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Thrips magadanicus sp.n., a new thrips from the Russian Far East (Insecta: Thysanoptera: Thripidae)

Thrips magadanicus sp.n., новый вид трипса с Дальнего Востока России (Insecta: Thysanoptera: Thripidae)

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КЛЮЧЕВЫЕ СЛОВА: фауна, Магаданская область, новый вид, Дальний Восток, Россия, трава, Thripidae, *Thrips*, Thysanoptera.

ABSTRACT. In the present paper we describe a new species of the thysanopteran genus *Thrips*, which was collected in the Magadan Oblast in the Russian Far East.

РЕЗЮМЕ. В данной работе мы описываем новый вид трипса рода *Thrips* (Thysanoptera, Thripidae), собранный в Магаданской области на Дальнем Востоке России.

Introduction

In terms of faunistics, thrips, the members of Thysanoptera, are among the least studied insects [Ulitzka, 2020]. Up until today, there still remain regions for which little or no data is available. One of such is the Magadan Oblast located in the north-eastern vastness of Russia. This area is characterised by extreme climatic conditions influenced by the Arctic Ocean to the north, the cold Sea of Okhotsk to the east, and the continental terrain of Sakha to the west. Winters may last there for eight months with temperatures ranging from –50°C to −70 °C, depending on the location; in summer the thermometer barely shows above 15 °C, and nights bring typical summer frosts [Newell, 2004]. The defining factors of this area are the widespread permafrost and the lack of sheltered areas, both leading to a generally low level of biodiversity. Lelej & Storozhenko [2010] show that this also applies to the diversity of insects, which is significantly lower in the Magadan region than in other areas of the Russian Far East (except for the polar desert zones in the Chukchi Autonomous District). Regarding Thysanoptera, some species have become well established in cold regions and appear to have adapted to the short vegetation period of their host plants as well as to hibernation at very low temperatures. This has been documented in a number of studies on the thysanopteran fauna of Yakutia [Evdokarova, 2011; Evdokarova, Velikan, 2011; Evdokarova, Doričova, 2013, 2015].

The new species described in the following is allocated to the genus *Thrips* Linnaeus, 1758. Within Thysanoptera, *Thrips* is the most species-rich genus with more than 300 species worldwide [ThripsWiki, 2023]. Members of this genus occur throughout the world except for the neotropics [Mound, Masumoto, 2005]. Regarding Siberia and the Russian Far East members of *Thrips* have been reported by John [1925, 1928], Meshcheryakov [1986] and Scalon [1933, 1935], however, only the works of Evdokarova [2011]; Evdokarova & Velikan [2011]; Evdokarova & Doričova [2013, 2015] include records of this genus from the northern and much colder parts of this large area. The latter authors mention nine species, most of which are widespread throughout the Palaearctic (see zur Strassen [2003]) and which are also found in the Nordic countries [Kobro, 2011]: *T. albopilosus* Uzel, 1895, *T. atratus* Haliday, 1836, *T. brevicornis* Priesner, 1920, *T. major* Uzel, 1895, *T. palustris* Reuter, 1899, *T. simplex* (Morison, 1930), *T. trybomi* (Karny, 1908), *T. viminalis* Uzel, 1895 and *T. vulgatissimus* Haliday, 1836. Some of these species are also known from the north of Canada and from Alaska, USA [Chiasson, 1985; Nakahara, 1994].

At present, two taxa of Thysanoptera are listed from the Magadan Oblast [Lelej, Storozhenko, 2010: 378, tab. 3]. These data came from Meshcheryakov [1986]

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and refer to *Aeolothrips albicinctus* Haliday, 1836 and *Apterothrips secticornis* (Trybom, 1896) [A.S. Lelej pers. com.]. Members of the genus *Thrips* are not known from this inhospitable region. With the present paper we describe a first species of this genus from the Magadan Oblast.

Material and methods

Several specimens of the species described below had been collected by A.A. Meshcheryakov in the summer 1985 and have been entrusted to the first author. The specimens were stored in alcohol for a long time, but for microscopic examination they were macerated in KOH and finally mounted on slides in Canada balsam according to Ulitzka [2017]. Five specimens — including the holotype — are deposited in the collection of the second author (Collection Ulitzka, serial number MU-RU-10), the others are stored in the collection of the Institute for Biological Problems of Cryolithozone, Siberian Branch, Russian Academy of Sciences, Yakutsk (collection number: 216 Magadan materials). The specimens were examined and measured using a Zeiss Stemi SV-11 Apo stereomicroscope and a Zeiss standard microscope with the following objectives: Zeiss Neofluar 6.3/0.20 160/-, Zeiss Plan 10/0.22 160/-, Zeiss Plan 16/0.35 Ph2160/0.17 and Zeiss Plan 40/0.65 160/0.17 Ph2. Images were taken with a digital camera (Canon EOS 70d) attached to the microscope, and these were produced using Helicon Focus software. Adobe Photoshop and Topaz Photo AI were used for final colour adjustment and sharpening. Details were drawn using a Zeiss drawing tube attached to the microscope. All photos and line drawings are the work of the second author.

Taxonomy

Order THYSANOPTERA
Suborder TEREBRANTIA
Family THRIPIDAE
Genus *Thrips* Linnaeus, 1758

***Thrips magadanicus* sp.n.**
Figs 1–9.

MATERIAL STUDIED. Holotype ♀ (Fig. 1), Russia, Magadan Oblast, Kava R., 95 km upstream from mouth (stream pool No. 72), 59°47'32.78"N 148°16'24.29"E, bend with rocky bank, from grasses, 24.VI.1985, leg. Meshcheryakov A.A., coll. Ulitzka. Paratypes: 5 ♀♀ collected with holotype, coll. Ulitzka and 2 ♀♀ collected with holotype, coll. Institute for Biological Problems of Cryolithozone, Siberian Branch, Russian Academy of Sciences, Yakutsk.

DESCRIPTION. Female microptera. Body (Fig. 1) uniformly pale brown; tarsi, distal half of fore tibiae and antennal segments III–VIII somewhat lighter; wings slightly shaded; major body setae and wing setae brown.

Head (Fig. 2) wider than long, widest at base; cheeks convex behind compound eyes. Ocellar setae pair s1 lacking; s3 arising outside anterior margins of ocellar triangle, much longer than s2; postocular setae varying in length, s1 longer than others (about as long and strong as ocellar setae s3). Vertex transversely sculptured behind compound eyes; ocellar area smooth, with some faint reticules only along the basal part. Antenna (Fig. 8) 8-segmented; segments III and IV with a forked sensorium each; III with pedicel at base, vasiform constricted distally. Mouth cone short but pointed; maxillary palps 3-segmented.

Pronotum (Fig. 9) wider than long; sculptured with transversal lines near fore and hind margin, faintly sculptured in the middle and laterally; with 3 pairs of discal setae; 2 pairs of posteroangular setae, subequal in length; 2 pairs of posteromarginal setae, s1 much longer than s2; anterior margin with 4 pairs of setae, s2 conspicuously long (Figs 2, 9); lateral margin with 4–5 pairs of setae, second last setae slightly set inwards and notably longer. Mesonotum (Fig. 3) with transverse striations which cephaladly extend over the anteromedian campaniform sensilla. Metanotum (Fig. 3) striate laterally, anteromedially with longitudinal reticulations; median setae stout, attached behind anterior margin of the plate; with campaniform sensilla. Wings (Figs 1, 7) micropterous; fore wings short; first vein with a row of 6 setae; clavus with 1 discal and 4 marginal setae (5 in some of the paratypes); fringes not developed. Mesothoracic furca with spinula, metathoracic furca strong but without spinula.

Abdominal tergites transversely striate; I with one pair of small median setae; II with 3 lateral setae (Fig. 5); II–VIII with setae s1 and s2 stout and similar in length (Fig. 1), s3 on VI–VII very small. VIII without posteromarginal comb of microtrichia (Fig. 6); IX with setae s1–s3 long, extending beyond apex of X, with 2 pairs of campaniform sensilla (Fig. 6); ctenidia on tergite VI weak but well-developed on VII–VIII, on VIII located between spiracle and setae s2, terminating in front of tergal setae s3 (Fig. 6). Pleurotergites III and IV with 1–2 accessory setae (Fig. 4). Abdominal sternite I with 3 very small setae between the hind coxae; II with 2 pairs of marginal setae (Fig. 4), III–VII with 3 pairs of marginal setae (Fig. 4), VII with marginal setae s1 arising in front of the posterior margin; sternites II–VII with 6–10 accessory setae arranged roughly in one single row (Fig. 4).

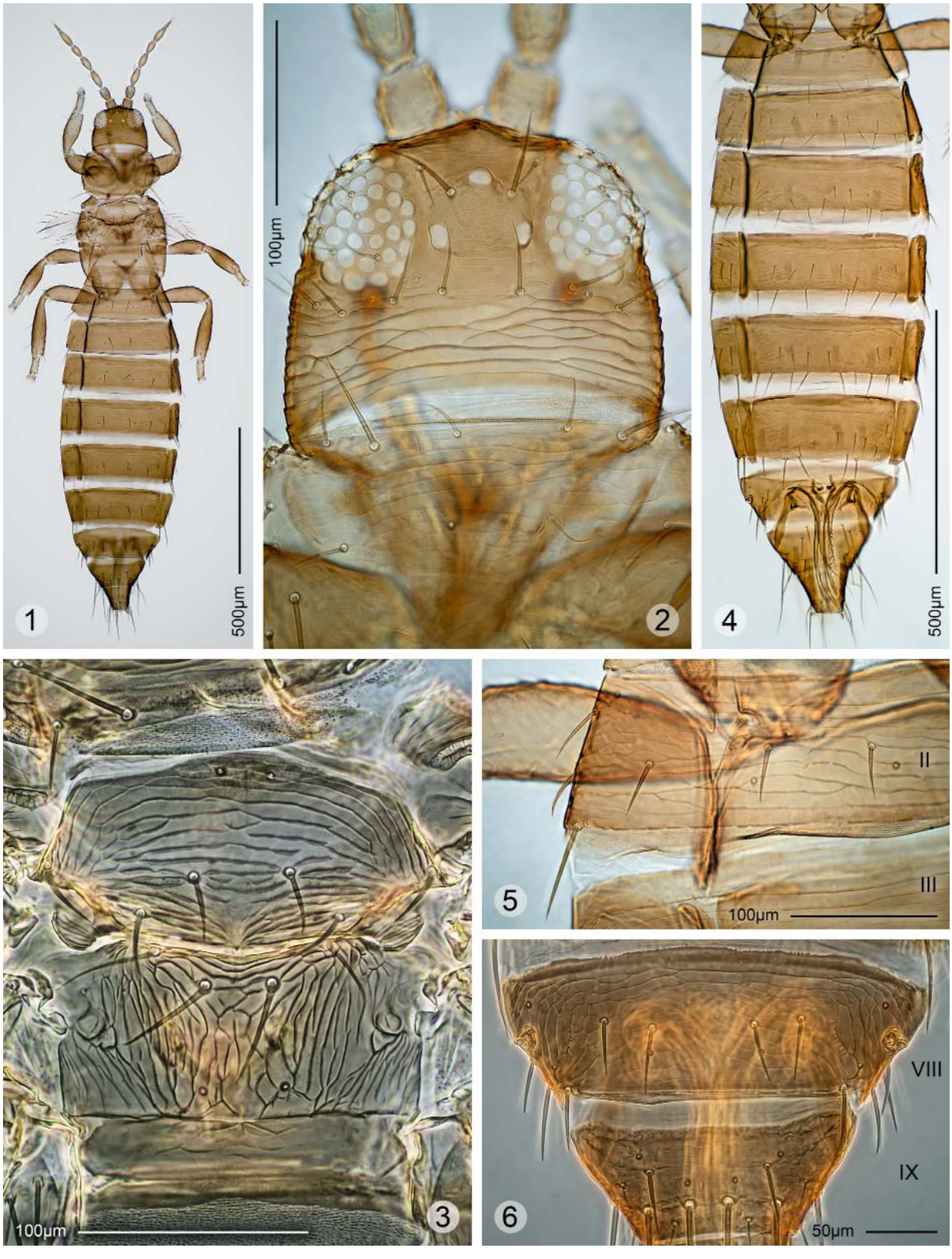
Measurements (holotype female in microns). Body length 1740. Head, length 135; width across eyes 175, at base 195; ocellar setae s3, length 40. Pronotum, length 150, width 260; posteroangular setae 95–110; posteromarginal setae s1 50, s2 25; anteromarginal setae s1 30, s2 58; longest lateral setae 53. Metanotum median setae 35, distance from fore margin 17. Abdominal tergite IV, length of setae s1 38, s2 38, s3 35. Fore wing, length 70. Antennal length 340; length (largest width) of segment I 33 (33), II 43 (30), III 70 (25), IV 55 (25), V 50 (22), VI 58 (22), VII 12 (10), VIII 19 (7).

NOTE. Male unknown.

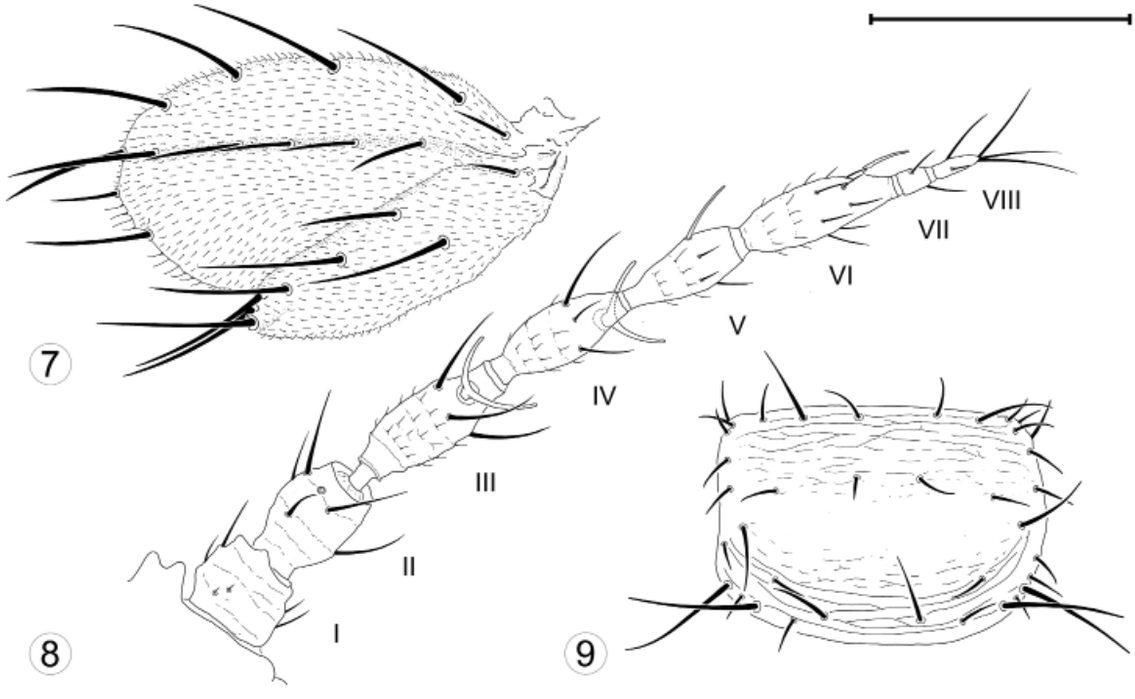
ETYMOLOGY. The epithet *magadanicus* refers to the Magadan Oblast, where the specimens have been collected.

DIFFERENTIAL DIAGNOSIS. The new species from the Magadan Oblast definitely belongs to the genus *Thrips*. It shows the consistent character states indicated for members of the *Thrips* genus-group except for criterion No. 5 [Mound, 2002: 380], which states 'tergites VI–VII with discal setae s2 larger than s1 & s3' (see Fig. 1). This character state, however, does generally not seem to apply to species which have the tergal setae long and stout. *T. dilatatus* Uzel, 1895, *T. discolor* Haliday, 1836 and *T. gentluteae* Bournier, 1983, for example, do not show this feature either. Furthermore, *T. magadanicus* **sp.n.** corresponds with the diagnosis for the genus *Thrips* given by Mound & Masumoto [2005: 10], but has only two instead of three or four pairs of posteromarginal setae (see Fig. 9). This latter character state, however, is not always consistent. Other *Thrips* species have only two pairs of these setae, such as *T. nonakai* Masumoto, Okajima, 2013, or occasionally *T. sambuci* Heeger, 1854 (see Masumoto & Okajima [2013: 4, fig. 155]; Mound *et al*. [1976: 48, fig. 181]).

T. magadanicus **sp.n.** is unusual in the combination of certain characters. At first glance, its appearance resembles other micro-



Figs 1–6. *Thrips magadanicus* **sp.n.**, female: 1— habitus (holotype); 2 — head; 3 — meso- and metanotum; 4 — abdomen, ventral view showing arrangement of marginal and discal setae; 5 — tergite II, left half, showing 3 lateral setae; 6 — tergites VIII and IX.
Рис. 1–6. *Thrips magadanicus* **sp.n.,** самка: 1— габитус (голотип); 2 — голова; 3 — мезо- и метанотум; 4 — брюшко, вентральный вид, показывающий расположение маргинальных и дискальных щетинок; 5 — II тергит, левая половина, с 3 латеральными щетинками; 6 — VIII и IX тергиты.



Figs 7–9. *Thrips magadanicus* **sp.n.**, line drawings: 7 — left fore wing (micropterous); 8 — right antenna; 9 — pronotum. Scale bar: 100 μm for figs 7 and 8, 200 μm for fig. 9.
Рис. 7–9. *Thrips magadanicus* **sp.n**., линейные рисунки: 7 — левое переднее крыло (короткокрылый); 8 — правая антенна; 9 — переднеспинка. Масштаб: 100 мкм для рис. 7 и 8, 200 мкм для рис. 9.

pterous *Thrips* species with stout abdominal tergal setae, such as *T. dilatatus* Uzel, 1895, *T. discolor* Haliday, 1836 *T. funebris* Bagnall, 1924, *T. gentluteae* Bournier or *T. incognitus* Priesner, 1914. However, in contrast to these, the antennae of the new species are eight-segmented (Fig. 8) and its abdominal sternites as well as the pleurotergites are furnished with accessory setae (Fig. 4). The combination of such setae on the sternites as well as on the pleurotergites leads to a group of species mainly distributed in Australia and New Zealand [Palmer, 1992]. These, however, in contrast to the new species, have either fully developed wings or abdominal segment VIII with a marginal comb present at least laterally. A quite variable Nearctic species, which might in certain variations resemble to *T. magadanicus* **sp.n.** is *T. thalictri* Hood, 1931. According to Nakahara [1994] it may occur with characteristics corresponding to those of *T. magadanicus* **sp.n.**, i.e. reduced wings, eight-segmented antennae, two pairs of pronotal posteromarginal setae and three pairs of lateral setae on the second abdominal tergite. *T. thalictri*, however, has the posteromarginal comb on abdominal tergite VIII consistently complete and sternite I without anteromedian setae. In contrast, the comb on tergite VIII is completely absent in *T. magadanicus* **sp.n.** (even laterally; see Fig. 6) and the tiny setae on the anterior margin of abdominal sternite I are developed.

Competing interests. The authors declare no competing interests.

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