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New records of introduced garden species of Cicadinea (Homoptera: Membracidae) and Chrysomelidae (Coleoptera) from the Khabarovsk suburbs in the Russian Far East

Новые находки огородных интродуцентов из цикадовых (Homoptera: Cicadinea, Membracidae) и жуков-листоедов (Coleoptera: Chrysomelidae) в окрестностях города Хабаровск Дальнего Востока России

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Ключевые слова: *Stioctocephala bisonia, Leptinotarsa decemlineata*, *Phyllotreta armoraciae,* Хабаровский край, новые находки.

Abstract. Three introduced species, the Buffalo Treehopper *Stictocephala bisonia* Kopp et Yonke, 1977 (Homoptera, Membracidae) and two leaf-beetle species (Chrysomelidae) were found in gardens in the vicinity of Khabarovsk in the Russian Far East. The Colorado Potato Beetle *Leptinotarsa decemlineata* (Say, 1824) was recorded in Kiinsk settlement in 2018, while the Horseradish Flea Beetle *Phyllotreta armoraciae* (Koch, 1803) and the buffalo treehopper *Stictocephala bisonia* Kopp et Yonke were observed in Il'inka during 2023–2024, and in Bychikha in 2024. All three species are recorded from the Amur Basin for the first time.

Резюме. Приводятся находки трёх видов-интродуцентов: бизоновой горбатки *Stictocephala bisonia* Kopp et Yonke из садового участка в посёлке Ильинка (Ильинка), популяция которой появилась в 2023 году, а также из посёлка Бычиха в 2024 году, и двух жуков-листоедов (Chrysomelidae) из окрестностей Хабаровска, найденных на огородах: колорадского жука *Leptinotarsa decemlineata* (Say, 1824) в посёлке Киинск в 2018 году, и хре́новой блошки *Phyllotreta armoraciae* (Koch, 1803) в посёлке Ильинка в 2021 году. Виды впервые отмечаются для территории Приамурья.

Introduction

When studying the diversity of insects in the Bolshekhekhtsyrskii Nature Reserve and its environs located in Khabarovskii Krai of Russia, the main attention was paid to checking species in the wild. But in recent years, when studying the species living in this territory in garden plots and vegetable gardens, two species were discovered that had not previously been recorded in the Russian Far East, and one species, the Colorado potato beetle, was firstly discovered within the Khabarovskii Krai. The collected material is stored in the collection of the Siberian Zoological Museum of the Institute of Systematics and Ecology of Animals SB RAS, Novosibirsk, Russia. All material from Khabarovskii Krai was collected by A.M. Dolgikh if alternative collector is not indicated.

The present work is registered in ZooBank (www.zoobank.org) under LSID urn:lsid:zoobank.org:pub:9D9ED103-2FA5-4490-9CFC-D3872EE274D1

Results

Homoptera, Cicadinea:
Membracidae, Smiliinae
Stictocephala bisonia Kopp et Yonke, 1977
The Buffalo Treehopper
(горбатка бизоновая, или бодушка бизонья)

Fig. 1.

Material. Russia, *Khabarovskii Krai:* 8 spm. — Il'inka garden, by sweeping over forbs with honeysuckle and ash, 5.VIII.2023, 4 spm. — ibidem, 9.VIII.2023, 3 spm. — ibidem, 21.VIII 2023, 118 spm. — idem, on different herbs, 25.VIII.–23.IX.2023, 3 spm. — ibidem, 24.IX 2023, 2 spm. — ibidem, 25.IX.2023, 4 spm. — ibidem, 26.IX.2023, 3 spm. — ibidem, 27.IX.2023, 4 spm. — ibidem, 8.X.2023, 3 spm. — ibidem, 9.X.2023, 1 spm. — ibidem, 12.X.2023, ibidem, visual observation,

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13.X.2023; 2 spm., 1 larva — ibidem, 4.VIII.2024, 5 spm. — ibidem, 7.VIII.2024, 25 spm, 1 larva — ibidem, 8.VIII.2024, 9 spm. — ibidem, 9.VIII.2024; 20 spm. — ibidem, 10.VIII.2024, 19 spm. — ibidem, 12.VIII.2024, 21 spm. — ibidem, 13.VIII.2024, 12 spm. — ibidem, 16.VIII.2024, 1 spm. — ibidem, 28.VIII.2024, 3 spm. — ibidem, 31.VIII.2024, 4 spm. — ibidem, 3.IX.2024, 3 spm. — ibidem, 6.IX.2024, 2 spm. — ibidem, 10.IX.2024, 2 spm. — ibidem, 17.IX.2024, 3 spm. — ibidem, 23.IX.2024, 4 spm. — ibidem, 27.IX.2024, 1 spm. — ibidem, 2.X.2024, 2 spm. — ibidem, 6.X.2024, 2 spm. — ibidem, 9.X.2024, 1 spm. — ibidem, 11.X.2024, 2 spm. — ibidem, 12.X.2024, 3 spm. — ibidem, 14.X.2024; 25 spm. — Il'inka village, 14.VIII.2024; 10 spm. — 50 m around Il'inka village, 14.VIII.2024; 10 spm. — about 1 km from Il'inka village to Krasnorechenskoe, 14.VIII.2024; 1 spm. — about 1,5 km from village Il'inka, 14.VIII.2024; 1 spm. — side of the road about 1 km S Krasnorechenskoe, 48°20'40" N, 135° E, 16.VIII.2024, V.V. Dubatolov leg.; 2 spm. — Bychikha, herby side of a road in the village, 48°17'44" N, 134°49'35" E, 5.VIII.2024; 1 spm. — ibidem, 48°17'45" N, 134°49'30" E, 15.VIII.2024; 1 spm. — ibidem, 4.X.2024, V.V. Dubatolov leg. *Primorskii Krai:* 1 spm. — Ussuriiskii District, village Kaimanovka vicinity, rivulet Barsukovka, 9.VIII.2014, A.E. Kostyunin leg.

Distribution. North America, accidentally introduced into Europe (France) at the beginning of the 20th century. Later it spread throughout almost the entire territory of Southern and Central Europe, the most eastern finds from the Volga region and Bashkiria, North Africa from Egypt to Morocco and Western Sahara, in western Asia all of Transcaucasia, Turkey, Syria, Lebanon, Israel, Jordan, Iraq, Arabian Peninsula, as well as in Kazakhstan [Emeljanov, 1994; Mityaev, 2000], Iran and Kyrgyzstan [Bogoutdinov et al., 2024]. Several years ago, it was discovered in Central China in the Shaanxi province [Yuan et al., 2020; Yu et al., 2021], but probably is much more common in that country.

Notes. In the vicinity of Khabarovsk, it was collected in a garden and in its immediate vicinity in 2023-2024, and along roads between and in villages in 2024, from early August to mid-October, although in October there were sporadic sightings. This species is polyphagous. Tt has been noted to feed on potato *Solanum tuberosum* L., 1753, peppermint *Mentha piperita* L., small-flowered galinsoga *Galinsoga parviflora* Cav., 1795, black currant *Ribes nigrum* L., 1753, garden raspberry *Rubus idaeus* L., 1753, edible honeysuckle *Lonicera edulus* Turcz., Manchurian ash *Fraxinus mandshurica* Rupr., *Viburnum sargentii* Koehne. But the highest abundance was observed on cereal grasses. In total it was observed on 23 species of monocotyledons and dicotyledons, as well as edible honeysuckle and Manchurian ash in the same garden and in its environs (within a long fallowland), specifically, on two currant bushes and two small, about 2 m tall ash trees growing there (about 44 % of finds). In the garden, the beetles were collected mainly on black currant, 29 % of finds, and on potatoes, 18 % of finds.

Coleoptera: Chrysomelidae
Alticinae
Phyllotreta armoraciae (Koch, 1803)
Horseradish Flea Beetle (хре́новая блошка)

Figs 2–5.

Material. Russia, *Khabarovskii Krai:* 1 spm. — Il'inka (Il'inskoe), garden, on radish, 29.V.2021, 27 spm. — ibidem, on horseradish, 31.V.2021, 11 spm. — ibidem, 3.VII.2021, 1 spm. — ibidem, 7.X.2021, 1 spm. — ibidem, 9.X.2021, 3 spm. — ibidem, 13.X.2021, 8 spm. — ibidem, 5.VI.2022, 1 spm. — ibidem, 11.VI.2022, 2 spm. — ibidem, 15.VI.2022, 1 spm. — ibidem, 20.VI.2022, 6 spm. — ibidem, 26.VI.2022, 6 spm. — ibidem, 5.VII.2022, 5 spm. — ibidem, 25.VII.2022, 1 spm. — ibidem, 15.VIII.2022, 3 spm. — ibidem, 27.VIII.2022, 4 spm. — ibidem, 5.IX.2022, 1 spm. — ibidem, 15.IX.2022, 2 spm. — ibidem, 7.V.2023, 4 spm. — ibidem, 12.V.2023, 4 spm. — ibidem, 12.V.2023, 3 spm. — ibidem, 16.V.2024, 2 spm. — 21.VI.2024, 1 spm. — 2.X.2024.

Fig. 1. The Buffalo Treehopper *Stictocephala bisonia* Kopp et Yonke on a honeysuckle leaf in Khabarovskii Krai of Russia. Photo by A.M. Dolgikh.

Рис. 1. Бизоновая горбатка *Stictocephala bisonia* Kopp et Yonke на листе жимолости съедобной в Хабаровском крае. Фото А.М. Долгих.

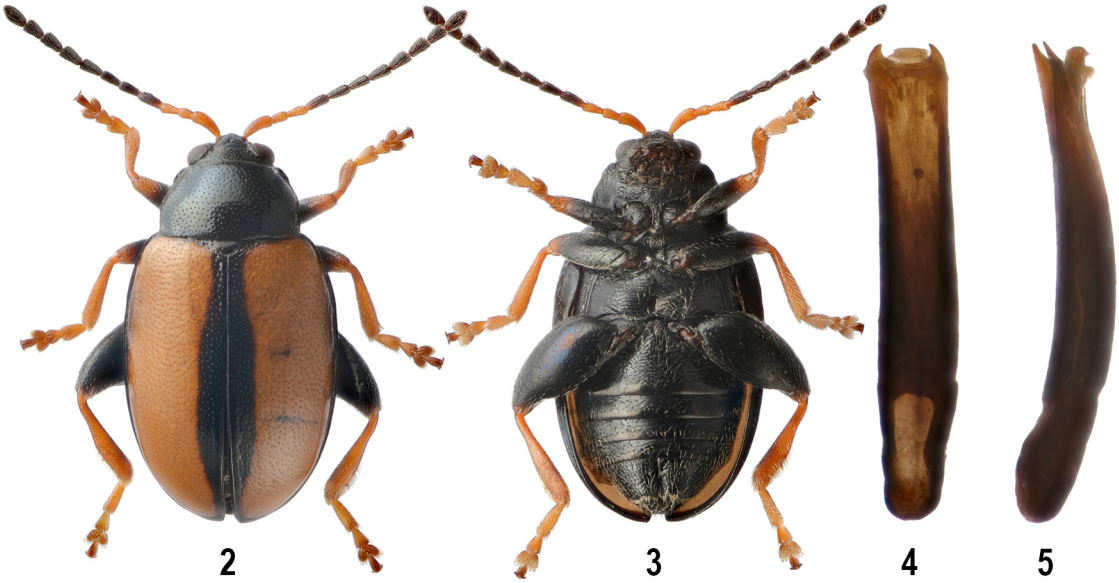
Distribution. Known from Western Europe (from the east of France and southern Sweden [Warchałowski, 2010], except for the south of the Iberian Peninsula, southern Italy and the southern Balkans), Transcaucasia (Azerbaijan), Kazakhstan, Central Asia (Turkmenistan, Uzbekistan), Mongolia, China, Japan [Gruev, Doberl, 1997; Gus'kova, 2010]. Introduced to North America [Warchałowski, 2010], where it is found in both Canada and the USA. In Russia occurs in European part, Kazakhstan, Central Asia, the Urals, Western Siberia, Altai, Sayan Mountains, Yakutia [Medvedev, Dubeshko, 1992; Lopatin, 2010], Sakhalin [Gus'kova, 2010]. It is now discovered for the first time on the mainland of the south of the Far East.

Collected in the same garden as above, almost all individuals on their usual food plant (horseradish), and only one specimen on radish (probably by an accident). The beetles appear after hibernation in May and are on wings till middle October with short breaks in mid-July and early August throughout almost the entire warm season, probably developing in several generations, and overwinter in the adult stage. Most likely, in the Khabarovskii Krai it is a recently imported species that has acclimatized well in vegetable gardens.

Chrysomelinae
Leptinotarsa decemlineata (Say, 1824)
Colorado Potato Beetle (колорадский жук)

Material. Russia, *Khabarovskii Krai:* 2♂♂, 1♀, 1 larva — Kiinsk, the Kiya River valley, on potato field, 17.VII.2018, A.M. Dolgikh, V.V. Dubatolov leg.

Distribution. The species originates from the Sonoran zoogeographical subregion of Mexico, from where in the XIXth century it has spread throughout the temperate zone of North America, and at the end of the XIXth — beginning of the XXth century it was brought to Western Europe, and in 1949 it first appeared in the territory of the USSR in western Ukraine, and in 1953 almost throughout the entire west part of the USSR; in subsequent years it spread throughout almost the entire European part of the USSR. In the south of the Russian Far



Figs 2–5. Details of Horseradish Flea beetle *Phyllotreta armoraciae* (Koch) morphology: external appearance (2–3) and aedeagus (4–5). 2 — dorsal view; 3, 4 — ventral view; 5 — lateral view. Photo by S.V. Reshetnikov.

Рис. 2–5. Детали строения Хре́новой блошки *Phyllotreta armoraciae* (Koch): внешний вид (2–3) и эдеагус (4–5). 2 — сверху; 3, 4 — снизу; 5 — сбоку. Фото С.В. Решетникова.

East, it was discovered first in the south of the Primorskii Krai territory in 2000, and in 2011 in the south of the Khabarovskii Krai [Komsomolskaya Pravda in the Khabarovskii Krai, June 17, 2011], probably near the city of Khabarovsk. By 2013, according to the Office of Rosselkhoznadzor (Russian Agriculture Control), this pest was discovered in the very south of the Khabarovskii Krai near the city of Bikin [Matsishina, Rogatnykh, 2013].

In 2018, these beetles were collected from private potato fields on the southern outskirts of the village Kiinsk district named after Lazo. In the same year, according to personal reports, it was repeatedly observed in other areas near Khabarovsk, for example, P.A. Dolgikh reported findings of the Colorado Potato Beetle in private gardens along Vyborgskaya Street in the city of Khabarovsk in 2021. But in subsequent years, the Colorado potato beetle was found neither in the vicinity of Kiinsky nor on the street. Vyborgskaya was no longer collected, its hearths died out.

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