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NEW DATA ON THE MILLIPEDES (DIPLOPODA) FROM EAST KAZAKHSTAN (ALTAI)

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Julus kazakhus Mikhaljova, **sp. n.** and *Schizoturanius levis* Mikhaljova, **sp. n.** are described from East Kazakhstan, Altai. *Sibiriulus multinicus* Mikhaljova, 2001 is new to the fauna of Kazakhstan. The record of *Megaphyllum* aff. *sjaelandicum* (Meinert, 1868) from the Kazakhstan Altai (Golovatch, 1992) belongs to *M. sjaelandicum* (Meinert, 1868) which is new to the fauna of Kazakhstan.

KEY WORDS: Millipedes, taxonomy, fauna, new species, new records, Altai, Central Asia.

Е. В. Михалёва¹⁾, К. Улыкпан²⁾, У. Д. Буркитбаева²⁾. Новые данные о двупарноногих многоножках (Diplopoda) из Восточного Казахстана (Алтай) // Дальневосточный энтомолог. 2013. N 260. С. 1-11.

Из Восточного Казахстана (Алтай) описаны *Julus kazakhus* Mikhaljova, **sp. n.** и *Schizoturanius levis* Mikhaljova, **sp. n.** Впервые для фауны Казахстана указан *Sibiriulus multinicus* Mikhaljova, 2001. Указание из Казахстана (Алтай) *Megaphyllum* aff. *sjaelandicum* (Meinert, 1868) (Golovatch, 1992) относится к *M. sjaelandicum* (Meinert, 1868), который является новым для фауны Казахстана.

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INTRODUCTION

The knowledge of the millipede fauna of the Kazakhstan is still patchy and incomplete. Some faunistic information concerning the millipedes from certain localities in the region is contained in several publications (Enghoff, 1985; Golovatch, 1979; Golovatch & Wytwer, 2003; Lokšina & Golovatch, 1979; Read & Golovatch, 1994; Mikhajlova *et al.*, 2013). In addition, an undetermined species referred to as *Megaphyllum* aff. *sjaelandicum* was recorded from the environs of Ust-Kamenogorsk, East Kazakhstan, Altai (Golovatch, 1992). Up to now this species is not identified. However among the material recently collected in the environs of Ust-Kamenogorsk *Megaphyllum sjaelandicum* (Meinert, 1868) has been found. We believe that former undetermined species belongs to *Megaphyllum sjaelandicum*, taking into account the geographical evidence and the variability of latter species (see below). This species is new to Kazakhstan.

In addition, among the diplopod samples recently collected in East Kazakhstan (Altai), two species new to science and one species new to the fauna of Kazakhstan have been found. The descriptions of the new species and data on other collected species are presented below.

MATERIAL AND METHOD

Material treated here has been deposited in the collections of the Institute of Biology and Soil Science, Far Eastern Branch of the Russian Academy of Sciences, Vladivostok, Russia (IBSS), Pavlodar State University, Pavlodar, Kazakhstan (PU), and Zoological Museum, State University of Moscow, Russia (ZMUM), as indicated in the text.

Specimens were kept in 70–75% ethanol. In the process of studying the material, the gonopods and some other parts were dissected from a limited number of males and mounted in glycerin as temporary micropreparations. SEM micrographs were prepared at the Centre of Collective Use “Biotechnology and Gene Engineering” of the Institute of Biology and Soil Science, Far Eastern Branch of the Russian Academy of Sciences in Vladivostok, Russia using a Zeiss Evo 40 scanning electron microscope. Mounts for SEM were made through air-drying after transfer to acetone via 96% alcohol, mounting on stubs, and coating with gold and platinum. After examination, SEM material was removed from stubs and returned to alcohol, all such samples being kept at IBSS.

A “body segment formula” indicates the number of podous (including gonopod segment) and apodous segments in an individual. This formula is $x(-y)$ where x = sum of podous and apodous body segments excluding telson, y = number of apodous body segments before telson.

LIST OF THE SPECIES WITH DESCRIPTIONS OF NEW TAXA

Schizoturanius levis Mikhaljova, sp. n.

Figs 1–4

MATERIAL. Holotype – ♂ (IBSS), Kazakhstan, Vostochno-Kazakhstanskaya oblast, Zaisan District, 1735 m, 17.VII 2011, leg. K. Ulykpan and U.D. Burkitbaeva. Paratypes: Kazakhstan, Vostochno-Kazakhstanskaya oblast, Zaisan District: 4 ♂, 6 ♀, 3 juveniles, 2 fragments (IBSS), 2 ♀ (PU), 1 ♂, 1 ♀ (ZMUM), together with holotype, 17.VII 2011, leg. K. Ulykpan and U.D. Burkitbaeva; 2 ♂ (PU), 1 ♂, 2 juveniles (IBSS), 1848 m, 8.VII 2011, leg. K. Ulykpan and U.D. Burkitbaeva; 2 ♂, 1 fragment (IBSS), 1680 m, 13.VII 2011, leg. K. Ulykpan and U.D. Burkitbaeva.

DESCRIPTION. MALE. Length 11–14 mm, width 0.9–1.0 mm. Coloration in alcohol pale pinkish beige, colour brighter in anterior and posterior body portions.

Head moderately densely setose, occiput covered with tiny hairs. Antennae clavate, in situ reaching to beginning of somite 3. Collum ovoid, considerably narrower than head with genae. Body growing considerably broader from segment 5–6, remaining parallel-sided until segment 16. Metazonites 2–4 somewhat shorter than subsequent ones. Edges of narrow, swollen paraterga laterally weakly rounded, smooth. Metazonital polygonal sculpture almost indistinct, strongly obliterated on midbody segments (Fig. 1). Metatergal setae tiny (they can not be seen in midbody segments), they more or less distinct in anterior and posterior parts of body. Prozona alveolate. Caudal projection of epiproct rather short, digitiform, rounded at tip, carrying two apical setae. Body moniliform.

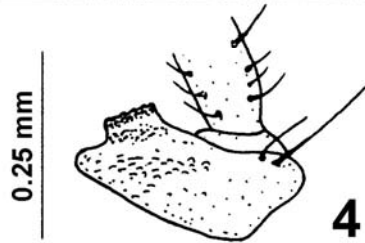
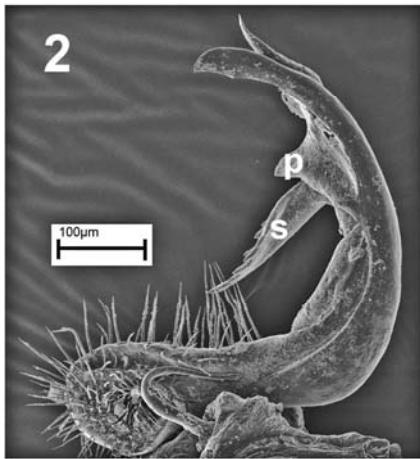
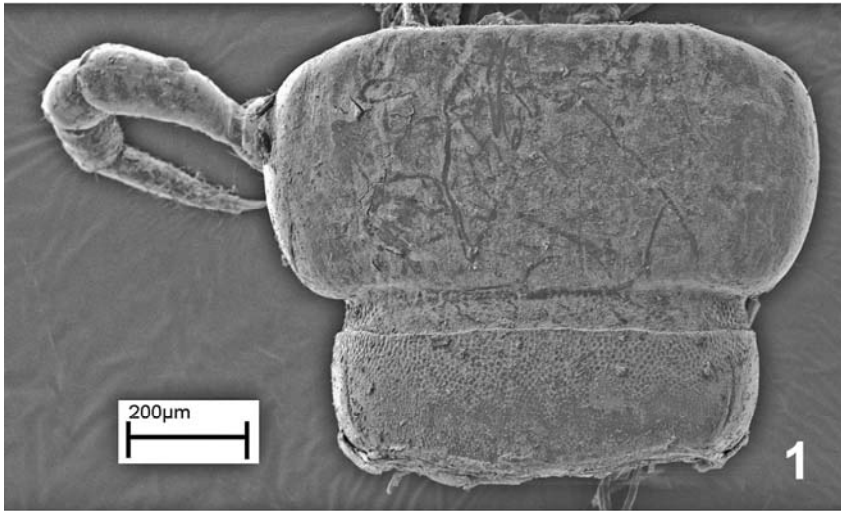
Leg pair 1 somewhat reduced as compared to other legs. Legs grow increasingly slender toward telson, ventrally more densely setose. Tarsus, postfemur, femur and praefemur with sphaerotrichs on ventral surface. Claws normal, without additional claws.

Gonopods (Figs 2, 3) falcate, bifid distally, telopodites in situ crossing each other. Solenomere straight spine-shaped, tibiotarsus curved caudad, its distal part flat. Postfemoral region with small plate (**p**) and long external flat process (**s**) serrate laterally. Process **s** directed dorsally. At base of solenomere seminal groove with a characteristic loop, ending up on a micropilose pulvillus supplied with a subterminal accessory seminal chamber.

FEMALE. Length 9.5–10 mm, width 0.8–0.9 mm. Legs distinctly slenderer and shorter compared to male. Epigynal ridge behind leg pair 2 traceable. Coxa 2 with lateral prominence (Fig. 4). Vulva elongate, ovoid. Both valves and the operculum setose distally.

DIAGNOSIS. The species differs from congeners by the straight spine-shaped gonopod solenomere as well as gonopod postfemoral region with a long process serrate laterally and a small plate.

ETYMOLOGY. The specific epithet refers to the practically smooth surface of metatergites.



Figs. 1–4. *Schizoturanius levis* sp. n., male paratype (1–3), female paratype (4). 1 – midbody segment, dorsal view; 2 – gonopod, mesal view (**p** – gonopod plate; **s** – external process of gonopod); 3 – gonopod, lateral view; 4 – coxa 2.

***Julus kazakhus* Mikhaljova, sp. n.**

Figs 5–14

MATERIAL. Holotype – ♂ (IBSS), Kazakhstan, Vostochno-Kazakhstanskaya oblast, Katon-Karagaiskii District, 1202 m, 49°08'983''N, 86°00'605''E, forest-steppe, 20.VIII 2010, leg. K. Ulykpan. Paratypes: Kazakhstan, Vostochno-Kazakhstanskaya oblast, Katon-Karagaiskii District: 1 ♂, 3 ♀, 2 fragments (IBSS), together with holotype, 20.VIII 2010, leg. K. Ulykpan; 3 ♂ (one of them is possible intercalary male), 2 juveniles (one of them is subadult male) (IBSS), 1408 m, 49°09'404''N, 86°01'676''E, forest, 12.VIII 2010, leg. K. Ulykpan; 2 ♂, 3 ♀, 1 juvenile (subadult male), 1 fragment (PU), 1253 m, 49°09'113''N, 86°00'582''E, forest-steppe, 19.VIII 2010, leg. K. Ulykpan; 2 ♂, 5 ♀, 2 juveniles (subadult males) (IBSS), 1 ♂, 1 ♀ (ZMUM), 1470 m, 49°08'425''N, 85°57'724''E, forest-steppe, 22.VIII 2010, leg. K. Ulykpan.

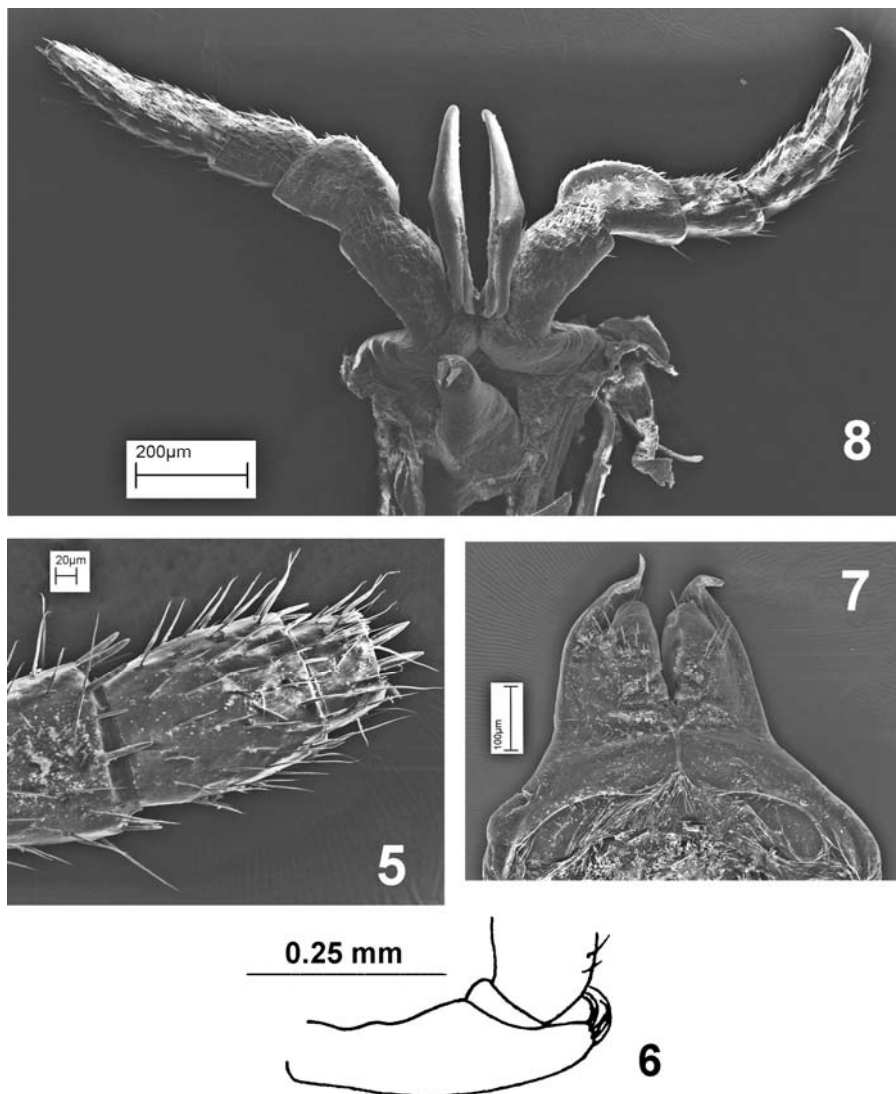
DESCRIPTION. MALE. Length 19–22 mm, vertical diameter 1.0–1.3 mm, with 47(–4), 48(–3), 49(–3) segments, excluding telson. Coloration dark brown with a reddish tinge. Ventral side lighter. Antennae dark brown, eye patches black. Legs dark brown with light brown or brown coxae and praefemurs.

Eye patches rounded, subtriangle, composed of 40–41 small ocelli. Epicranial setae 1+1, supralabral setae 2+2, 2+3, labral ones 7+7, 8+9, 9+9, 9+10. Genae unmodified. Antennae medium-sized, rather slender and clavate, in situ reaching to somite 5. Gnathochilarial normal; stipes with low knobs distally and basally; each lamella lingualis with 6 setae arranged longitudinally. Length ratios of antennomeres 2–7 as 3.3:2.5:2.5:3.1:1.7:1, width ratios as 1.1:1.2:1.2:1.3:1.3:1, respectively. Antennomeres 5 and 6 with incomplete distodorsal corolla of 6–7 sensory bacilli (Fig. 5).

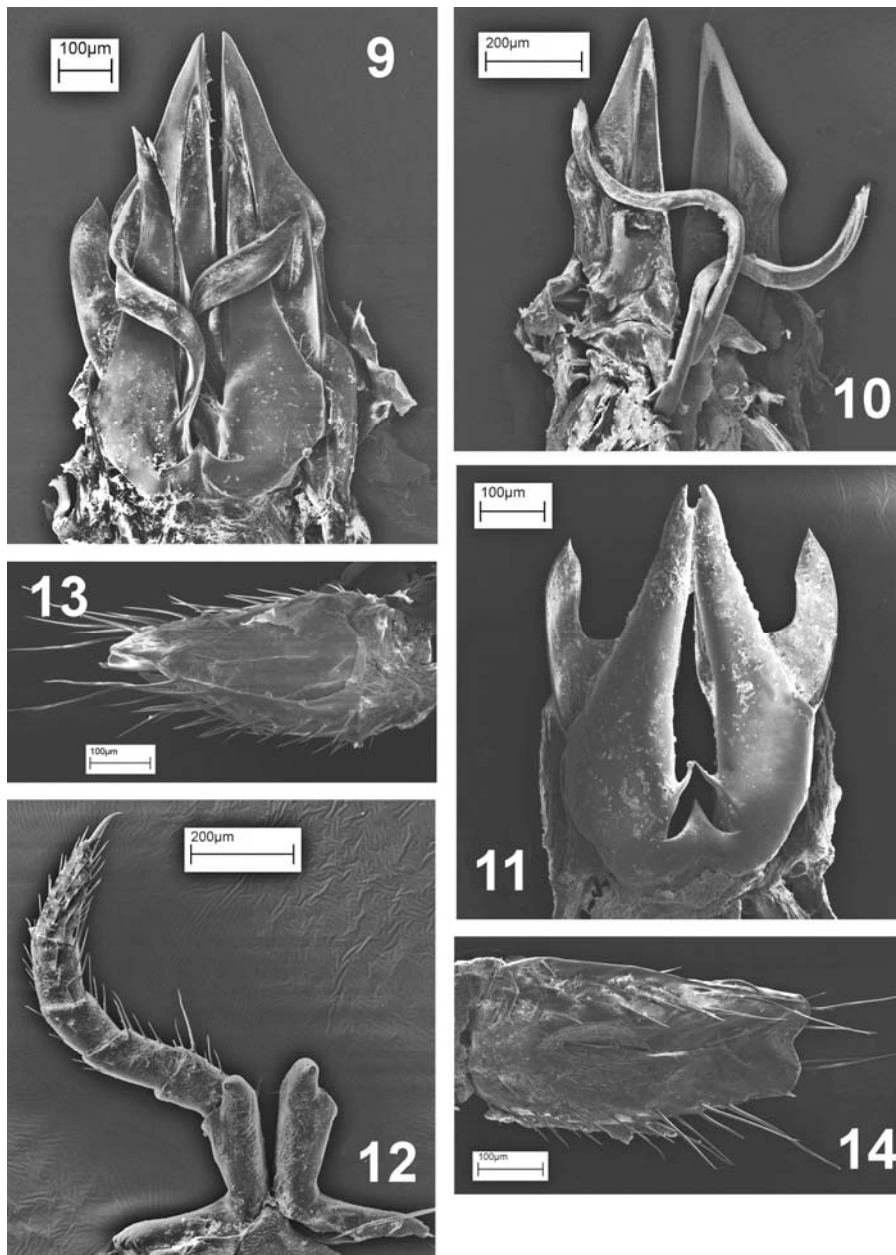
Body subcylindrical, slender, slightly compressed laterally. Somites 6 and 7 somewhat incrassate. Ventral edges of metazonites 7 somewhat deflected, forming a gonopodal opening. Ozopores small, lying behind suture between pro- and metazona without touching it. Metazona with striae practically reaching hind margin; 9–10 striae on metazonital surface between dorsal midline and ozopore. Caudal margins of metazona with minute, very sparse, barely visible setae, setae gradually growing denser, longer toward telson and head. Telson with sparse setae along caudal edge. Caudal projection of epiproct somewhat flattened dorsoventrally, subtriangular in dorsal view, covered with relatively long, dense setae along caudal edge and carrying a tiny claw-shaped process, the latter directed caudad. Anal valves densely setose. Anal scale subtriangular, setose only along caudal edge.

Legs relatively short and slender. Claws at base only with a long setoid filament ventrally, without additional small claws dorsally. Pregonopodal legs somewhat wider as compared with postgonopodal ones, which gradually become more slender toward the posterior end. Claws of pregonopodal legs at base with a long setoid filament ventrally, without additional small claws dorsally. Coxae 3–7 with process apically carrying long hair-like setae (Fig. 6); these coxal processes gradually becomes smaller and disappear posteriorly. Leg pair 1 (Fig. 7) subtriangular, with high coxites

pointed apically; coxite apex somewhat curved anteriorly. Rudiment of telopodite 1-segmented, with a group of setae laterally. Each coxa of leg pair 2 with large unciform outgrowth curved frontally, bearing long process caudally (Fig 8). Penes subconical.



Figs. 5–8. *Julus kazakhus* sp. n., male paratype. 5 – distal part of antenna; 6 – coxa 3; 7 – leg pair 1, front view; 8 – leg pair 2 and penes, caudal view.



Figs. 9–14. *Julus kazakhus* sp. n., male paratype (9–11), female paratype (12–14). 9 – gonopods, caudal view; 10 – gonopod promeres, caudal view; 11 – gonopod opisthomeres, caudal view; 12 – leg pair 2 (one of the legs omitted), front view; 13 – vulva, lateral view; 14 – vulva, ventral view.

Three pieces of gonopods (Figs 9–11) highly condensed. Promeres higher than opisthomeres, their flagella well-developed, ribbon-shaped, with somewhat distal broadening, tapering toward end, but not filiform. Promere with pointed apex, lateral prominence and caudal longitudinal crest, without telopodite remnant; mesomere subconical, rounded at apex. Opisthomere with thin mesal outgrowth at base, lateral part with strong, broad flat process pointed apically. Notch between solenomere and lateral process as deep as 1/3 opisthomere height.

FEMALE. Length 26–29 mm, vertical diameter 1.5–2.0 mm, with 51(–1), 51(–2) segments, excluding telson. Each coxa of leg pair 2 with small subconical process directed forward (Fig. 12). Vulvae as in Figs 13–14.

Juveniles. Length 8.0–18 mm, vertical diameter 0.6–1.0 mm, with 31(–5), 42(–5), 46(–3), excluding telson. Among them can be recognized subadult males with normal leg pair 1, leg pair 2 equipped with coxal processes curved apically (early stages with shorter processes), somite 7 somewhat incrassate.

In addition, among material is subadult male (only anterior portion) with 1.1 mm vertical diameter of body. It has underdeveloped gonopods, normal leg pair 1, long apically curved process on each coxa of leg pair 2, somewhat incrassate somite 7 and closed gonopodal opening; body coloration as in adult males. It is possible that this species is characterized by periodomorphosis, and this “subadult” male is intercalary.

DIAGNOSIS. The species differs from congeners from the Asian part of Russia mainly by the shape of gonopod promere with lateral prominence and pointed apex, single coxal processes of male leg pair 2 and configuration of gonopod opisthomere.

ETYMOLOGY. The specific epithet refers to Kazakhstan, the terra typica.

***Sibiriulus multinicus* Mikhaljova, 2001**

MATERIAL. Kazakhstan, Vostochno-Kazakhstanskaya oblast, Katon-Karagai-skii District: 2 ♂, 2 ♀, 1 fragment (PU), 1408 m, 49°09′404″N, 86°01′676″E, forest, 12.VIII 2010, leg. K. Ulykpan; 4 ♀, 2 juveniles (IBSS), 1299 m, 49°09′595″N, 86°01′635″E, forest-steppe, 13.VIII 2010, leg. K. Ulykpan; 1 ♂, 4 ♀, 1 juvenile (IBSS), 1202 m, 49°08′983″N, 85°59′876″E, forest-steppe, 17.VIII 2010, leg. K. Ulykpan; 4 ♂, 5 ♀, 2 juveniles (IBSS), 1202 m, 49°08′813″N, 86°00′012″E, 17.VIII 2010, leg. K. Ulykpan; 5 ♂, 4 ♀, 2 juveniles (IBSS), 1253 m, 49°09′113″N, 86°00′582″E, forest-steppe, 19.VIII 2010, leg. K. Ulykpan; 3 ♂, 6 ♀, 1 juvenile (IBSS), 1202 m, 49°08′983″N, 86°00′605″E, forest-steppe, 20.VIII 2010, leg. K. Ulykpan; 4 ♀, 1 juvenile (IBSS), 1390 m, 49°08′499″N, 85°57′670″E, *Larix* forest, 22.VIII 2010, leg. K. Ulykpan; 3 ♂, 4 ♀, 1 juvenile (PU), 1384 m, 49°08′556″N, 85°58′103″E, mountain steppe, 24.VIII 2010, leg. K. Ulykpan; 2 ♂, 6 ♀, 1 juvenile (IBSS), 1300 m, 49°08′650″N, 85°57′952″E, forest-steppe, 25.VIII 2010, leg. K. Ulykpan; 1 ♂ (IBSS), 1321 m, 49°08′502″N, 85°56′346″E, forest-steppe, floodplain meadow near mountain stream, 27.VIII 2010, leg. K. Ulykpan.

DISTRIBUTION. Russia: Siberia (Republic of Altai and the southeastern part of Altai Province), Kazakhstan (Vostochno-Kazakhstanskaya oblast).

REMARKS: This species is new for the fauna of Kazakhstan. It occurs in different habitats, including valley forests as well as forest-steppe, taiga forests and alpine meadows at 1200-2300 m.

***Megaphyllum sjaelandicum* (Meinert, 1868)**

MATERIAL. Kazakhstan, Vostochno-Kazakhstanskaya oblast, Katon-Karagaiskii District: 2 ♂, 11 ♀, 8 juveniles (IBSS), 1408 m, 49°09'404''N, 86°01'676''E, forest, 12.VIII 2010, leg. K. Ulykpan; 3 ♂, 5 ♀, 11 juveniles (PU), 1299 m, 49°09'595''N, 86°01'635''E, forest-steppe, 13.VIII 2010, leg. K. Ulykpan; 1 ♂, 3 ♀ (IBSS), 1184 m, 49°09'017''N, 85°59'855''E, steppe, 16.VIII 2010, leg. K. Ulykpan; 2 ♀ (IBSS), 1470 m, 49°08'425''N, 85°57'724''E, grass steppe, 16.VIII 2010, leg. K. Ulykpan; 2 ♂, 9 ♀, 6 juveniles (IBSS), 1202 m, 49°08'813''N, 86°00'012''E, 17.VIII 2010, leg. K. Ulykpan; 3 ♂, 5 ♀, 2 juveniles (IBSS), 1202 m, 49°08'983''N, 85°59'876''E, forest-steppe, 17.VIII 2010, leg. K. Ulykpan; 8 ♂, 12 ♀, 16 juveniles (IBSS), 1253 m, 49°09'113''N, 86°00'582''E, forest-steppe, 19.VIII 2010, leg. K. Ulykpan; 3 ♂, 1 ♀, 6 juveniles (IBSS), 1202 m, 49°08'983''N, 86°00'605''E, forest-steppe, 20.VIII 2010, leg. K. Ulykpan; 11 ♂, 8 ♀, 2 fragments (IBSS), 1270 m, 49°08'706''N, 85°57'708''E, steppe, 20.VIII 2010, leg. K. Ulykpan; 12 ♂, 13 ♀, 16 juveniles, 1 fragment (IBSS), 1390 m, 49°08'499''N, 85°57'670''E, *Larix* forest, 22.VIII 2010, leg. K. Ulykpan; 17 ♂, 26 ♀, 46 juveniles, 2 fragments (IBSS), 1470 m, 49°08'425''N, 85°57'724''E, forest-steppe, 22.VIII 2010, leg. K. Ulykpan; 6 ♂, 14 ♀, 35 juveniles (IBSS), 1384 m, 49°08'556''N, 85°58'103''E, mountain steppe, 24.VIII 2010, leg. K. Ulykpan; 5 ♂, 55 ♀, 42 juveniles, 2 fragments (IBSS), 1260 m, 49°08'712''N, 85°57'982''E, steppe, 24.VIII 2010, leg. K. Ulykpan; 3 ♂, 10 ♀, 24 juveniles (IBSS), 1300 m, 49°08'650''N, 85°57'952''E, forest-steppe, 25.VIII 2010, leg. K. Ulykpan; 7 ♂, 15 ♀, 5 juveniles (PU), floodplain meadow near mountain stream, 1321 m, 49°08'502''N, 85°56'346''E, forest-steppe, 27.VIII 2010, leg. K. Ulykpan; 4 ♂, 6 ♀, 3 juveniles (IBSS), 1438 m, 49°08'340''N, 85°55'965''E, *Larix* forest, 27.VIII 2010, leg. K. Ulykpan; 2 ♂, 13 ♀, 19 juveniles (IBSS), floodplain meadow near mountain stream, 1321 m, 49°08'502''N, 85°56'346''E, forest-steppe, 27.VIII 2011, leg. K. Ulykpan and U. Burkitbaeva.

DISTRIBUTION. Central and Eastern Europe, Ural, Russian and Kazakhstan Altai.

REMARKS. This species is distributed in Central and Eastern Europe, Urals and has been recorded in Republic of Altai by one male and one female (Mikhaljova *et al.*, 2007). Specimens from Republic of Altai differ from ones from European countries and the Urals by the presence of a small projection on mesal side of the gonopod promere, somewhat longer gonopod flagella and somewhat more obtuse

mesomere processes of gonopods in male. Examined specimens from Kazakhstan Altai are morphologically similar to the specimens from Republic of Altai, including structure of gonopod promere. However the length of their gonopod flagella appears to be variable. In addition, a restudy of the male from Republic of Altai, which is deposited in the collection of IBSS, shows that the apex of one of the two gonopod mesomere processes is obtuse. Apex of the second gonopod mesomere process is pointed like one in males from European countries and the Urals. Thus length of gonopod flagella and the degree of obtuseness of gonopod mesomere process can not be the distinguishing characters. Taking into account the morphological similarity and geographical proximity of the localities, specimens from Republic of Altai and Kazakhstan Altai belong to the same form which can be considered as variety of the species. The form differs only by the presence a small projection on mesal side of the gonopod promere in male.

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SHORT COMMUNICATION

http://urn:lsid:zoobank.org/pub:57343F5D-84E5-476A-9D89-C78C0C9FAA83

M. Mirab-balou^{1,2*}, X. X. Chen². TWO NEW RECORDS OF SERICOTHIRIPINAE (THYSANOPTERA: THIRIPIDAE) FOR IRAN. – Far Eastern Entomologist. 2013. N 260: 12-16.

Summary. The genus *Hydatothrips* Karny and two species, *H. abdominalis* (Kurosawa) and *Neohydatothrips gracilipes* (Hood) (Thripidae: Sericothripinae), are newly recorded for Iran.

Key words: Thysanoptera, Sericothripinae, *Hydatothrips*, *Neohydatothrips*, fauna, new records, Iran.

М. М. Мираб-балу^{1,2*}, С. С. Чень². Два новых для Ирана трипса подсемейства Sericothripinae (Thysanoptera: Thripidae) // Дальневосточный энтомолог. 2013. N 260. С. 12-16.

Резюме. Впервые для фауны Ирана указаны род *Hydatothrips* Карну и два вида: *H. abdominalis* (Кurosawa) и *Neohydatothrips gracilipes* (Hood) (Thripidae: Sericothripinae).

INTRODUCTION

The Sericothripinae (Thysanoptera: Terebrantia) is one of the four subfamilies recognized in the family Thripidae (Bhatti, 1979). This subfamily is a group of about 150 flower- and leaf-feeding species whose larvae have fringed or trumpet-shaped major setae (Kudô, 1998). They are remarkable amongst the Thripidae for their complex body sculpture and striking color patterns (Mound & Tree, 2009). Of the three recognized genera in this subfamily, *Sericothrips* Haliday comprises eight species (Mirab-balou *et al.*, 2011a, 2013a), and the other two genera are widespread around the world in tropical and subtropical countries, *Hydatothrips* with 40 species, and *Neohydatothrips* with 100 species (Mound, 2013; Mirab-balou *et al.*, 2013b).

The members of this subfamily have legs covered with annulated microtrichial rows; pronotum has a large blotch area medially near the posterior margin; and fore wing first vein with setal row complete, but second vein usually without setae (sometimes with one or two setae near wing apex apparently displaced from first vein) (Kudô, 1991; Mound & Tree, 2009; Mirab-balou *et al.*, 2011a).

Up to now, two species of the genus *Neohydatothrips* has been recorded from Iran (Bhatti *et al.*, 2009; Mirab-balou, 2011). In this study, the genus *Hydatothrips* Karny is newly recorded for fauna of Iran; and *Neohydatothrips gracilipes* is recorded from Iran for the first time.

MATERIALS AND METHODS

The specimens were collected from different sites in Iran, and prepared and mounted on slide following Mirab-balou and Chen (2010). All descriptions, measurements and photos were made with a Leica DM IRB microscope, with a Leica Image 1000 system. The specimens are deposited in the Institute of Insect Sciences, Zhejiang University, Hangzhou, China (ZJUH).

ORDER THYSANOPTERA

Family Thripidae

Subfamily Sericothripinae

Key to genera of Iranian Sericothripinae

1. Metasternum forming two arms with a median V-shaped apodeme *Hydatothrips*
– Metasternum connected in the middle with a T-shaped or Y-shaped apodeme
..... *Neohydatothrips*

Genus *Hydatothrips* Karny, 1913

Hydatothrips Karny, 1913: 281.

DIAGNOSIS. Head much wider than long. Antennae 7- or 8-segmented, with forked sense cones on antennal segments III and IV. Pronotum with a blotch; head and pronotum covered with transverse or reticulated striae; metasternum divided into 2 plates by a V-shaped apodeme; wings usually fully developed in both sexes, fore wing first vein setal row complete, second vein with 0–2 distal setae. Abdominal tergites I–VII laterally with dense microtrichia; tergites II–VII with posterior marginal comb, longer laterally, short or lacking medially; posterior marginal comb on tergite VIII complete. Median paired setae on tergites II–IV close to each other, more widely separated on tergites V–VIII.

COMPOSITION. This genus includes 40 species in the world (Mound, 2013), and here is newly recorded for Iran.

***Hydatothrips abdominalis* (Kurosawa, 1973)**

Sericothrips abdominalis Kurosawa, 1973: 115.

MATERIAL EXAMINED. **IRAN:** Kordestan province: Kordestan, 1 ♀, Marivan, from grasses (Poaceae), 12.VII 2009, M. Mirab-balou (ZJUH).

DISTRIBUTION. Iran: Kordestan province; Japan, Korea, China, India (Mirab-balou *et al.*, 2011a,b).

NOTES. This species was fully described by Mirab-balou *et al.* (2011a: 60), and here is newly recorded for the fauna of Iran.

Genus *Neohydatothrips* John, 1929

Neohydatothrips John, 1929: 33.

DIAGNOSIS. Head wider than long; postoccipital apodeme situated variously, marking off a wide, crescentic postocciput. Antennae 8-segmented, with forked sense cones on each of segments III and IV; segment II without dorsal seta basad campaniform sensillum; major sense cones on segments V to VII inserted on elongate bases. Mouth-cone moderately long to short conical. Pronotum with well defined blotch area. Mesosternal spinula present. Metasternum with transverse line behind anterior margin, line medially with or without T-shaped apodeme. Metascutum and scutellum partially or complete divided. Abdominal tergites II–VII with median setae not similarly placed and not of similar size, on II–IV closer together, with length increasing gradually from anterior to posterior tergites. Abdominal sternites III–VII usually with 3 pairs of setae, inserted marginally, those on VII of female usually positioned anterior of posterior margin.

NOTES. *Neohydatothrips* is morphologically similar to *Hydatothrips*, but differs by the metasternum not divided medially or divided only in the front part with a Y-shaped apodeme (Wang, 2007). Three species of *Neohydatothrips* are here recorded from Iran: *N. gracilipes*, *N. gracilicornis* and *N. tadzhicus*, of which *N. gracilipes* is newly recorded for Iran.

Key to Iranian species of *Neohydatothrips*

1. Posterior margins of abdominal tergites with craspedum *N. gracilicornis*
– Posterior margins of abdominal tergites without craspedum 2
2. Pronotal blotch weakly sclerotized *N. gracilipes*
– Pronotal blotch very dark and sclerotized *N. tadzhicus*

Neohydatothrips gracilipes (Hood, 1924)

Sericothrips gracilipes Hood, 1924: 149.

MATERIAL EXAMINED. **IRAN:** Alborz province: Karaj, 1 ♀, from *Glycyrrhiza glabra* L. (Fabaceae), 29.V 2009, M. Mirab-balou (ZJUH).

DIAGNOSIS. Female macroptera. Body generally yellow, pronotal blotch with brown markings; abdominal tergites II–VII with dark brown antecostal ridge, also brown areas laterally on these segments behind antecostal ridges; antennal segments grayish brown, segments III and basal halves of IV–V lighter; legs grayish yellow; forewings grayish yellow with a sub-basal pale band. Head short, cheeks about same length as eyes; ocellar setae III situated behind front ocellus, inside ocellar triangle. Antennae 8-segmented, segments III and IV with forked sense cones; segment VII about half the length of VIII. Pronotal blotch weakly sclerotized without a clear margin, posteroangular pair of setae on blotch well developed, about same length as blotch. Mesonotum and metanotum with dense transverse or longitudinal striae. Anterior margin of metasternum straight. Fore wing first vein setal row complete, second vein without distal setae. Abdominal tergites II–VII with posteromarginal combs present laterally but not medially; tergites VII and VIII with long and complete posterior comb. Abdominal sternites I–VII with complete posteromarginal comb, without discal setae.

MALE. Unknown (Wang, 2007).

MEASUREMENTS OF FEMALE IN MICRON; LENGTH (WIDTH). Body 1180(390). Head 95(175). Pronotum 110(190), posteroangular setae 70. Fore wing 800(80), hind wing 710(65). Antennal segments I–VIII as follows: 23(28), 37(32), 63(23), 62(21), 45(23), 54(20), 20(7), and 12(9).

DISTRIBUTION. Iran: Alborz province; Thailand, India, Australia, Mexico, Costa Rica, Trinidad, Jamaica, Taiwan (Wang, 2007; Mirab-balou *et al.*, 2011b).

NOTES. This species was identified based on the description by Wang (2007), and is here newly recorded for Iran.

Neohydatothrips gracilicornis (Williams, 1916)

Sericothrips gracilicornis Williams, 1916: 222.

MATERIAL EXAMINED. **IRAN:** Hamadan province: Hamadan, 1 ♀, Medical College, from *Goebelia alopecuroides* (L.) Bunge ex Boiss (Fabaceae), 15.V 2008, M. Mirab-balou (ZJUH); Zanjan province: Zanjan, 2 ♀, 2 ♂, Yengijeh, from alfalfa, *Medicago sativa* L. (Fabaceae), 25.VI 2009, M. Mirab-balou (ZJUH).

DISTRIBUTION. Iran: Tehran (Mortazawiha & Dern, 1977), Golestan (Alavi *et al.*, 2007), Khorasan-e-Shomali (Alavi, 2004), Hamadan and Zanjan; China, Europe, Morocco, Turkey, Israel, Japan (Mirab-balou *et al.*, 2011b).

NOTES. This species was reported from Iran by Mortazawiha & Dern (1977) from Tehran province; and here is newly recorded for Hamadan and Zanjan provinces.

***Neohydatothrips tadhicus* (Pelikán, 1964)**

Sericothrips tadhicus Pelikán, 1964: 228.

DISTRIBUTION. Iran: Khorasan province (Alavi, 2004); China and Tajikistan (Mirab-balou *et al.*, 2011b).

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