

## New additions to the aphid fauna (Homoptera: Aphidinea) of Western Siberia

### Новые дополнения к фауне тлей (Homoptera: Aphidinea) Западной Сибири

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Aphids of 23 species and three subspecies are recorded for the first time in Western Siberia; ten species and two subspecies, namely *Pineus strobi* (Hartig, 1839), *Chaitophorus salijaponicus szelegiewiczi* Pintera, 1987, *Chaitophorus populeti sensoriatus* Mimeur, 1934, *Aphis rostellum* (Zhang, Chen, Zhong et Li, 1999), *Aphis talgarica* Kadyrbekov, 2001, *Protaphis elatior* (Nevsky, 1928), *Hydaphias molluginis* Börner, 1939, *Ovatus crataegarius* (Walker, 1850), *Cryptomyzus (Ampullosiphon) stachydis* (Heikinheimo, 1955), *Uroleucon (Uroleucon) pseudobscurum* (Hille Ris Lambers, 1967), *Uroleucon (Lambersius) dubium* Holman, 1975 and *Uroleucon (Uromelan) campanulae* (Kaltenbach, 1843), are recorded for the first time from the territory of Russia.

Двадцать три вида и три подвида тлей впервые отмечаются на территории Западной Сибири, из них десять видов и два подвида, *Pineus strobi* (Hartig, 1839), *Chaitophorus salijaponicus szelegiewiczi* Pintera, 1987, *Chaitophorus populeti sensoriatus* Mimeur, 1934, *Aphis rostellum* (Zhang, Chen, Zhong et Li, 1999), *Aphis talgarica* Kadyrbekov, 2001, *Protaphis elatior* (Nevsky, 1928), *Hydaphias molluginis* Börner, 1939, *Ovatus crataegarius* (Walker, 1850), *Cryptomyzus (Ampullosiphon) stachydis* (Heikinheimo, 1955), *Uroleucon (Uroleucon) pseudobscurum* (Hille Ris Lambers, 1967), *Uroleucon (Lambersius) dubium* Holman, 1975 и *Uroleucon (Uromelan) campanulae* (Kaltenbach, 1843), впервые отмечаются в России.

**Key words:** aphids, fauna, Western Siberia, Homoptera, Aphidinea

**Ключевые слова:** тли, фауна, Западная Сибирь, Homoptera, Aphidinea

## INTRODUCTION

The scientific study of aphid fauna of Western Siberia was started about 100 years ago from the papers of A.K. Mordvilko (Mordvilko, 1914, 1919, 1929). These papers included mainly scattered notes on different species new for the territory explored. First faunistic generalizations were published only at the beginning of 1970s. Thus, the paper of L.N. Dolgova (1972) discussed the aphid fauna of Barnaul and the monograph of O.I. Ivanovskaya (1977) summarized all data on aphid fauna of West-

ern Siberia known by that time. However, the book included data for 341 aphid species only, that is undoubtedly a small part of aphid fauna of Western Siberia. During 1980s – 1990s active investigations of aphid fauna in the territory of Western Siberia were ceased and some new publications appeared in the beginning of twenty-first century only. In particular, the authors of the present paper reported new records of aphid species for Western Siberia and Russia (Stekolshchikov et al., 2007, 2008). Additionally, last year Novgorodova (2012) presented the list of 83 aphid species of North-

Eastern Altai and also the data concerning trophobiotic interactions with ants for 49 of them. The new data on the aphid fauna of Western Siberia presented here were obtained during fieldwork in the Novosibirsk Region and Altai Republic during 2004 and 2006–2011. All the materials are deposited at the Institute of Systematics and Ecology of Animals, Siberian Branch of the Russian Academy of Sciences (Novosibirsk, Russia). Twenty three species and three subspecies are recorded below as new to the discussed territory; ten species and two subspecies (marked \*) are recorded for the first time from the territory of Russia.

**Abbreviations.** *Aphid morphs*: al. – alate viviparous female, apt. – apterous viviparous female.

## LIST OF SPECIES

Order **HOMOPTERA**

Infraorder **APHIDINEA**

Superfamily **ADELGOIDEA**

Family **ADELGIDAE**

\**Pineus strobi* (Hartig, 1839)

*Specimens examined.* **Altai Republic, Shebalino Distr.**, Ilyinka Vill., 1109 m above sea level, 51°27'N, 85°07'E, 19 July 2011, *Pinus sibirica* Du Tour, on needles, apt., T.A. Novgorodova leg.

Superfamily **APHIDOIDEA**

Family **LACHNIDAE**

*Cinara pilosa* (Zetterstedt, 1938)

*Specimens examined.* **Altai Terr., Altayskoe Distr.**, nearby Altayskoe Vill., 363 m above sea level, 51°37'N, 85°44'E, 15 July 2011, *Pinus sylvestris* L., on stem, apt., T.A. Novgorodova leg.

Family **CHAITOPHORIDAE**

\**Chaitophorus populeti sensoriatus*

Mimeur, 1934

*Specimens examined.* **Novosibirsk Prov., Karasuk Distr.**, nearby Troitskoe Vill., 3 July

2007, *Populus tremula* L., on upper side and petioles of leaves, apt., T.A. Novgorodova leg.

*Chaitophorus saliaapterus saliaapterus*

Shinji, 1924

*Specimens examined.* **Altai Republic, Shebalino Distr.**, nearby Mukhor-Cherga Vill., 1139 m above sea level, 51°27'N, 85°19'E, 22 July 2011, *Salix* sp., on lower side of leaves, apt., T.A. Novgorodova leg.

\**Chaitophorus salijaponicus*

*szelegiewiczi* Pintera, 1987

*Specimens examined.* **Altai Republic, Shebalino Distr.**, Cherga Vill., 493 m above sea level, 51°34'N, 85°34'E, 19 July 2011, *Salix* sp., on stem, apt., T.A. Novgorodova leg.

Family **APHIDIDAE**

Subfamily **APHIDINAE**

Tribe **APHIDINI**

Subtribe **APHIDINA**

*Aphis cacaliasteris*

Hille Ris Lambers, 1947

*Specimens examined.* **Altai Republic, Shebalino Distr.**, nearby Mukhor-Cherga Vill., 1139 m above sea level, 51°27'N, 85°19'E, 22 July 2011, *Senecio* sp., on stem and lower side of leaves, apt. and al., T.A. Novgorodova leg.

*Aphis mutini* Pashtshenko, 1994

*Specimens examined.* **Altai Republic, Shebalino Distr.**, nearby Verkhnyaya Kukuya Vill., 921 m above sea level, 51°27'N, 85°17'E, 17 July 2011, *Spiraea* sp., on young shoots, apt. and al., T.A. Novgorodova leg.

Individuals from Altai are exactly identified as *Aphis mutini* in spite of some minor differences from the type material (the hairs on 3rd antennal segment of apterous viviparous females from Altai are slightly shorter and processus terminalis is longer than hairs and processus terminalis of specimens from the type material). However, the description

of *A. mutini* was made using only 10 apterous viviparous females from a single sample. So, these data do not reflect real variability of the separate characters. The noted differences of the Altai material from the type one are insignificant and lie within the range of common variability of these characters.

***Aphis neothalictri*** Pashtshenko, 1994

*Specimens examined.* **Altai Republic, Shebalino Distr.:** nearby Cherga Vill., 548 m above sea level, 51°33'N, 85°29'E, 16 July 2011, *Thalictrum* sp., on stem, apt., T.A. Novgorodova leg.; Ilyinka Vill., 1308 m above sea level, 51°27'N, 85°07'E, 19 July 2011, *Thalictrum* sp., on stem and inflorescences, apt. and al., T.A. Novgorodova leg.; *Turochak Distr.*, nearby Verkh-Biysk Vill., pine-birch forest, 19 June 2004, *Thalictrum minus* L., on inflorescences, apt. and al., T.A. Novgorodova leg. **Altai Terr., Soloton Distr.**, nearby Saydyp Vill., aspen-birch forest, 18 June 2004, *Thalictrum* sp., on inflorescences, apt. and al., T.A. Novgorodova leg. **Novosibirsk Prov., Novosibirsk Distr.**, Novosibirsk, Zaeltsovskiy Park, 17 Aug. 2006, *Thalictrum minus* L., on stems and inflorescences, apt., A.V. Gavrilyuk leg.; *Toguchin Distr.*, nearby Kalganovo Vill., 29 July 2010, floodplain-island natural complex, *Thalictrum simplex* L., on stems and inflorescences, apt., O.A. Belozertseva leg.

**\**Aphis rostellum***

(Zhang, Chen, Zhong et Li, 1999)

*Specimens examined.* **Altai Republic, Mayma Distr.**, Rybalka Vill.: 28 July 2010, *Malva* sp., on lower side of slightly twisted and swollen leaves, apt., A.V. Stekolshchikov leg.; 22 July 2011, *Lavatera* sp., on lower side of twisted leaves, apt., T.A. Novgorodova leg.

***Aphis septentrionalis*** Pashtshenko, 1994

*Specimens examined.* **Altai Republic, Shebalino Distr.**, nearby Verkhnyaya Kukuya Vill., 997 m above sea level, 51°27'N,

85°15'E, 17 July 2011, *Crepis* sp., on inflorescences, apt., T.A. Novgorodova leg.

***Aphis spiraeicola*** Patch, 1914

*Specimens examined.* **Altai Republic: Shebalino Distr.**, nearby Cherga Vill., 516 m above sea level, floodplain of the Sema River, 51°31'N, 85°34'E, 16 July 2011, *Spiraea* sp., on apices of shoots, apt. and al., T.A. Novgorodova leg.; *Turochak Distr.*, Artybash Vill., 6 July 2010, *Spiraea chamaedryfolia* L., on apices of shoots and lower side of leaves, apt. and al., A.V. Stekolshchikov leg. **Novosibirsk Prov., Karasuk Distr.**, nearby Troitskoe Vill., 1 June 2006, *Plantago* sp., on basal part of plant, apt., T.A. Novgorodova leg.

**\**Aphis talgarica*** Kadyrbekov, 2001

*Specimens examined.* **Altai Republic: Shebalino Distr.**, Verkhnyaya Kukuya Vill.: 921 m above sea level, 51°27'N, 85°17'E, 17 July 2011, *Bupleurum aureum* Fisch., on lower side of leaves near stem, apt., A.V. Gavrilyuk leg.; 1159 m above sea level, 51°27'N, 85°13'E, 18 July 2011, *Bupleurum aureum* Fisch., on inflorescences, apt., A.V. Gavrilyuk leg.; *Turochak Distr.*, Artybash Vill., 16 July 2010, *Bupleurum aureum* Fisch., on the rays of umbel, apt. and al., A.V. Stekolshchikov leg. **Novosibirsk Prov., Novosibirsk Distr.:** nearby Zheleznodorozhny Vill., 55°00'N, 83°18'E, 7 July 2011, *Bupleurum aureum* Fisch., on axil of leaf, apt. and al., T.A. Novgorodova leg.; same locality, 15 June 2010, *Bupleurum aureum* Fisch., on stem and inflorescences, apt. and al., T.A. Novgorodova leg.; same locality, 25 June 2010, *Bupleurum aureum* Fisch., on stem and inflorescences apt. and al., A.V. Gavrilyuk leg.; Zherebtsovo Vill., 9 Sept. 2006, *Bupleurum aureum* Fisch., on stem and inflorescences, apt., A.V. Gavrilyuk leg.

**\**Protaphis elatior*** (Nevsky, 1928)

*Specimens examined.* **Novosibirsk Prov., Karasuk Distr.**, nearby Karasuk Town, 29

July 2009, *Artemisia* sp., on roots, apt., A.V. Gavrilyuk leg.

Tribe **MACROSIPHINI**

Subtribe **LIOSOMAPHIDINA**

***Cavariella angelicae*** (Matsumura, 1918)

*Specimens examined.* **Altai Republic:** *Mayma Distr.*, Rybalka Vill., 27 July 2010, *Heracleum sibiricum* L., on the rays of umbel, apt. and al., A.V. Stekolshchikov leg.; *Shebalino Distr.*, nearby Cherga Vill., 548 m above sea level, 51°33'N 85°29'E, 16 July 2011, *Anthriscus sylvestris* (L.) Hoffm., on inflorescences, apt. and al., T.A. Novgorodova leg.; almost same locality, 516 m above sea level, floodplain of the Sema River, 51°31'N, 85°34'E, 16 July 2011, *Angelica* sp., on stem and inflorescences, apt. and al., T.A. Novgorodova leg.; almost same locality, 548 m above sea level, 51°33'N, 85°29'E, 16 July 2011, *Heracleum* sp., on stem, apt., T.A. Novgorodova leg.; *same district*, Ilyinka Vill., 1109 m above sea level, 51°27'N, 85°07'E, 19 July 2011, *Heracleum* sp., on inflorescences, apt. and al., T.A. Novgorodova leg.; *same district*, nearby Mukhor-Cherga Vill., 1548 m above sea level, 51°20'N, 85°19'E, 22 July 2011, *Heracleum* sp., on inflorescences, apt. and al., T.A. Novgorodova leg.; *same district*, nearby Verkhnyaya Kukuya Vill., 980 m above sea level, 51°27'N, 85°15'E, 17 July 2011, *Heracleum* sp., on inflorescences and on axil of leaf, al., T.A. Novgorodova leg.; almost same locality, 997 m above sea level, 51°27'N, 85°15'E, 17 July 2011, *Heracleum* sp., on inflorescences, al., T.A. Novgorodova leg.; almost same locality, 1159 m above sea level, 51°27'N, 85°13'E, 18 July 2011, *Heracleum* sp., on inflorescences and stem, apt. and al., T.A. Novgorodova and A.V. Gavrilyuk leg. **Altai Terr.**, *Altayskoe Distr.*, nearby Basargino Vill., 333 m above sea level, 51°56'N, 85°41'E, 14 July 2011, *Heracleum* sp., on inflorescences, apt. and al., T.A. Novgorodova leg.

**\**Hydaphias molluginis*** Börner, 1939

*Specimens examined.* **Altai Terr.**, *Altayskoe Distr.*, nearby Altayskoe Vill., 705 m above sea level, 51°44'N, 85°25'E, 14 July 2011, *Gallium verum* L., on stem, apt. and al., T.A. Novgorodova leg.

Subtribe **MYZINA**

***Myzus padellus***

Hille Ris Lambers et Rogerson, 1946

*Specimens examined.* **Altai Republic,** *Shebalino Distr.*, nearby Cherga Vill., 516 m above sea level, floodplain of the Sema River, 51°31'N, 85°34'E, 16 July 2011, *Rhinanthus* sp., on inflorescences, apt., T.A. Novgorodova leg.

**\**Ovatus crataegarius*** (Walker, 1850)

*Specimens examined.* **Altai Republic,** *Shebalino Distr.*, Cherga Vill., 493 m above sea level, 51°34'N, 85°34'E, 9 July 2011, *Mentha* sp., on lower side of leaves, apt., T.A. Novgorodova leg. **Novosibirsk Prov.,** *Novosibirsk Distr.*, nearby Zheleznodorozhny Vill., 55°00'N, 83°18'E, 24 Aug. 2011, *Crataegus* sp., on stem, apt. and al., T.A. Novgorodova leg.

***Tubaphis ranunculina*** (Walker, 1852)

*Specimens examined.* **Altai Republic,** *Shebalino Distr.*, nearby Cherga Vill., 500 m above sea level, 51°35'N, 85°35'E, 20 July 2011, *Ranunculus polyanthemos* L., on lower side of leaves, apt., T.A. Novgorodova leg.

Subtribe **MACROSIPHINA**

***Cryptomyzus galeopsidis***

(Kaltenbach, 1843)

*Specimens examined.* **Altai Republic:** *Shebalino Distr.*, nearby Verkhnyaya Kukuya Vill., 1159 m above sea level, 51°27'N, 85°13'E, 18 July 2011, *Lamium album* L., on lower side of leaves along viens, apt., T.A. Novgorodova leg.; *Turochak Distr.*, Ar-



tybash Vill., 11 Aug. 2004, *Ribes rubrum* L., on lower side of deformed leaves, apt., T.A. Novgorodova leg.

**\**Cryptomyzus (Ampullosiphon) stachydis*** (Heikinheimo, 1955)

*Specimens examined.* **Altai Republic:** *Shebalino Distr.*, nearby Verkhnyaya Kukuya Vill., 1159 m above sea level, 51°27'N, 85°13'E, 18 July 2011, *Lamium album* L., on lower side of leaves along viens, apt., T.A. Novgorodova leg.; same locality and date, *Ribes rubrum* L., on lower side of red leaves, apt., T.A. Novgorodova leg.; *Turochak Distr.*, Artybash Vill., 5 July 2010, *Lamium album* L., on lower side of leaves, al., A.V. Stekolshchikov leg.

***Impatiens balsamines*** (Kaltenbach, 1862)

*Specimens examined.* **Altai Terr., Altayskoe Distr.**, nearby Altayskoe Vill., 407 m above sea level, 51°52'N, 85°16'E, 13 July 2011, *Impatiens noli-tangere* L., on inflorescences and lower side of leaves along viens, apt., T.A. Novgorodova leg. **Altai Republic, Turochak Distr.**, Artybash Vill., 7 July 2010, *Impatiens noli-tangere* L., on lower side of leaves, apt. and al., A.V. Stekolshchikov leg.

***Macrosiphoniella (Phalangomyzus) oblonga*** (Mordvilko, 1901)

*Specimens examined.* **Altai Terr., Altayskoe Distr.**, Sarasa Vill., 355 m above sea level, 51°52'N, 85°21'E, 13 July 2011, *Artemisia* sp., on stem, apt., T.A. Novgorodova leg.

***Macrosiphum euphorbiae*** (Thomas, 1878)

*Specimens examined.* **Novosibirsk Prov., Novosibirsk Distr.:** Novosibirsk, 22 May 2007, *Rosa* sp., on upper and lower side of leaves, apt., A.V. Gavrilyuk leg.; same locality, 28 May 2007, *Rosa* sp., on leaves, apt., A.V. Gavrilyuk leg.; Akademgorodok, 8

June 2007, *Potentilla norvegica* L., on leaves, apt., A.V. Gavrilyuk leg.; same locality, 30 June 2007, *Potentilla norvegica* L., on leaves, apt., A.V. Gavrilyuk leg.

**\**Uroleucon (Uroleucon) pseudobscurum*** (Hille Ris Lambers, 1967)

*Specimens examined.* **Novosibirsk Prov., Karasuk Distr.**, nearby Karasuk Town, 8 June 2008, *Hieracium umbellatum* L., on young shoots, apt., A.V. Gavrilyuk leg.

**\**Uroleucon (Lambersius) dubium*** Holman, 1975

*Specimens examined.* **Altai Republic, Shebalino Distr.**, Ilyinka Vill., 1308 m above sea level, 51°27'N, 85°07'E, 19 July 2011, *Artemisia* sp., on stem, apt., T.A. Novgorodova leg.

**\**Uroleucon (Uromelan) campanulae*** (Kaltenbach, 1843)

*Specimens examined.* **Altai Republic, Shebalino Distr.**, Verkhnyaya Kukuya Vill., 921 m above sea level, 51°27'N, 85°17'E, 17 July 2011, *Campanula* sp., on lower side of leaves and inflorescences, apt., T.A. Novgorodova leg.

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**REFERENCES**

- Dolgova L.N.** 1972. Fauna of aphids of the ornamental plants in the town of Barnaul. *Trudy Biologicheskogo Instituta SO AN SSSR*, **11**: Fauna i ekologiya chlenistonogikh Sibiri, 25–34. (In Russian).
- Ivanovskaja O.I.** 1977. *Tli Zapadnoy Sibiri* [Aphids of the Western Siberia.] Part 1 and 2. Novosibirsk: Nauka. 272 and 328 p. (In Russian).

- Mordvilko A.K.** 1914. *Fauna Rossii i so-predel'nykh stran. Nasekomyya Poluzhestkokrylyya (Insecta Hemiptera)* [Fauna of Russia and Adjacent Countries. Insecta Hemiptera.] Vol. 1, part 1. Petrograd: Imperatorskaya Akademiya Nauk. 1–236 + 9 pp. (In Russian).
- Mordvilko A.K.** 1919. *Fauna Rossii i so-predel'nykh stran. Nasekomyya Poluzhestkokrylyya (Insecta Hemiptera)* [Fauna of Russia and Adjacent Countries. Insecta Hemiptera.] Vol. 1, part 2. Petrograd: Rossiyskaya Akademiya Nauk. 237–508 pp. (In Russian).
- Mordvilko A.K.** 1929. Food plant catalogue of the Aphididae of USSR. *Trudy po prikladnoy entomologii*, **14**(1): 1–100. (In Russian).
- Novgorodova T.A.** 2012. Trophobiotic relationships of ants (Hymenoptera, Formicidae) with aphids (Homoptera, Aphidoidea) in North-Eastern Altai. *Trudy Russkogo entomologicheskogo obshchestva [Proceedings of the Russian Entomological Society]*, **83**(1): 45–57. (In Russian).
- Stekolshchikov A.V., Gavrilyuk A.V., Novgorodova T.A.** 2007. First records of some aphid species (Homoptera: Aphidoidea) in West Siberia. *Zoosystematica Rossica*, **16**(2): 168.
- Stekolshchikov A.V., Gavrilyuk A.V., Novgorodova T.A.** 2008. Additions to the aphid fauna of West Siberia (Homoptera: Aphidinea). *Zoosystematica Rossica*, **17**(1): 57–59.

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