 (σ° , ♀, re-examined).*Tibellus oblongus*: Song, 1987: 270, figs 226a–c (σ° , ♀, not examined).*Tibellus maritimus*: Song & Zhu, 1997: 210, figs 151a–c (σ° , ♀, not examined).Material examined: RUSSIA: Polar Urals: 1 ♀ (ISEN), 9.08.1968 (Y. Korshunov); 3 ♀♀ (PSU), Sob River, 3–19.08.1925 (V. Fridman); 3 σ° , 2 ♀♀ (ISEN), southern Yamal Peninsula, Shchuchia, 1.07.1968, coll. ?; 2 σ° , 12 ♀♀ (PSU), Khadyta River, humid meadow, 07.1982 (S.E.); 1 σ° , 2 ♀♀ (PSU), s.lo., meadow, 12.07.1981 (S.E.); 1 σ° (PSU), s.lo., meadow, 1.07.1981 (S.E.); 1 ♀ (PSU), s.lo., flood-land meadow, 12.07.1981 (S.E.); 1 σ° (PSU), s.lo., tundra, 10.07.1987 (S.E.); 1 ♀ (PSU), Komi Republic, Kozhym River, on grass, 9.06.1974 (Roshchin); Perm Area: 1 σ° (PSU), Gornozavodsk Distr., Basegi Reserve, meadow, 2.07.1984 (S.E.); 1 σ° (PSU), s.lo., summer 1985 (S.E.); 1 σ° (PSU), environs of Perm, 06.1921 (D. Kharitonov); Orenburg Area: 1 σ° (PSU), environs of Orenburg, 26.05.1925 (P. Vorontsovskii); 1 ♀ (PSU), environs of Donets River, 11.08.1985 (S. Kuznetsov); Chelyabinsk Area: 1 ♀ (PSU), Satka Distr., Sibirka, 16.06.1984 (N. Pakhorukov, V.E.); 3 ♀♀ (PSU), Ilmenskii Reserve, bog, 10.08.1986 (A. Polyanin); 2 σ° , 4 ♀♀ (PSU), Troitsk Distr., Troitsky Nature Reserve, Betula forest, 2.07.1989 (S.E.); 5 ♀♀ (PSU), s.lo., environs of Lake Kukai, 07.1989 (D. Kutaev); 1 ♀ (PSU), s.lo., Soleny Log, 3.07.1989 (S. Kichigina); 11 σ° , 9 ♀♀, (PSU), s.lo., summer 1940 (L. Beklemisheva & I. Rusanova); 1 ♀ (PSU), s.lo., 9.06.1974 (L. Golovashkina); 1 ♀ (PSU), s.lo., 9.06.1987 (S.E.); 1 ♀ (PSU), s.lo., Betula forest, 18.07.1975 (Saenko); Tyumen Area: 1 σ° (ISEN), Zavodoukovsk Distr., Lybaevo, valley of Tobol River, 12.06.1988 (O.L.); 3 ♀♀, 1 subad ♀ (PSU), Surgut Distr., Yuganskii Reserve, summer 1987 (S.E.); 3 ♀♀ (PSU), s.lo., environs of Negus-Yach River, summer 1988 (V. Novokshonov); 1 ♀ (ISEN), Kurgan Area, environs of Uval, valley of Tobol River, 20.06.1989 (N. Utkin); Altai Province: 2 ♀♀ (PSU), Zmeinogorsk Distr., Lokteevskoe, 5–18.06.1909 (S. Buturlin); 1 ♀ (PSU), s.d., Novenskoe, 4.06.1909 (Lavrov); 1 σ° , 1 ♀ (ISEN Ph.1242–1243), East Balakan, 40 km NW of Laptev Log, 27.05.1989 (O.L.); 1 σ° , 6 ♀♀ (ISEN, Ph.553, 157–162), 25 km N Burla, 25.06.1990 (Y. Lavrinenko); 1 ♀ (ISEN Ph.988), environs of Barnaul, Pinus forest, 4.08.1984 (O.L.); Novosibirsk Area: 2 ♀♀ (ISEN), Kargat Distr., Makaryevskii, humid meadow, 26.08.1987 (D.L.); 2 ♀♀ (ISEN), s.d., Makaryevskii, forest edge, 26–27.08.1987 (D.L.); 6 ♀♀ (ISEN), s.lo., 22.07.1988 (D.L.); 2 ♀♀ (ISEN), Bugotak Distr., Gornyi, Bugotaksie Sopki, 300 m a.s.l., 18.06.1988 (A. Kozlov); 1 σ° , 2 ♀♀ (ISEN), Karasuk Distr., Troitskoe, bank of Lake Krotova Lyaga, 8–10.06.1988 (A. Kozlov); 1 ♀ (ISEN), Novosibirsk Distr., environs of Koltsovo, 8.06.1986 (D.L.); 1 ♀ (ISEN), 30 km N of Severnoe, environs of BIAZA, 56°34'N, 78°17'E, 28.05.1990 (V. Pekin); 2 σ° , 1 ♀ (ISEN), Chik, steppe, 6.06.1991 (A. Legalov); 1 ♀ (ISEN), Kochenevo, 4.06.1994 (A. Legalov); Krasnovarsk Province: 1 ♀ (PSU), environs of Shushenskoe, Shushenskii Bor Nature Reserve, swampy meadow, 22.07.1980 (V. Isakov); 1 σ° , 1 ♀ (ISEN), Khakassia, Askiz Distr., 25–27 km NE of Askiz,Figs 61–65. *Tibellus aspersus* (61–63), *T. fengi* sp.n., paratype (64) and *T. japonicus* sp.n., paratype (65): 61–62 — σ° palpus, ventral and lateral views, respectively; 63–65 — epigynae.Figs 61–65. *Tibellus aspersus* (61–63), *T. fengi* sp.n., параптип (64) и *T. japonicus* sp.n., параптип (65): 61–62 — пальпа σ° , вид соответственно снизу и сбоку; 63–65 — эпигина.

stony steppe, 15.07.1990 (D.L.); Tuva: 2 ♀♀ (ISEN), Erzin Distr., 3–9 km S of Ersin, valley of Tes-Khem River, 14.07.1989 (D.L.); 3 σ° , 2 ♀♀ (ISEN), s.d., environs of Lake Tere-Khol, humid meadow, 29.05.1989 (D.L.); 1 σ° (ISEN), s.d., 30–35 km W of Erzin, Lake Shara-Nur, 94°32'E, 50°12'N, 900 m a.s.l., 8.06.1995 (Y.M.); 6 σ° , 11 ♀♀ (ISEN), Tandinskii Distr., environs of Lake Chagyta, bog, 29.06.1989 (D.L.); 1 σ° (ISEN), NE bank of Lake Ubsunur, 50°40'N, 92°58'E, 750 m a.s.l., 18.07.1993 (D.L.); 1 ♀ (ISEN), Buryatia, environs of Selenga River, Murzino, 10.07.1985 (B.Z.); 1 σ° (ISEN), Chita Area, Kyra Distr., 60 km SW of Kyra, Sokhondo Reserve, valley of Agutsa River, 1,100 m a.s.l., humid meadow, 16.06.1991 (D.L.); Yakutia: 1 σ° (ZMMU), environs of Nizhnii Angarsk, 07.1989 (K. Eskov); 1 σ° , 2 ♀♀ (PSU), Chona River, 26–27.06.1926 (Tkachenko); Amurskaya Area: 2 σ° , 2 ♀♀ (PSU), environs of Uluta, 18.05.1910 (Verkhovskaya, Minin); 1 ♀ (PSU), Nikan River, 05–06.1911 (N.A. Gondatti); 1 σ° (ISEN), environs of Blagoveshchensk, 4.06.1996 (A. Streltsov); 1



Figs 66–70. *Tibellus macellus*. 66–67 — ♂ palpus, ventral and lateral views, respectively; 68–69 — epigyne (Bashkiria); 70 — ditto (Chelyabinsk Area).

Рис. 66–70. *Tibellus macellus*: 66–67 — пальпа ♂, вид соответственно снизу и сбоку; 68–69 — эпигина (Башкирия); 70 — то же (Челябинская область).

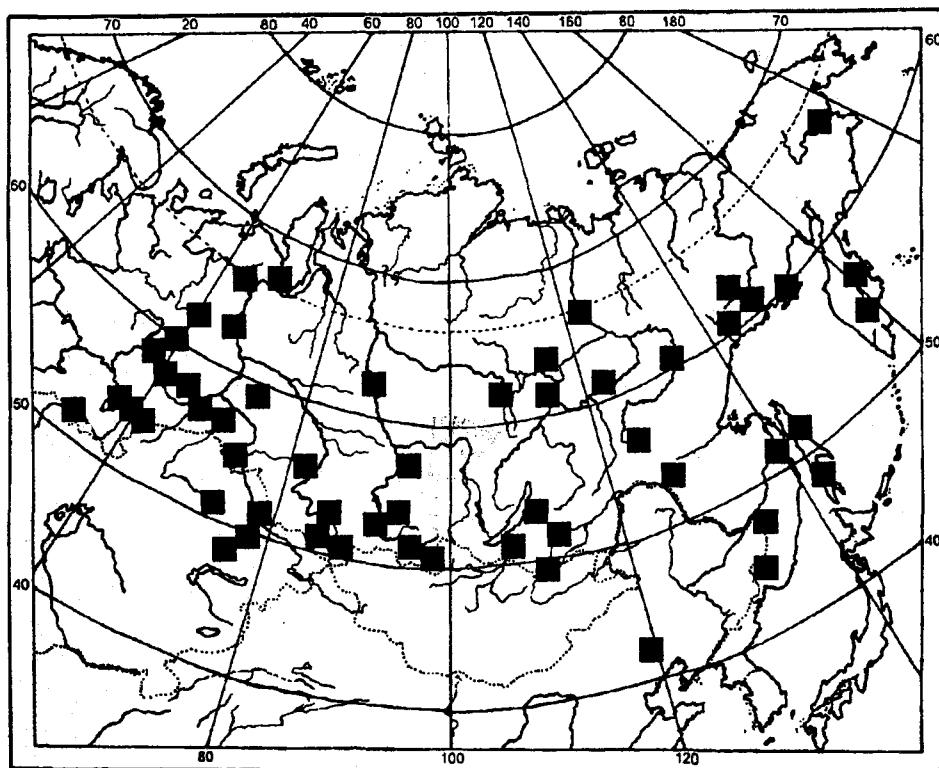
subad ♀ (ISEN), environs of Novopetrovka, 21.07.1996 (E. Malikova); Khabarovsk Province: 7♂♂, 10♀♀ (ISEN, Би-1693), Bolshekhekhtsyrskii Reserve, humid meadow, 15.06.1987 (D.L.); 1 ♂, 2 ♀♀ (ISEN), s.lo., humid meadow, 17.06.1987 (D.L.); 1 ♂ (ISEN, Би-1632), s.lo., 22.06.1987 (D.L.); 7♂♂, 7♀♀ (ISEN), s.lo., 16.06.1987 (D.L.); 1 ♂ (ISEN), s.lo., meadow, 15.06.1987 (D.L.); 1 ♀ (PSU), environs of Tsymmermanovka, 2.07–3.08.1911 (V. Soldatov); 1 ♂ (PSU), s.lo., 2.07–3.08.1911 (V. Soldatov); 1 ♂ (PSU), Amur River, 20 km of Vyatskoe, 10–23.06.1910 (V. Soldatov); 1 ♀ (ISEN), Okhotsk Distr., Ulya River, 08.1987 (V. Zherikhin); Magadan Area: 1 ♀ (ZMMU), 10 km N of Palatka, on grass, 3.07.1985 (Y.M.); 3 ♂♂, 6 ♀♀ (ZMMU), Tenkinskii Distr., Upper Kolyma flow, foothills of Bolshoi Annachag Mt. Range, Sibit-Tyellakh River Basin, Aborigen Research Station, 15.06.1983 (Y.M.); 3 ♂♂, 3 ♀♀ (ZMMU), s.lo., 9.06.1983 (Y.M.); 3 ♂♂ (ZMMU), s.d., environs of Sibit-Tyellakh, Kolyma River, 27.06–7.07.1983 (Y.M.); 1 ♂ (ZMMU), s.lo., summer 1985 (Y.M.); 2 ♂♂ (ZMMU), s.lo., summer 1986 (Y.M.); 2 ♀♀ (ZMMU), s.lo., 07.1983 (Y.M.); 1 ♂ (ZMMU), environs of Solnechnyi, 20.06.1987 (Y.M.); 1 ♂, 2 ♀♀ (ZMMU), 14 km N of Magadan, valley of Dukchga River, bog, 29.06.1985 (Y.M.); 1 ♀ (ISEN), 60 km NE of Markovo, 29.06.1985 (A. Kondratyev); Kamchatka Area: 1 ♀ (ZMMU), Kamchatka River, Krasnyi Yar, 19–21.08.1930 (V.P.); 1 ♀ (ZMMU Ta-2302), s.lo., Dolgii Ples, 25.08.1930 (V.P.); 2♀ (ZMMU Ta-2301), Belaya River, meadow, 13.08.1930 (V.P.); 3♀ (ZMMU Ta-2303), s.lo., 15.08.1930 (V.P.); 1 ♂, 1 ♀ (ZMMU Ta-2298), environs of Kozyrevskoe, 17.07.1930

(V.P.); 1 ♂, 1 ♀ (ZMMU), environs of Klyuchi, shrubs, 12.07.1930 (V.P.); Pri-morye Province: 1 ♀ (PSU), Zeny, Sviyagino, 3.06.1916 (N. Delle); 1 ♂ (ISEN), Khasan Distr., Khasan, Lake Talmi, 27.06.1976 (B.Z.); 2 ♀♀ (ISEN), Lake Khanka, CE shore, 44°39'N, 132°34'E, 15–16.07.1998 (Y.M.); 2 ♀♀ (ZMMU), Sakhalin Area, Shimshu Island off NW shore, 50°46'N, 156°15'E, 9–13.09.1996 (Y.M.). — KAZAKHSTAN: Pavlodar Area: 1 ♀ (ISEN, Ph.1790), Bayanaul Distr., environs of Kyzyl-Tau, 11.06.1991 (O.L.); 1 ♂ (ISEN Ph.1141), 15 km N of Pavlodar, steppe, 23.09.1984 (O.L.); 1 ♂, 1 ♀ (ISEN Ph.1757–1758), 25 km N of Pavlodar, meadow, 2.06.1992 (O.L.); 1 ♂, 1 ♀ (ISEN Ph.1104–1105), Ermakovskoye Distr., 8 km N of Kyzyl-Zhar, 14.07.1990 (O.L.); 1 ♂ (ISEN, Ph.985), s.d., 8 km NE of Kyzyl-Zhar, Irtysh River Valley, 14.07.1990 (O.L.); 1 ♀ (ISEN Ph.1786), Ekibastuz Distr., environs of Shiderty, valley of Shiderty River, 2.08.1992 (O.L.); 1 ♂ (ISEN), North-Kazakhstan Area, Sokolovka Distr., Bolshaya Malyshka, 12–18.06.1986 (D.L.); 7 ♂♂, 3 ♀♀ (ISEN), s.lo., edge of *Pinus* forest, 10.06.1988 (D.L.).

Comparative material: RUSSIA: 1 ♀ (PSU), Archangelsk Area, Ustty River, 21–22.06.1905 (V. Soldatov); Moscow Area: 1 ♀ (ZMMU), Naro-Fominsk Distr., Ozhigovo, 16.08.1985 (K. Mikhailov); 1 ♀ (ZMMU), environs of Oka River, 29.05.1903; Kostroma Area: 1 ♀ (ZMMU), Manturovo Distr., Ugory, 30.06.1983, (E. Veselova); 1 ♂, 1 ♀ (ZMMU), s.d., Davydovo, 26.06.1982 (E. Veselova); 1 ♀ (ZMMU), s.lo., 8.06.1982 (E. Veselova). 1 ♂ (ZMMU), s.d., 24.06.1982 (E. Veselova); 1 ♀ (ZMMU Ta-1575), Tatarstan, environs of Kazan, 15.07.1943, coll. ?; 1 ♂, 1 ♀, Astrakhan Area, Astrakhansky Nature Reserve, Damchik, on grass, 13.06.1966 (A. Utotschkin); 1 ♀ (PSU), s.lo., on reed, 31.05.1966 (A. Utotschkin); 3 ♀♀ (PSU), s.lo., 22.06.1966 (leg. V. Bragina, det. A. Utotschkin as *T. parallelus*). — UKRAINE: 1 ♀ (PSU), environs of Berdyansk, 24.08.1937 (D. Nikonov); 1 ♂ (PSU), Crimea, Girik-Dzhankoi Distr., near pond, 6.06.1926 (V. Kuznetsov). — KAZAKHSTAN: 1 ♂ (ZMMU), Uralsk Area, Dzhanibek, 10.06.1982 (K. Mikhailov). — U.S.A.: 1 ♂ (ISEN), Alaska, Denali Park, 4.06.1994 (D.I. Berman).

DIAGNOSIS: *T. maritimus* can be distinguished easily from all North Asian congeners by the very strongly expanded, grooved and ridged basal part of the embolus (Figs 27 & 28), the central position of the copulatory openings, and the copulatory opening guide reaching the posterior margins of the epigynae (Figs 73–75). *T. maritimus* seems most closely related to the North American *T. chamberlini* Gertsch, 1933 [Dondale & Redner, 1978: 102–104, figs 338–342], but it can be separated by the more strongly expanded, ridged basal part of the embolus and by the structure of the spermathecae (Figs 34, 45).

DISTRIBUTION: A Holarctic polyzonal species. In North Asia, it has been reported from the Urals [Esynin & Efimik, 1996], East Kazakhstan [Savelieva, 1970, 1979], West Siberia [Holm, 1973; Shlykov, 1975, 1977, 1978], c. ntral Siberia [Holm, 1973; Izmailova & Verzhutskii, 1981; Ekkov, 1986, 1988; Marusik, 1991; Koponen & Marusik, 1992; Marusik et al., 1993], Transbaikalia [Sternbergs, 1981; Verzhutskii et al., 1985, 1986; Izmailova, 1989; Danilov, 1990, 1991],



Map 3. Distribution of *Tibellus maritimus*.

Karta 3. Распространение *Tibellus maritimus*.

Khabarovsk Province [Logunov, 1992; Kurenschikov, 1993], Magadan Area [Marusik, 1991], Kamchatka [Kulczyński, 1926; Sytshevskaya, 1935], and Sakhalin [Marusik et al., 1992] (Map 3).

HABITATS: Tundra (Yamal Peninsula), various kinds of meadow, bogs, *Betula* forests, *Larix* forests (Upper Kolyma flow), shrubs, stony steppes.

REMARKS: One of the males taken in the steppe of the Troitsk District, Chelyabinsk Area, South Urals differs from other specimens of *T. maritimus* by the neither expanded nor ridged, but grooved basal part of the embolus (Figs 29–30, 76). In spite of this, the sample has been referred to *T. maritimus*. Apparently, this represents a case of teratology, since also the spination of both palps is very different.

DESCRIPTION: MALE. Measurements. Total length 5.4–7.3. Carapace 2.3–2.9 long, 1.9–2.3 wide. Median ocular area: MOA-WA 0.33, MOA-WP 0.44, MOA-L 0.53. Clypeal height 0.31. Cheliceral length 0.75. Length of leg segments: Leg femur patella tibia metatarsus tarsus

	I	II	III	IV
I	2.82–4.13	1.00–1.62	2.48–3.42	2.13–2.92
II	3.18–4.62	1.33–1.72	2.91–4.00	2.60–3.53
III	2.30–3.42	0.94–1.30	1.74–2.53	1.54–2.23
IV	3.23–4.74	1.13–1.52	2.50–3.82	2.31–3.60

Leg spination. Legs I–III: femur d, pr, rt and tibia pr, rt 1–1; v 2–2–2a; metatarsus pr and rt 1–1, v 2–2. Leg IV: femur d and pr 1–1–1, rt 0–1–1; tibia pr and rt 1–1–1, v 2–2–2a; metatarsus pr 1–1–1a, rt 1–1, v 2–2. Spination of cymbium: three spines at base (Figs 19–20).

Colouration. Carapace brown to red-brown, with a dark median and with lateral stripes. Legs yellow-brown to brown, finely spotty. Abdomen light brown to brown, dorsum with a brown lanceolate marking and a median stripe in addition to brown bands. Venter whitish. Palpal structure as in Figs 27, 28, 71 & 72.

FEMALE. Measurements. Total length 8.4–12.1. Carapace 3.0–3.4 long, 2.4–2.6 wide.

	femur	patella	tibia	metatarsus	tarsus
I	2.82–4.23	1.23–1.52	2.38–2.68	1.93–2.32	1.23–1.52
II	3.21–3.92	1.23–1.50	2.71–3.30	2.32–2.50	1.42–1.82
III	2.20–2.92	1.00–1.21	1.74–2.00	1.44–2.13	0.83–1.32
IV	3.33–3.84	1.13–1.42	2.31–2.98	2.11–2.50	1.10–1.51

Leg spination. Legs I–II: femur d 1(0)–1–1, pr and rt 1–1–1; tibia pr and rt 1–1–1, v 2–2–2a; metatarsus pr and rt 1–1, v 2–2. Leg III: femur d and pr 1–1–1, rt 0–0–1(0); tibia and metatarsus as in legs I–II. Leg IV: femur d 1–1–1, pr 0–0–1(1), rt 0–1–1(0); tibia as in legs I–III; metatarsus pr 1–1–1a, rt 1–1–0(1), v 2–2–2a.

Colouration. Carapace creamy with a dirty brown median and with marginal stripes. Sometimes with dark, broken, lateral stripes looking like three pairs of markings. Legs finely spotty. Abdomen yellow-brown, dorsum with a lanceolate marking and a median stripe, sometimes also spotty, variation in body colouration same as in *T. oblongus* (Figs 9–11). Venter white-yellow.

Epigyne and spermathecae as in Figs 34, 45, 51, 73–75.

Tibellus oblongus (Walckenaer, 1802)

Figs 18, 26, 38, 42, 50, 77–83.

Aranea oblonga Walckenaer, 1802, 2: 228.

Tibellus parallelus: Simon, 1932: 866, figs 1329–1330 (♂, ♀).

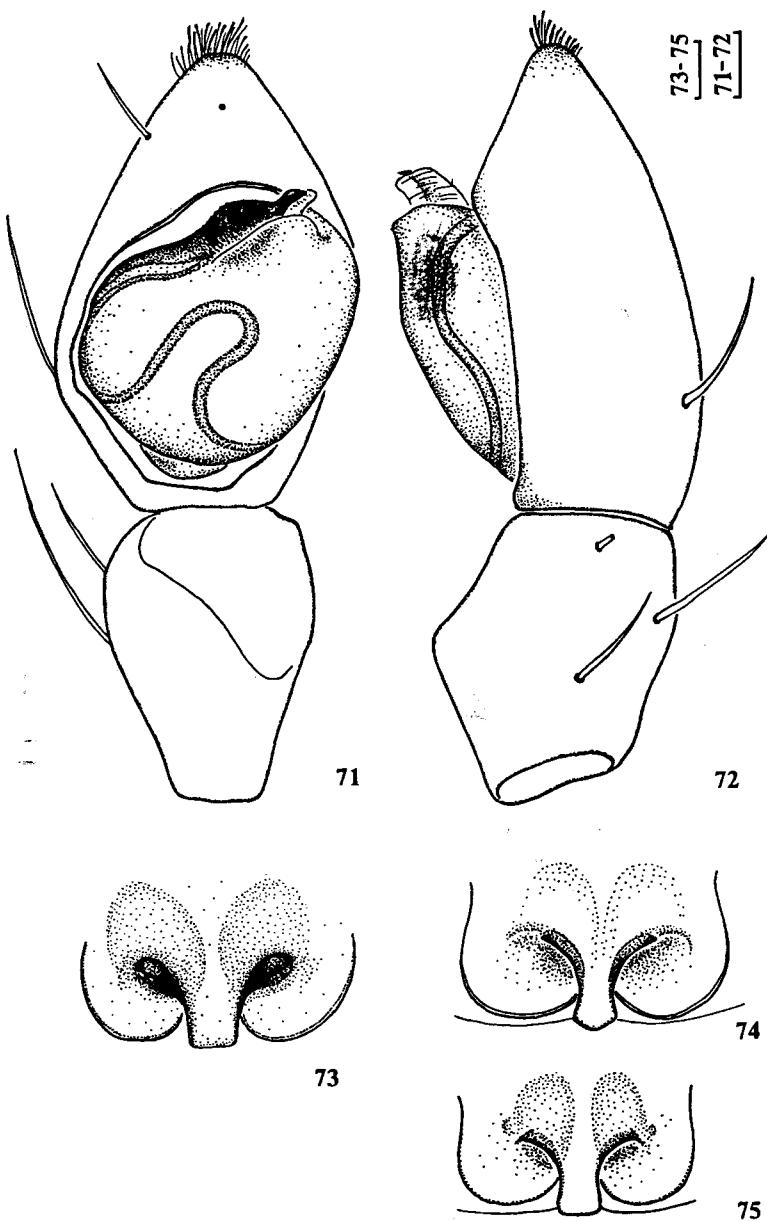
Tibellus oblongus: Schick, 1965: 100, figs 133–134, 137 (♂, ♀).

Tibellus oblongus: Dondale & Redner, 1978: 99, figs 63–73, 328–332 (♂, ♀).

Tibellus longicephalus Utotschkin, 1980: 43, (♀). Nomen nudum.

Tibellus longicephalus Utotschkin, 1981: 9–10, figs 1–2 (♀, re-examined). **Syn.n.**

Tibellus lineatus Utotschkin, 1981: 10–12, figs 3–5 (♂, re-examined). **Syn.n.**



Figs 71–75. *Tibellus maritimus*. 71–72 — ♂ palpus, ventral and lateral views, respectively; 73–75 — epigyne.

Рис. 71–75. *Tibellus maritimus*. 71–72 — пальпа ♂, вид соответственно снизу и сбоку; 73–75 — эпигина.

Tibellus oblongus: Utotschkin, 1981: 12, 16, figs 11–15 (♂, ♀, re-examined).

Tibellus lineatus Utotschkin, 1984: 4–6, figs 1–2 (♀, re-examined).

Tibellus parallelus non C.L. Koch: Song, 1987: 271, fig. 228a–b. (♂, not examined).

Tibellus parallelus non C.L. Koch: Hu & Wu, 1989: 330–331, fig. 262. 1–2 (♂, ♀, not examined).

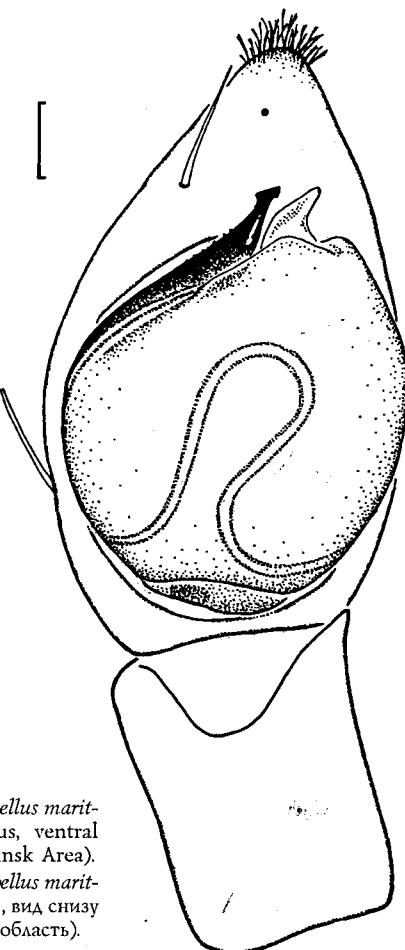
Tibellus oblongus: Chikuni, 1989: 133, fig. 3 (♂, ♀, not examined).

Tibellus oblongus: Song & Zhu, 1997: 211, figs 152a–c (♂, ♀, not examined).

Material examined: RUSSIA: Komi Republic: 1 ♂ (ZMMU), 60 km SE of Syktyvkar, Kortkeros Distr., environs of Dan, swampy Picea forest, 18.06.1988 (K. Mikhailov); 2 ♂♂, 1 ♀ (ZMMU), s.lo., bog,

21.06.1988 (A. Formozov); Perm Area: 4 ♀♀ (PSU), Visherskii Reserve, bank of Vishera River, 6.08.1994 (S.E.); 1 ♀ (PSU), Gornozavodsk Distr., Basegi Reserve, meadow, 20.07.1984 (S.E.); 2 ♂♂ (PSU), s.lo., 5.07.1990 (S.E.); 1 ♂ (PSU), s.lo., bog, 25.06.1990 (S.E.); 1 ♂ (PSU), s.lo., *Betula* forest, 30.06.1990 (S.E.); 1 ♂, 1 ♀ (PSU), s.lo., lichen tundra, 6.07.1990 (S.E.); 8 ♂♂, 9 ♀♀ (PSU), s.lo., meadow, 20.07.1989 (S.E.); 2 ♂♂, 2 ♀♀ (PSU), environs of Perm, Verkhnyaya Kurya, edge of *Pinus* forest, summer 1993 (V. Kozminikh); 1 ♂ (PSU), s.lo., 30.04–26.05.1990 (V. Kozminikh); 1 ♀ (PSU), s.lo., 11.07.1993 (V. Kozminikh); 1 ♂ (PSU), Okhansk Distr., edge of *Picea* forest, 12.06.1980 (holotype of *T. lineatus*); 5 ♂♂, 2 ♀♀ (PSU), Kungur Distr., "Spasskaya Gora" Protected Landscape, meadow, 6.06.1987 (S.E.); 3 ♂♂, 1 ♀ (PSU), meadow, 6.06.1983 (S.E.); 2 ♂♂ (PSU), s.lo., steppe, 17.06.1989 (S.E.); 3 ♂♂ (PSU), Ul'st-Kishert Distr., "Preudralie" Nature Reserve (det. A. Utotschkin); 1 ♂ (PSU), s.lo. (det. A. Utotschkin as *T. macellus*); 1 ♀ (PSU), s.lo. (det. A. Utotschkin as *T. lineatus*); 2 ♀♀ (PSU), s.lo., 06–07.1985 (leg. A. Zalkind, det. A. Utotschkin as *T. maritimus*); 2 ♂♂ (PSU), s.lo., 06–07.1985 (leg. A. Zalkind, det. A. Utotschkin as *T. macellus*); 3 ♂♂ (PSU), s.lo. (det. A. Utotschkin as *T. maritimus*); 7 ♂♂, 4 ♀♀ (PSU), s.lo., meadow, 11.06.1989 (T. Gridina); 1 ♂, 2 ♀♀ (PSU), s.lo., flood-plains of Silva River, on grass, 9.06.1993 (V.E.); 1 ♀ (PSU), Sverdlovsk Area, Ivdel Distr., Burmantovo, 22.06–1.07.1969 (K. Beltyukova); Bashkiria: 1 ♀ (PSU), Burzyan Distr., Bashkirskii Nature Reserve, environs of Sargaya, meadow, 15.06.1988 (V.E.); 1 ♂, 1 ♀ (PSU), s.lo., meadow, 20.06.1988 (V.E.); 2 ♂♂ (PSU), s.lo., meadow, 22.06.1986 (V.E.); 1 ♂, 2 ♀♀ (PSU), Shulgan-Tash Reserve, Kush-Elga, meadow, 5.07.1985 (V.E.); 2 ♀♀ (PSU), Meleuz Distr., environs of Syrtlanovo, shrubby steppe, 7.07.1990 (V.E.); 1 ♂, s.lo., *Stipa* steppe, 2.07.1990 (V.E.); Orenburg Area: 1 ♀ (PSU), Sol-Iletsk Distr., Linevka, 1.07.1985 (S. Kuznetsov); 2 ♂♂, 1 ♀ (PSU), Buzuluk Distr., "Buzulukskii Bor" Nature Reserve, 20.08.1986 (S. Kuznetsov); 1 ♀, Orenburgskii Reserve, Aituar, 28.05.1996 (N. Mazura); 1 ♂, 1 ♀ (PSU), s.lo., shrubby steppe, 30.05.1996 (N. Mazura); Chelyabinsk Area: 2 ♂♂ (PSU), Satka Distr., Sibirka, meadow, 16.06.1984 (leg. N. Pakhorukov, det. A. Utotschkin as *T. lineatus*); 1 ♀ (PSU), s.lo., forest, 11.06.1984 (leg. N. Pakhorukov, det. A. Utotschkin as *T. lineatus*); 1 ♀ (PSU), environs of Turgoyak, bog (leg. Vakulenko), Ilmenskii Reserve, 2.07.1981 (A. Lagunov); 2 ♀♀ (PSU), s.lo., bog, 6.08.1991 (S. Kichigina); 1 ♀ (PSU), Bredy Distr., steppe, 6.08.1989 (A. Lagunov); 8 ♂♂, 10 ♀♀ (PSU), Troitsk Distr., Troitsky Nature Reserve, 1940 (L. Beklemisheva & N. Rusinova); 2 ♂♂, 1 ♀ (PSU), s.lo., 1940 (L. Beklemisheva & N. Rusinova); 1 ♀ (PSU), s.lo., *Betula* forest, 29.07.1974 (leg. Saenko, det. A. Utotschkin as *T. maritimus*); 1 ♂ (PSU), s.lo., *Betula* forest, 27.07.1974 (leg. L. Golovashkina, det. A. Utotschkin as *T. maritimus*); 1 ♂ (PSU), s.lo., steppe, 13.06.1986 (T. Polyanina); 6 ♀♀ (PSU), s.lo., steppe, 23.06.1985 (T. Polyanina); 6 ♀♀, 3 ♂♂ (PSU), s.lo., 26.06.1985 (O. Sibiryakova); 3 ♂♂, 6 ♀♀ (PSU), s.lo., 20.06.1985 (leg. O. Sibiryakova, det. A. Utotschkin as *T. longicephalus*); 23 ♀♀, 12 ♂♂ (PSU), s.lo., steppe, 06.1986 (T. Polyanina); 1 ♀ (PSU), s.lo., steppe, 06.1986 (leg. T. Polyanina, det. A. Utotschkin as *T. longicephalus*); 6 ♀♀ (PSU), s.lo., *Betula* forest, 19.06.1985 (leg. O. Sibiryakova, det. A. Utotschkin as

T. maritimus); 3 ♂♂, 13 ♀♀ (PSU), s.lo., 16.06.1985 (O. Sibiryakova); 2 ♂♂, 2 ♀♀ (PSU), s.lo., 29.06.1989 (S.E.); 6 ♀♀ (PSU), s.lo., *Betula* forest, 5.07.1989 (S.E.); 1 ♂ (PSU), Tyumen Area, Surgut Distr., Yuganskii Nature Reserve, summer 1988 (V. Novokshonov); Altai Province: 2 ♂♂, 1 ♀ (PSU), 10–13.06.1939 (leg. D. Kharitonov); 4 ♂♂, 5 ♀♀ (ISEN), environs of Barnaul, valley of Ob River, 15.06.1990 (Y. Lavrinenko); 3 ♂♂, 3 ♀♀ (ISEN), mountainous meadow, 19.06.1989 (leg. A. Marchenko); 3 ♂♂, 4 ♀♀ (ISEN, Ph.866–872), N bank of Lake Teletskoe, 10.06.1988 (M. Safronov); 1 ♀ (PSU), environs of Lake Teletskoe, 16.06.1901; 1 ♂, 1 ♀ (ISEN Ph.719–720), 40 km NE of Laptev Log, 27.06.1989 (O.L.); Novosibirsk Area: 1 ♂, 2 ♀♀ (ISEN), Novosibirsk Distr., environs of Kol'tsovo, 8.06.1986 (D.L.); 1 ♀ (ISEN), s.d., Akademgorodok, *Pinus-Betula* forest, 24.06.1983 (B.Z.); 2 ♀♀ (ISEN), environs of Krasnozerskoe, 10.08.1988 (A. Alekseev); 5 ♂♂, 3 ♀♀ (ISEN), s.lo., 19–23.07.1989 (A. Alekseev); 1 ♀ (ISEN), Iskitim Distr., Malinovka, *Betula* forest, 15.08.1987 (D.L.); 1 ♀ (ISEN), Zavyalovo, *Pinus-Betula* forest, 1.07.1983 (B.Z.); 3 ♂♂ (ISEN), Karasuk Distr., Troitskoe, bank of Lake Krotovaya Lyaga, 8–10.06.1988 (A. Kozlov); 1 ♂ (ISEN), Salairsky Mt. Range, Gornyi, 320 m, 22.06.1994 (A. Legalov); 3 ♂♂, 2 ♀♀ (ISEN), Ordynsk Distr., Verkhnnii Irmel, 10.07.1986 (D.L.); 4 ♀♀ (ISEN), s.d., environs of Ordynsk, 18.06.1994 (A. Legalov); 2 ♂♂, 1 ♀ (ISEN), Kochenevo, 4.06.1994 (A. Legalov); Krasnoyarsk Province: 2 ♀♀ (PSU), Kansk Distr., Bunbuiskoe, 06.1917 (leg. P. Valdaev); 2 ♂♂, 2 ♀♀ (ISEN), Ermakovskoe Distr., 15 E of Ermakovskoe, forest edge, 20.06.1990 (D.L.); 1 ♀ (PSU), environs of Krasnoyarsk, date? (K. Skryabin); 2 ♀♀ (ISEN), Tuva, 6–10 km N of Shuurmak, 1,000 m a.s.l., *Larix-Betula* forest, 10.07.1993 (D.L.); 2 ♀♀ (PSU), Irkutsk Area, Angara River, summer 1867 (A. Kuskanova); 1 ♀ (PSU), Lake Baikal, 7.07.1908 (I. Kuznetsov); 1 ♀ (PSU), Yakutia, 65 km of Olekmninsk, 9.06.1914; 2 ♂♂ (PSU), Amurskaya Area, environs of Uluta, 18.05.1910 (leg. Verkhovskaya & Minin); Khabarovsk Province: 1 ♂, 2 ♀♀ (PSU), Amur River, environs of Tsymmermanovka, 2.07–3.08.1911 (V. Soldatov); 1 ♂ (PSU), 280 km NE of Khabarovsk, 1.06.1911 (V. Soldatov); 1 ♀ (PSU), environs of Amur River, 26.06.1915 (V. Soldatov); 5 ♂♂, 3 ♀♀ (ISEN), 20–25 km SE of Khabarovsk, Bolshehekhtyskii Nature Reserve, forest, 27.06.1987 (D.L.); 1 ♀ (ISEN), s.lo., bog, 19.06.1987 (D.L.); 3 ♂♂, 2 ♀♀ (ISEN), s.lo., 15.06.1987 (D.L.); 2 ♂♂, 1 ♀ (ISEN), s.lo., swampy forest, 17.06.1987 (D.L.); 1 ♂, 2 ♀♀ (ISEN), s.lo., forest, 19.06.1987 (D.L.); 5 ♂♂, 4 ♀♀ (ISEN), s.lo., swampy forest, 16.06.1987 (D.L.); Primorye Province: 3 ♀♀ (PSU), Vinogradovka, 30.07–9.08.1929 (Kirichenko); 1 ♂, 3 ♀♀ (ISEN) S part Ussuriiskiy Nature Reserve, 43°39'N, 132°33'E, 29–31.07.1998 (Y.M.); 1 ♀ (ZMMU), Magadan Area, 23 km N of Magadan, valley of Dukcha River, 24.06.1985 (Y.M.); Sakhalin Area, Sakhalin Island: 2 ♂♂, 2 ♀♀ (PSU), 2.08.1908 (leg. V. Soldatov); 1 ♀ (ISEN), 15–30.1978 (A. Kudel); 5 ♀♀ (ISEN Ph.814–818), Makarov Distr., Nigui River, 9–19.07.1989 (A.B.); 1 ♀ (ISEN Ph.829), environs of Yuzhno-Sakhalinsk, 15.07.1989 (A.B.); 1 ♀ (ISEN Ph.791), s.lo., 21.05.1989 (V. Zinchenko); 1 ♀ (ISEN), s.lo., 11.09.1989 (A.B.); 1 ♂ (ISEN), Aniva Distr., Ogonki, 22.06.1989 (V. Zinchenko); 2 ♀♀ (ISEN Ph.799–800), s.d. 3–5 km E of Novoaleksandrovsk, 16.09.1989 (A.B.); 1 ♂ (ISEN Ph.831), Aleksandrovsk-Sakhalinskii Distr., Mgachi, 29.06.1988 (A.B.); 1 ♂, 1 ♀ (ISEN), s.lo., 29.04–6.08.1988 (A.B.); 4 ♂♂, 2 ♀♀ (ISEN), s.d., Bereg Archovo, 27.06.1988 (A.B.); 1 ♀ (ISEN), Kirily Peninsula, Kirillovo, bank, 5.06.1990 (B.Z.); Kurile Islands, Iturup: 2 ♂♂, 2 ♀♀ (ISEN Ph.801–90), Kurilsk, 20–24.06.1989 (A.B.); Kunashir: 1 ♀ (ISEN, Ph.807), 10.07.1989 (V. Dubatolov); 5 ♂♂, 1 ♀ (ISEN), Kislyi Stream, 12.06.1989 (A.B.); 1 ♂, 2 ♀♀ (ISEN Ph.820–822), s.lo., (A.B.); 5 ♂♂, 2 ♀♀ (ISEN Ph.792–798), 5–7 km N of Lake Lagunnoe, 9.08.1988 (A.B.); 1 ♂ (ISEN Ph.813), environs of Golovnina Volcano, 11.07.1989 (A. Barkalov); 1 ♂ (ISEN), Ivanovskii Cape, 13.07.1989 (A. Barkalov); 2 ♂♂ (ISEN Ph.808–809), environs of Alekhino, 13–16.08.1988 (A.B.); 2 ♂♂, 2 ♀♀ (ISEN Ku-60, 119), CW part, 145°40'95"E, 44°00'38"N, sweeping from hot springs to sea, 5–23.09.1997 (Y.M.); 1 ♀ (ISEN), Onekotan, CE shore, Mussel Bay, 49°24'N, 154°50'E, 31.08–6.09.1996 (Y.M.). — KAZAKHSTAN: North Kazakhstan Area: 2 ♂♂, 5 ♀♀ (ISEN Ph.875–881), Sokolovka Distr., Bolshaya Malyshka, pine forest, 10.06.1986 (D.L.); 1 ♂ (ISEN), s.lo., 12–18.1986 (D.L.); 3 ♂♂, 7 ♀♀ (ISEN), s.lo., *Pinus* forest, 10.06.1986 (D.L.); Pavlodar Area: 3 ♂♂, 8 ♀♀ (ISEN), Bayanaul Distr., environs of Kyzyl-Tau, 11.06.1991 (O.L.); 3 ♂♂, 8 ♀♀ (ISEN), s.lo., 12–18.06.1991 (O.L.).



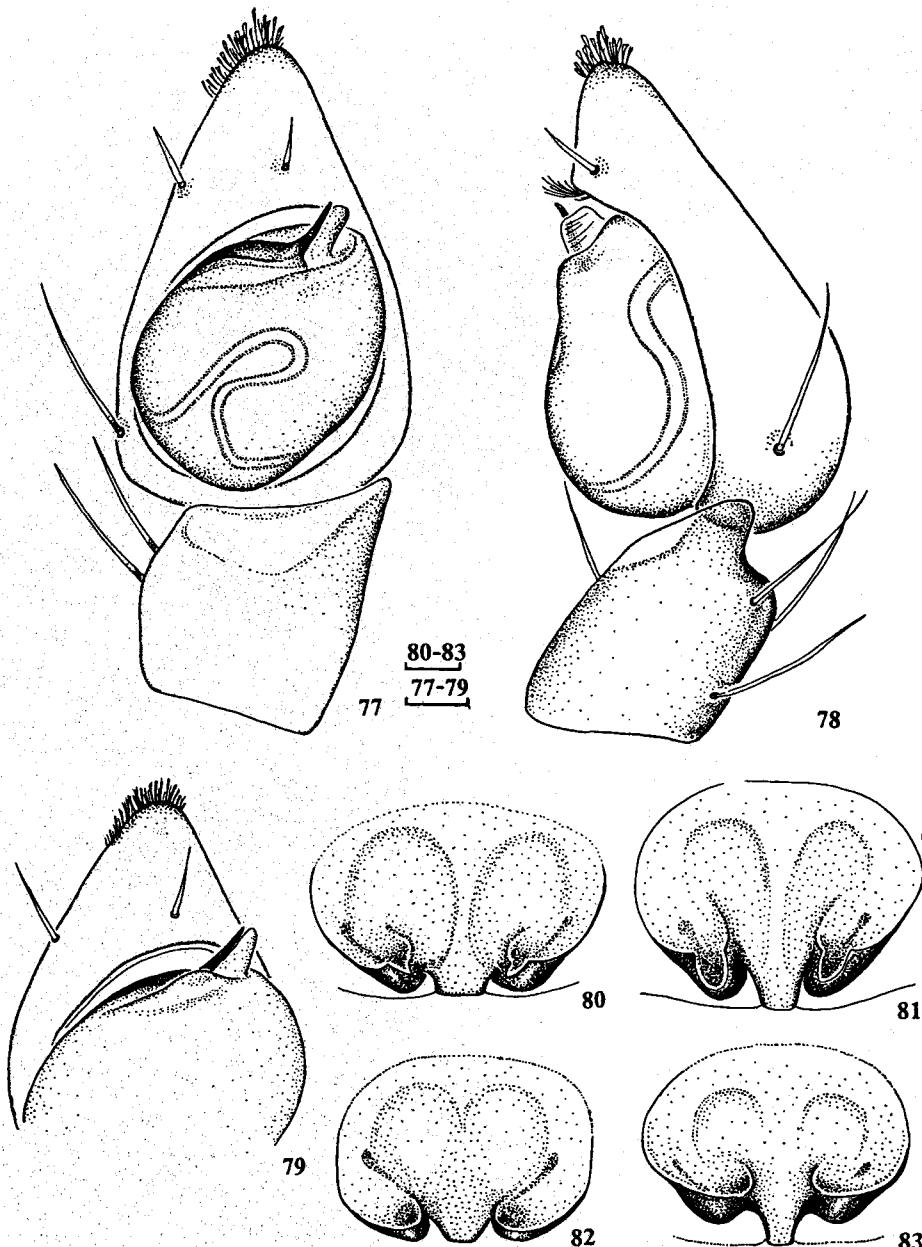
Figs 76. *Tibellus maritimus*, ♂ palpus, ventral view (Chelyabinsk Area).

Рис. 76. *Tibellus maritimus*, пальпа ♂, вид снизу
(Челябинская область).

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♀ (ISEN Ph.1795–1805), s.lo., 11.06.1991 (O.L.); 4♂, 4♀ (ISEN 893–901), s.lo., *Betula* forest, 13.06.1986 (D.L.); 2♀ (ISEN 1964–1965), environs of Pavlodar, 5.06.1994 (O.L.); **East Kazakhstan Area:** 1♀ (ISEN), eastern Ciszaisia, 20 km NE of Karatal, Bozaigyrkuly Sands, 12–13.06.1997 (R. Dudko & V. Zinchenko); 1♂, 3♀ (ISEN), valley of Chernyi Irtysh River, environs of Ashutas, 14–15.06.1997 (R. Dudko & V. Zinchenko).

Comparative material: SPAIN: 1 ♂ (PSU) [no exact loc. lit.] (Sonryg). — UKRAINE: 3 ♂♂ (PSU), Zaporozhye Area, environs of Berdyansk, 20.06.1937 (V. Nikolaev); 1 ♀ (ZMMU), Cherkassy Area, Kanev State Reserve, 12.09.1981 (K. Mikhailov); 1 ♀ (ZMMU), s.lo., 10.09.1981 (K. Mikhailov); 1 ♀ (ZMMU Ta-3691), Donetsk Area [Voisko Donskoia Area], Provalskaya Balka, 21.06.1908 (Troitskii); 3 ♀♀ (ZMMU Ta-3482), same area, Voiskovo Provalskii factory, 4.06.1908 (Pylnov). — RUSSIA: 1 ♀ (PSU), Krasnodar Province, Priukubanskii, 24.05.1970; 2 ♀♀ (PSU), Voronezh Area, 07.1922 (G. Yakobson); Moscow Area: 1 ♂ (ZMMU), Naro-Fominsk Distr., Ozhigovo, 16.08.1985 (K. Mikhailov); 1 ♀ (ZMMU), Serpukhov Distr., Mikhnevo, 6.08.1905 (G. Kozhevnikov); 1 ♂, 2 ♀♀ (ZMMU Ta-3836), Zvenigorod Distr., 28.06.1922; 1 ♀ (ZMMU Ta-4310), s.d., Lutsinskoee Bog, 18.06—11.08.1922; 1 ♀ (ZMMU Ta-3896), s.d., Lake Sima, 27.07.1922; 1 ♀ (PSU), Saratov Area, Balashevsk Distr., summer 1892 (Silantiev); Kostroma Area: 1 ♀ (ZMMU), Manturovo Distr., Shilovo, 5.07.1981 (E. Veselova); 2 ♂♂ (ZMMU), s.d., Davydovo, 26.11.1982 (E. Veselova); 1 ♀ (ZMMU Ta-3736), Arkhangelsk Area, mouth of Mezen River, 30.07.1902; Leningrad Area: 1 ♀ (PSU), mixed forest, 27.07.1931, coll. ?; 1 ♂ (PSU), Mshinskaya, 20.07.1931 (V. Stark); 1 ♀ (ZMMU Ta-3955), Ulyanovsk (former Simbirsk) Area, summer 1889; Astrakhan Area: 4 ♀♀ (PSU), Astrakhan sky Nature Reserve, Damchik, 30.06.1967 (A. Utotschkin); 1 ♂ (PSU), s.lo., forest, 20.05.1967 (Kotelnikova); 3 ♂♂, 2 ♀♀ (PSU), s.lo., on



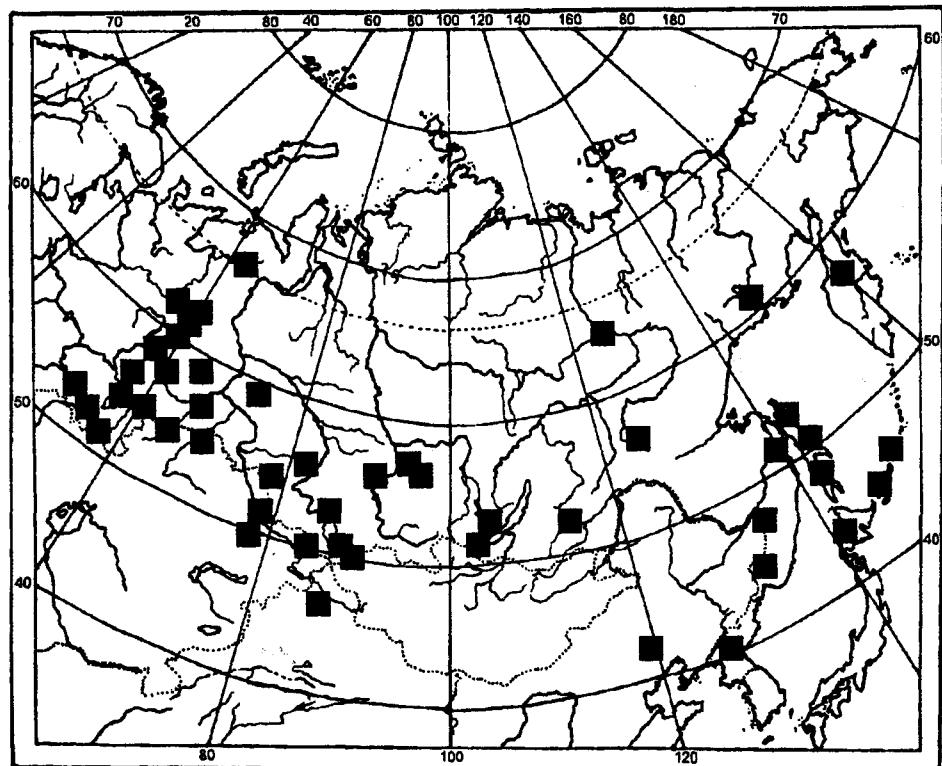
Figs 77–83. *Tibellus oblongus*. 77–78 — ♂ palpus, ventral and lateral views, respectively (Chelyabinsk Area); 79 — ditto, ventral view (Perm Area); 80–81, 83 — epigyne (Chelyabinsk Area); 82 — ditto (Perm Area).

Рис. 77–83. *Tibellus oblongus*. 77–78 — пальпа ♂, вид соответственно снизу и сбоку (Челябинская область); 79 — то же, вид снизу (Пермская область); 80–81, 83 — эпигина (Челябинская область); 82 — то же (Пермская область).

reed, 22.06.1966 (det. A. Utotschkin as *T. parallelus*); 1 ♀ (PSU), environs of Astrakhan, 05–06.1863 (leg. Gebel, holotype of *T. longicephalus*); 1 ♀ (ISEN), 50 km NW Astrakhan, Aksaraiskii, 26–28.05.1996 (V. Dubatolov & I. Lyubechanskii); 1 ♂ (PSU), Tatarstan, 21.07.1968 (A. Utotschkin). — CAUCASUS: 2 ♀♀ (PSU), valley of Kura River 14.05.1902 (M. Shnitnikov). — ARMENIA: 2 ♂♂, 3 ♀♀, (PSU), Erivan Area, Nagrom, 19.05.1909 (N. Bryanskii). — KAZAKHSTAN: 1 ♂ (ZMMU), Uralsk Area, Dzhanybek, 27.06.1982 (K. Mikhailov); 1 ♀ (ISEN Ph.838), Chimkent Area, environs of Arys, steppe, 13.05.1987 (D.L.); 1 ♂ (ISEN Ph.1963), s.lo., 24.05.1992 (O.L.); 1 ♀ (ISEN, 1962), Alma-Ata Area, environs of Alma-Ata, 10.06.1992 (O.L.). — UZBEKISTAN: 1 ♀ (PSU), Fergana Area, Lake Kulin, 17.07.1910 (leg. V. Milyutin, paratype of *T. longicephalus*); 1 ♀ (PSU), environs of Tashkent, valley of Chirchik River, 5.07.1932 (P. Veltishchev). — TAJIKISTAN: 1 ♀ (PSU), environs of Dushanbe, 22.06.1933 (V. Popov); 1 ♀ (PSU), Kulyab, 14.07.1933 (V. Popov). — U.S.A.: 1 ♂ (ZMMU), Wisconsin State, Bayfield Co., 1 km of Pelta, 12.06.1988 (B. Cutler); 1 ♂ (ISEN), Washington State; summer 1993 (P. Tikhmenev).

DIAGNOSIS: *T. oblongus* can be distinguished easily from all congeners by the embolus visible all over its extent in ventral view (Figs 77, 79) and its tip long, straight, with a small spiral notch on top (Fig. 26). Females differ chiefly by the wide, deeply impressed copulatory openings situated near the posterior margins of the epigyne (Figs 38 & 50). See also the diagnosis of *T. macellus*.

DESCRIPTION: MALE. Measurements. Total length 6.6–7.5. Carapace 3.0–3.2 long, 2.3–2.5 wide. Median ocular area: MOA-WA 0.31, MOA-WP 0.41, MOA-L 0.37. Clypeal height 0.35. Cheliceral length 0.89. Length of leg segments: Leg femur patella tibia metatarsus tarsus
 I 3.52–3.73 1.12–1.62 2.93–3.52 2.83–3.00 1.52–1.91
 II 3.90–4.52 1.53–1.60 3.71–4.00 3.10–3.83 1.95–2.39
 III 2.70–3.12 0.92–1.20 1.93–2.63 1.71–2.33 1.00–1.42
 IV 2.65–4.34 0.93–1.52 1.66–3.72 1.71–3.30 1.24–1.91



Map 4. Distribution of *Tibellus oblongus*.

Karta 4. Распространение *Tibellus oblongus*.

Leg spination. Legs I–III: femur d, pr and rt 1-1-1; tibia pr and rt 1-1-1, v 2-2-2a; metatarsus pr and rt 1-1, v 2-2. Leg IV: femur d and pr 1(0)-1-1, rt 1-1-1; tibia as in legs I–III; metatarsus pr 1-1-1a, rt 1-1, v 2-2. Spination of cymbium: three spines at base (Fig. 18).

Colouration. Carapace light brown to red-brown, with a dirty brown median and with lateral stripes; sometimes with 2–4 dark markings on lateral stripes. Sternum as well as carapace with dark edges. Legs coloured like carapace. Abdomen yellowish-brown to brown, dorsum with a dull lanceolate marking and a brown median stripe; sometimes with two dark thin lateral lines and two black apical spots. Venter with a light brownish median stripe. Figs 26, 77–79.

FEMALE Measurements. Total length 8.1–12.1. Carapace 2.6–3.8 long, 2.1–2.8 wide.

	femur	patella	tibia	metatarsus	tarsus
I	2.72–3.73	1.12–1.51	2.29–3.12	1.93–2.72	1.32–1.72
II	3.12–4.00	1.05–1.52	2.71–3.60	2.22–3.00	1.45–1.93
III	2.20–2.92	0.74–1.10	1.64–2.13	1.34–2.13	0.93–1.12
IV	3.53–4.34	1.00–1.42	2.50–3.12	2.21–2.90	1.21–1.62

Leg spination. Leg I: femur d 1-1-0, pr 1-1-1, rt 1-1-1(0); tibia pr 1-1-1, rt 1-1-0, v 2-2-2a; metatarsus pr and rt 1-1, v 2-2. Leg II: femur d and rt 1-1-1(0), pr 1-1-1; tibia pr and rt 1-1-1, v 2-2-2a; metatarsus pr and rt 1-1, v 2-2. Leg III: femur d and pr 1-1-1, rt 0(1)-0-0; tibia pr and rt 1-1-1, v 2-2-2a; metatarsus pr and rt 1-1, v 2-2. Leg IV: femur d 1-1-0, pr 1-1(0)-0, rt 0(1)-0-0; tibia pr and rt 1-1-1, v 2-2-2a; metatarsus pr 1-1-1a, rt 1-1, v 2-2-1a.

Colouration. Carapace creamy white to light yellow-brown with a dirty brown median and with marginal stripes. Median stripe forked in front. A very thin longitudinal line of spots and fine setae between median and lateral stripes (sometimes not expressed). Sometimes three pairs of dark markings on lateral stripes (as in *T. maritimus*) (Figs 9–11). Sternum as

well as carapace with dark edges. Femur coloured like carapace; tibia, metatarsus and tarsus somewhat infuscate, light brown. Abdomen whitish, dorsum variegated, with a pattern ranging from pale up to spotty; with a distinct lanceolate marking, a median stripe and two black spots in rear 1/3. Venter yellow without median stripe.

Epigyne and spermathecae as in Figs 38, 42, 50, 80–83.

DISTRIBUTION: A Holarctic polyzonal pattern. The localities in Siberia are shown on Map 4. Previously recorded from the Urals (from Polar Urals [Tanasevitch, 1985] to southern Ural steppes [Esyunin & Efimik, 1996]), Tyumen Area [Shlykov, 1977], East Kazakhstan [Savelieva, 1970, 1979], Altai [Marusik et al., 1996], Antzyferovo [Holm, 1973], Krasnoyarsk Province [Sternbergs, 1977; Izmailova & Verzhutskii, 1981], Irkutsk Area [Izmailova, 1972], Transbaikalia [Verzhutskii et al., 1985; Izmailova, 1980, 1989; Danilov, 1990, 1991], Yakutia, Magadan Area [Marusik, 1991; Marusik et al., 1993], Kamchatka [Sytsheskaya, 1935], Khabarovsk Province [Kurenschikov, 1993], Primorye Province [Sternbergs, 1988], Sakhalin, and Kurile Islands [Peelle & Saito, 1933; Marusik et al., 1992].

HABITATS: Lichen tundra (the North Urals), different kinds of forest, bogs, meadows, mountain meadows (Gorno-Altaisk Republic), steppes, shrubby steppes.

Tibellus orientus sp.n.

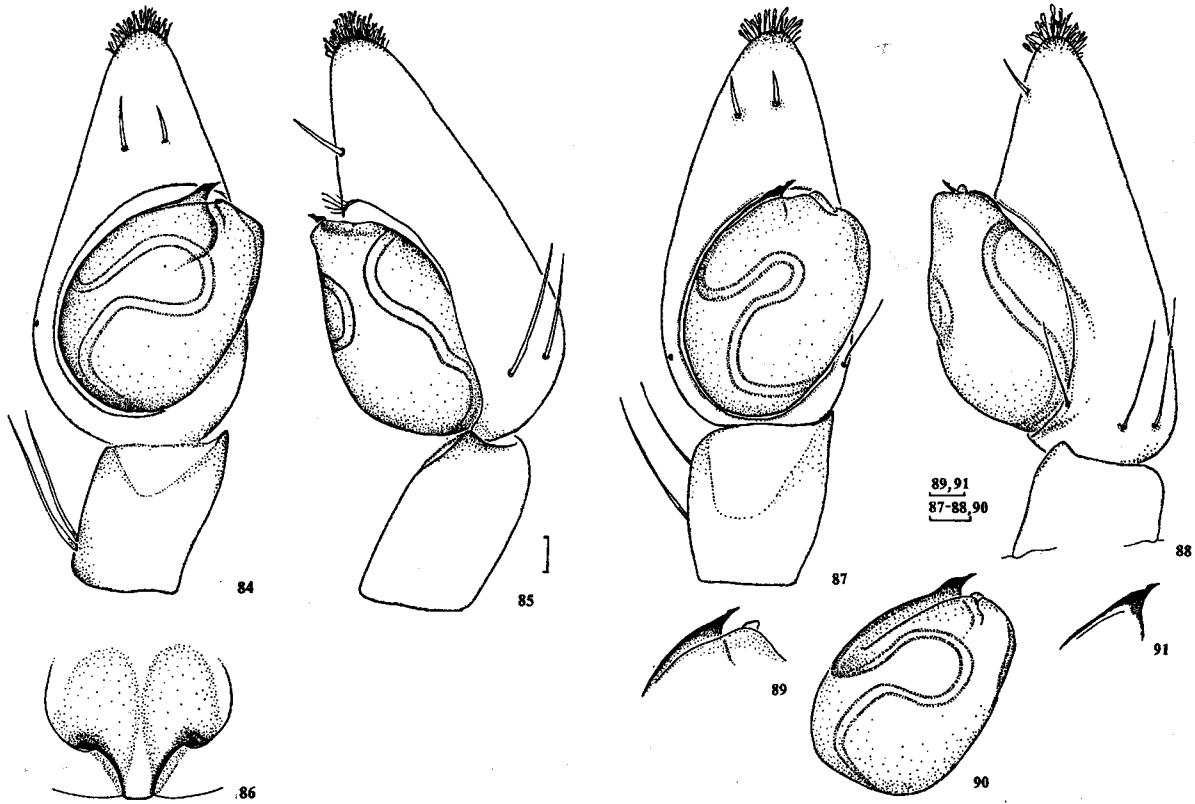
Figs 17, 21–22, 36, 43, 53, 84–91.

Tibellus tenellus non L.Koch, 1876: Song, 1987: 272, fig. 229a–c (♂, ♀, not examined).

Tibellus tenellus non L.Koch, 1876: Song & Zhu, 1997: 212, fig. 153a–c (♂, ♀, not examined).

Holotype: 1 ♂ (ZMMU), Chita Area, Adon-Cheron, humid meadow, 20.06.1995 (E. Smirnova).

Paratypes: Buryatia: 1 ♀ (UT), Barguzinsky Mt. Range, Olso River, 54°52'N, 110°55'E, 950 m cliff, 6.07.1996 (S. Koponen); 1



Figs 84–86. *Tibellus orientus* sp.n.: 84–85 — ♂ palpus, ventral and lateral views, respectively (holotype, Chita Area); 86 — epigyne, (paratype, Primorye Province).

Рис. 84–86. *Tibellus orientus* sp.n.: 84–85 — пальпа ♂, вид соответственно снизу и сбоку (голотип, Читинская область); 86 — эпигина, (паратип из Приморского края).

♀, 1 ♂ (PSU), same range, Upper Kurumkan River, 54°21'N, 110°12'E, 700 m, 10.7.1996 (S. Koponen); 1 ♂ (UT), Barguzin, Seya hot spring, 54°50'N, 111°18'E, 600 m, 3.07.1996 (S. Koponen); Irkutsk Area: 1 ♀ (ZMMU), Slyudyanka Distr, along river, on *Spiraea*, 5.07.1988 (K. Mikhailov); 1 ♀, (PSU), Lake Baikal, Marituy and Chabig-Tuy, 9.06.1908 (leg. I.D. Kuznetsov, det. A. Utotschkin as *T. macellus*); Chita Area: 1 ♂ (ISEN), Adon-Cheron, 21.06.1995 (E. Smirnova); 1 ♂ (ISEN), Dahiria, N bank of Lake Zun-Torey, 13.07.1996 (V. Dubatolov); 1 ♂ (ISEN), Daurskii Reserve, between lakes Zun-Torey and Barun-Torey, steppe, 6.06.1995 (I. Lyubechanskii & V. Smirnova); 1 ♀ (ISEN), Amurskaya Area, Svobodnenskii Distr, M. Seranka, sweeping on *Carex* in swamp, 20.07.1994 (E. Malikova); Primorye Province: 1 ♀ (ISEN), Usuriisk Distr, Gornotaezhnoe, 20–30.06.1983 (E. Budris); 1 ♀ (ISEN, 3440), s.lo., 9–19.07.1990 (A. Tanasevitch); 1 ♂ (PSU), Yakovlevka, 07.1926 (leg. A. Dyakonov & N. Filipyev, det. A. Utotschkin as *T. macellus*); 1 ♀ (PSU), 31.07.1978 (V. Popova & B.Z.); 2 ♀♀ (ISEN), "Kedrovaya Pad" Nature Reserve, 19.07.1976 (B.Z.); 3 ♀♀ (ISEN), SW part Khasan Distr, environs of Andreevka, 42°35'-36'N, 131°13'E, 11–15.08.1998 (Y.M.); 1 ♀ (ISEN), S part of environs of Anisimovka, 43°10'N, 132°46'E, 24–28.07.1998 (Y.M.); 1 ♀ (ISEN), 19 km SE Ussuriysk, Gornotaezhnoe, 25.06–1.07.1995 (V. Dubatolov & R. Dudko); 1 ♀, 1 ♂ (PSU), Askold Island (P. Schmidt).

DIAGNOSIS: Males of *T. orientus* are similar to those of *T. asiaticus* and *T. aspersus* but can be separated by the open tip of the embolus and its shape, usually the angular broaden-

Figs 87–91. *Tibellus orientus* sp.n., paratypes: 87–88 — ♂ palpus, ventral and lateral views, respectively (Buryatia); 89–91 — embolus (Buryatia, Chita Area, and Primorye Province, respectively).

Рис. 87–91. *Tibellus orientus* sp.n., паратипы: 87–88 — пальпа ♂, вид соответственно снизу и сбоку (Бурятия); 89–91 — эмболюс (соответственно Бурятия, Читинская область и Приморский край).

ing at the base of the tip of the embolus (Figs 21, 84 & 90). Females of *T. orientus* are similar to those of *T. rothi* Schick, 1965 [Schick, 1965: 101–103, figs 135 & 136], but can be distinguished by the more narrow medium septum of the epigyne and the structure of the spermathecae (Figs 36, 43 & 86). Both sexes of *T. orientus* differ from East Palaearctic congeners by two brown longitudinal stripes on the ventral side of the abdomen.

DISTRIBUTION: Siberia, the Far East of Russia (Map 2), and China [Song, 1987].

HABITATS: Steppes and meadows.

DESCRIPTION: MALE. Measurements. Total length 7.2. Carapace 3.0 long, 2.5 wide. Median ocular area: MOA-WA 0.34, MOA-WP 0.41, MOA-L 0.38. Clypeal height 0.47. Cheliceral length 0.75. Length of leg segments:

	Leg femur	patella	tibia	metatarsus	tarsus
I	3.52	1.41	2.93	2.53	1.62
II	4.22	1.53	3.61	3.20	2.13
III	2.20	1.32	2.63	2.23	1.32
IV	4.24	1.32	3.42	3.20	1.64

Leg spination. Legs I–III: femur d, pr and rt 1-1-1; tibia pr and rt 1-1-1, v 2-2-2a; metatarsus pr and rt 1-1, v 2-2. Leg IV: femur and tibia as in legs I–III; metatarsus pr 1-1-2a, rt 1-1-1a, v 2-2-1a. Spination of cymbium: four spines at base (Fig. 17).

Colouration. Carapace yellow-red with a median and marginal stripes brown. Legs coloured like carapace, with pale brown spots and numerous fine spines. Sternum yellow with thin brown spots. Abdomen dark creamy with a red-brown median stripe, two red-brown interrupted stripes on both sides of the median stripe, and with two black points. Venter dark creamy with two red-brown longitudinal narrow stripes.

Palpal structure as in Figs 21–22, 84–85, 87–91.

FEMALE. Measurements. Total length 8.6–9.1. Carapace 3.1–3.4 long, 2.5–3.1 wide. Median ocular area: MOA-WA 0.38, MOA-WP 0.53, MOA-L 0.50. Clypeal height 0.56. Cheliceral length 1.12. Length of leg segments:

	Leg	femur	patella	tibia	metatarsus	tarsus
I		3.22–3.63	1.22–1.81	2.93–3.32	2.33–2.72	1.42–1.72
II		3.82–4.50	1.42–1.71	3.31–4.10	2.72–3.30	1.65–1.98
III		2.90–3.42	1.14–1.40	2.34–2.53	1.74–2.31	0.98–1.32
IV		3.63–4.44	1.10–1.42	2.82–3.62	2.21–3.20	1.32–1.61

Leg spinulation. Legs I–II: femur d, pr and rt 1-1-1; tibia pr and rt 1-1-1, v 2-2-2a; metatarsus pr and rt 1-1, v 2-2. Leg III: femur d and pr 1-1-1, rt 0-0-1; tibia and metatarsus as in legs I–II. Leg IV: femur d 1-1-1, pr and rt 0-0-1; tibia as in legs I–III; metatarsus pr 1-1-1a, rt 1-1-0(1)a, v 2-2-1a.

Colouration as described for male but lighter. Epigyne and spermathecae as in Figs 36, 43, 53 & 86.

NAME: The species name means “oriental”.

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