

New data on the fauna of the infraorder Pentatomomorpha (Heteroptera) from East Kazakhstan

Новые данные по фауне инфраотряда Pentatomomorpha (Heteroptera) Восточного Казахстана

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Ключевые слова: биоразнообразие, новые находки, Heteroptera, Pentatomomorpha, Восточный Казахстан.

Abstract. New data on the distribution of 27 species of Heteroptera from eight families of infraorder Pentatomomorpha in East Kazakhstan are presented. 14 species, *Lygaeosoma sibiricum* Seidenstücker, 1962 (Lygaeidae); *Geocoris ater* (Fabricius, 1787), *G. desertorum* (Jakovlev, 1871) (Geocoridae); *Eremocoris abietis abietis* (Linnaeus, 1758), *E. plebejus plebejus* (Fallén, 1807), *Gastroles grossipes grossipes* (De Geer, 1773), *Scolopostethus pilosus pilosus* Reuter, 1875, *Megalonotus chiragra* (Fabricius, 1794), *M. sabulicola* (Thomson, 1870) (Rhyparochromidae); *Dicranocephalus medius* (Mulsant et Rey, 1870) (Stenocephalidae); *Nemocoris fallenii* R.F. Sahlberg, 1848 (Coreidae); *Graphosoma consimile* Horváth, 1903, *Tholagmus breviceps* Jakovlev, 1883 and *T. flavolineatus* (Fabricius, 1798) (Pentatomidae) are recorded from East Kazakhstan for the first time. New localities in East Kazakhstan are reported for 13 species. The fauna of the infraorder Pentatomomorpha (Heteroptera) in East Kazakhstan now includes 269 species from 21 families.

Резюме. Приводятся новые данные о распространении 27 видов Heteroptera из восьми семейств инфраотряда Pentatomomorpha в Восточном Казахстане. Для фауны Восточного Казахстана впервые приводятся 14 видов: *Lygaeosoma sibiricum* Seidenstücker, 1962 (Lygaeidae); *Geocoris ater* (Fabricius, 1787), *G. desertorum* (Jakovlev, 1871) (Geocoridae); *Eremocoris abietis abietis* (Linnaeus, 1758), *E. plebejus plebejus* (Fallén, 1807), *Gastroles grossipes grossipes* (De Geer, 1773), *Scolopostethus pilosus pilosus* Reuter, 1875, *Megalonotus chiragra* (Fabricius, 1794), *M. sabulicola* (Thomson, 1870) (Rhyparochromidae); *Dicranocephalus medius* (Mulsant et Rey, 1870) (Stenocephalidae); *Nemocoris fallenii* R.F. Sahlberg, 1848 (Coreidae); *Graphosoma consimile* Horváth, 1903, *Tholagmus breviceps* Jakovlev, 1883 и *T. flavolineatus* (Fabricius, 1798) (Pentatomidae). Так же для 13 видов приво-

дятся новые точки сборов в Восточном Казахстане. Фауна инфраотряда Pentatomomorpha (Heteroptera) Восточного Казахстана составляет 269 видов из 21 семейства.

Introduction

True bugs (Heteroptera) comprise more than 45 000 species worldwide, grouped into seven infraorders [Henry, 2017]. They occupy a wide range of ecological niches: some are parasites of birds and mammals; others feed on all parts of seed plants and even certain ferns from roots to pollen: some species consume fungal mycelium; many are predators that prey on other arthropods. They may inhabit the webs of spiders and embiopterans, as well as aquatic environments, including the water surface, with a few species uniquely adapted to life in the open ocean [Schuh, Weirauch, 2020].

The infraorder Pentatomomorpha Leston, Pendergrast et Southwood, 1954 is the second largest within Heteroptera, including more than 18 000 species worldwide [Vinokurov et al., 2024]. It is divided into six superfamilies: Aradoidea, Pentatomioidea, Lygaeoidea, Idiostoloidea, Coreoidea, and Pyrrhocoroidea [Schuh, Weirauch, 2020]. Most species are phytophagous, feeding, at least during their larval stages, on reproductive parts of plants, including seeds. Many Aradidae feed on wood-inhabiting fungi, while Lygaeoidea and Cydnidae extract sap from the conducting tissues of stems and roots. Asopinae (Pentatomidae), Geocoridae, some Rhyparochromidae, and several genera of Pyrrhocoridae have evolved secondary predation. Eggs are laid on plants, under bark, on the soil, or in plant litter, but never

within plant tissues [Vinokurov et al., 2024].

The taxonomic composition and ecological features of Heteroptera in Kazakhstan were described by P.A. Esenbekova [Esenbekova, 2013], who reported more than 1250 species belonging to six infraorders. The study of true bugs in Kazakhstan has a long history, dating back to the late nineteenth century. It includes both focused faunistic investigations [Asanova, 1962, 1980; Asanova, Childibaev, 1979; Exenbekova, 2011; Abukenova et al., 2022] and fragmentary data obtained during studies of broader administrative or biogeographical regions, as well as reviews of particular genera [Jakovlev, 1883; Oshanin, 1910; Kiritschenko, 1913; Seidenstücker, 1962; Kerzhner, 1966, 1979; Vinokurov, 1983; Neimorovets, 2002, 2024].

In Eastern Kazakhstan, the main contribution to the study of faunistic diversity and ecological characteristics was made by R.B. Asanova [Asanova, 1974, 1986], with additional records provided by N.N. Vinokurov and co-authors [Vinokurov, Rudoi, 2020a; Vinokurov et al., 2022].

East Kazakhstan is bounded by the Russian Federation to the north, the Xinjiang Uygur Autonomous Region, People's Republic of China to the east, the Alakol Depression, including lake Zhalanashkol, to the south, and the Kazakh Uplands to the west.

A significant part of East Kazakhstan is occupied by the uplands of the Altai Mountains. In the northwestern part, these include the Ubinskii, Ivanovskii, Lineyskii, Kholzun, and Ulbinskii ranges. The central part includes the Listvyaga and Katun ranges, the latter containing the highest peak, Belukha Mount, 4506 m.

The ranges of the southern part have a more complex structure and are located between the Bukhtarma River and the Zaisan Depression. The Naryn Range rises from 600–800 m in the west to 2533 m at Shubarshilik Mount in the east; the Ozyorny Range reaches 2710 m; the Sarymsakty Range rises from 2700 to 3773 m at Berkutaul Mount; the Tarbagatai (Altai) Range reaches elevations between 2100 and 2863 m; the Kurchum Range rises from 700–1000 m in the west to 2646 m at Sarytau Mount in the central part, and up to 3305 m at Aksubas Mount in the east. The Southern Altai Range rises from 1400 to 3276 m at Krutinka (Kurtu) Mount. In this area, there is a depression occupied by the Kurchum River, along with several intermontane basins: Kara-Kaba, Bobrovka, Orlovka, and Markakol. The Asutau, Matabay, Sarlytan, Keregetas, Sonaly, Karamola, Kyzylashchy-Kezen, Kamenisty, Tuyemaynak, and Ushkurmyrker ranges frame Lake Markakol from the east and south [Seliverstov, 1967a].

The Kalba Range is an isolated massif in the western part of East Kazakhstan. It forms a complex system that includes the Koktau, Ayyrtau, and Dongaly massifs, with elevations ranging from about 350 m in the west to 1598 m in the east. The Bukhtarma Reservoir and the Irtysh River valley mark the eastern and northern boundaries, while the Char and Kokpekty Rivers define the southern and western ones. The remaining area is occupied by

the Zaisan Depression [Seliverstov, 1967b] and by the Saikan, Manrak, Saur, and Western Tarbagatai ranges, which separate the Zaisan and Alakol depressions.

The climate of the region is shaped by three major types: Mongolian, West Siberian, and Central Asian. The Mongolian type is characterized by a summer maximum and a winter minimum in precipitation. The West Siberian climate displays several distinct peaks and declines in precipitation throughout the year. The Central Asian type is marked by maximum precipitation during spring and autumn, and a minimum in winter [Yegorina, 2002].

East Kazakhstan has a dense hydrographic network [Gvozdetsky, Mikhailov, 1963] and belongs to the Irtysh River basin. The rivers are mainly fed by snowmelt and glacial runoff, which continues throughout the summer [Kuminova, 1960; Abramovich, 1967], as well as by summer and autumn precipitation [Gvozdetsky, Mikhailov, 1963; Abramovich, 1967]. The major rivers include the Irtysh, Bukhtarma, Uba, Kurchum, Ulba, Kaljir, and Kara-Kaba [Seliverstov, 1967a].

The largest lakes are Zaisan [Rybin, 1952] and Markakol [Seliverstov, 1967a]. Lake Zaisan lies at 383 m elevation and receives inflow from several rivers: the Black Irtysh and Kendyrlik from the east; the Kokpektinka, Bugaz, and Bazar from the west; and the Cherga, Arasan, and Ters-Arlyk from the north. The Irtysh River flows out of the lake to the north. The lake is about 110 km long and 22–48 km wide [Seliverstov, 1967a].

Lake Markakol is located in an intermontane basin at 1449 m elevation. Several small rivers flow into the lake, while only the Kaljir River flows out to the southwest. The lake is about 37 km long and 16 km wide [Seliverstov, 1967a].

Material and Methods

Material was collected in 2022 and 2023 from various areas in East Kazakhstan. Additionally, during the period of 16–19 September 2020, material from ISEA was studied (Figs 1–15). Specimens were collected using standard methods: entomological net, aspirator, light traps, and soil traps.

Data on the species identification and ecological features were obtained from the works of A.N. Kiritschenko [1913], V.G. Putshkov [1961, 1962, 1965, 1969, 1974, 1986], I.M. Kerzhner and T.L. Jaczewski [1964], S.A. Kulik [1965], A.N. Kiritschenko, I.M. Kerzhner [1972], V.P. Petrova [1975, 1980], I.M. Kerzhner [1979], N.N. Vinokurov [1979], N.N. Vinokurov and E.V. Kanyukova [1995], P. Moulet [1995], J. Péricart [1998a, b, c, 2001], E. Heiss, J. Péricart [2007], P.A. Esenbekova [2013], B. Aukema, D.J. Hermes [2016], E. Heiss and G.E. Scudder [2019].

Species distribution data by country were sourced from the Catalogue of Palaearctic Heteroptera, and data in Russian were taken from A.N. Kiritschenko, [1910], A.I. Cherepanov, A.N. Kiritschenko [1962], S.A. Kulik [1965], I.M. Kerzhner [1979], N.N. Vinokurov [2007]; E.V. Kanyukova, N.N. Vinokurov [2009], N.N. Vinoku-

rov, E.V. Kanyukova, Golub V.B. [Vinokurov et al., 2010], Vinokurov N.N., Rudoi V.V. [2020b, 2022a, b]; Rudoi et al. [2023, 2024].

The taxonomic positions of Lygaeidae, Geocoridae, and Rhyparochromidae within the superfamily Lygaeoidea are based on the Lygaeoidea Species File; Stenocephalidae, Rhopalidae, and Coreidae within the superfamily Coreoidea are based on the Coreoidea Species File; Aradidae within the superfamily Aradoidea and Pentatomidae within the superfamily Pentatomoidea are followed by E. Heiss [2001], D.A. Rider [2006] and B. Aukema, Chr. Rieger and W. Rabitsch [2013]. The information on the current taxonomic status and synonymy of taxa was based on the works of O.M. Reuter [1888], G. Horváth [1899], A.I. Cherepanov, A.N. Kiritschenko [1962], I.M. Kerzhner [1976], R.E. Linnavuori [1984], E. Heiss [2001], J. Péricart [2001, 2004], N.N. Vinokurov, E.V. Kanyukova, V.B. Golub [Vinokurov et al., 2010], E. Heiss, G.E. Scudder [2019].

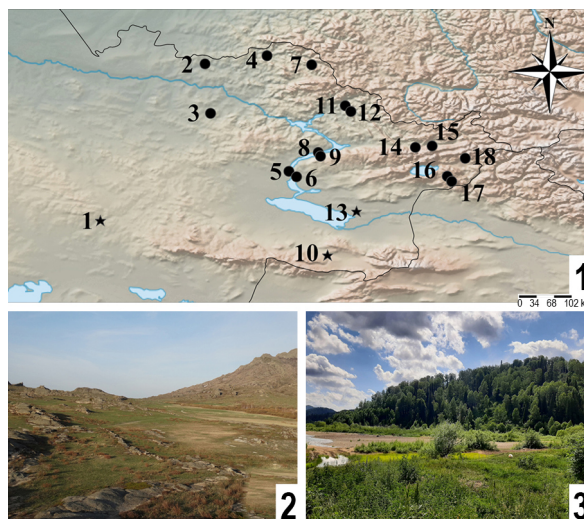
Color photographs of the habitus were taken with a Canon EOS RP camera equipped with a lens Venus Optics Laowa 100 mm f/2.8 1–2x macro, macro conversion lens Raynox DSR-250 and a lens Venus Optics Laowa 25 mm f/2.8 2.5–5x macro. Partially focused images of each specimen were stacked using the Zerene Stacker (version 1.04) software. The drawings were combined using Paint.NET (version 5.1) software. All photographs of the dorsal view of the species and background were not subjected to graphic modifications; black vertical lines are shown in millimeters. The locality map was created using the online tool SimpleMappr. Plant and fungal species were verified based on the data provided by Plantarium.

The list of Heteroptera species (Pentatomomorpha) from East Kazakhstan is presented in the Appendix (p. 1–5).

The present work is registered in ZooBank (www.zoobank.org) under urn:lsid:zoobank.org:pub:9C227EBF-33D1-43C5-AA46-81A57C11F11D

Results

The list of 27 species of Heteroptera from eight families of infraorder Pentatomomorpha collected in East Kazakhstan, namely: *Aradus corticalis* (Linnaeus, 1758); *A. lugubris* Fallén, 1807; *A. pictellus* Kerzhner, 1973 (Aradidae); *Lygaeosoma sibiricum* Seidenstücker, 1962 (Lygaeidae) (Fig. 16); *Geocoris ater* (Fabricius, 1787) (Fig. 17); *G. desertorum* (Jakovlev, 1871) (Geocoridae) (Fig. 18); *Drymus sylvaticus* (Fabricius, 1775); *Eremocoris abietis abietis* (Linnaeus, 1758) (Fig. 19); *E. plebejus plebejus* (Fallén, 1807) (Fig. 20); *Gastroides grossipes grossipes* (De Geer, 1773) (Fig. 21); *Scolopostethus pilosus pilosus* Reuter, 1875 (Fig. 22); *Lamprodema maura* (Fabricius, 1803); *Megalonotus antennatus* (Schilling, 1829); *M. chiragra* (Fabricius, 1794) (Fig. 23); *M. sabulicola* (Thomson, 1870) (Fig. 24); *Peritrechus angusticollis* (R.F. Sahlberg, 1848); *Acompus rufipes* (Wolff, 1804) (Rhyparochromidae);



Figs 1–3. Locality map and habitats of Heteroptera in the East Kazakhstan. 1 — locality map; 2 — Aiyrtau Mountain; 3 — Karaguzhikha village. Designations: 1 — 26 km S Ayagus village, 2 — Shemonaikha village, 3 — Air Lake, 4 — Karaguzhikha village, 5 — Kulundzhun sands, 6 — Narym Mountain Ridge, 7 — Chernaya Uba ecovillage, 8 — 4.5 km E of Novostroika village, 9 — Kulanzhorga natural boundary, 10 — Manrak Mountain Ridge, Taygindzyn River, 11 — Left bank of Hamir River, 12 — Bykovskiy pass, 13 — Karaberek Mountain, 14 — near Katon-Karagay village, 15 — 3 km E Chingistay village, 16 — Sarlytan natural boundary, 17 — Ushkurmyner Ridge, Kopyrtas River, 18 — Takyr Mountain, Black Circle — original points, Black Star — material from ISEA. Photo 2 by G.A. Bolbotov, and 3 by V.V. Rudoi.

Рис. 1–3. Карта мест сборов Heteroptera в Восточном Казахстане. 1 — карта сборов; 2 — гора Айыртау; 3 — с. Карагузиха. Обозначения: 1 — 26 км южнее с. Аягус, 2 — с. Шемонаиха, 3 — озеро Айыр, 4 — с. Карагузиха, 5 — Кулунджунские пески, 6 — Нарымский хребет, 7 — экопоселение Чёрная Уба, 8 — 4,5 км В с. Новостройка, 9 — урочище Куланжорга, 10 — хребет Манрак, река Тайгиндзын, 11 — левый берег реки Хамир, 12 — перевал Быковский, 13 — гора Караберик, 14 — окрестности с. Катон-Карагай, 15 — 3 км В с. Чингистай, 16 — урочище Сарлытан, 17 — хребет Ушкурмынкер, река Копыртас, 18 — гора Такыр, чёрный круг — оригинальные точки, чёрная звезда — материал ИСиЭЖ. Фото 2: Г.А. Болботов, 3 — В.В. Рудой.

Dicranocephalus medius (Mulsant & Rey, 1870) (Stenocephalidae) (Fig. 25); *Myrmus glabellus* Horváth, 1901 (Rhopalidae); *Nemocoris fallenii* R.F. Sahlberg, 1848 (Fig. 26); *Ulmicola spinipes* (Fallén, 1807) (Coreidae); *Rhaphigaster brevispina* Horváth, 1889; *Bagrada stolidus* (Herrich-Schaeffer, 1839); *Graphosoma consimile* Horváth, 1903; *Sternodontus binodulus* Jakovlev, 1893; *Tholagmus breviceps* Jakovlev, 1883; *Th. flavolineatus* (Fabricius, 1798) (Pentatomidae) (Fig. 27) is presented. 14 species are recorded from East Kazakhstan for the first time: *Lygaeosoma sibiricum* Seidenstücker, 1962 (Lygaeidae); *Geocoris ater* (Fabricius, 1787), *G. desertorum* (Jakovlev, 1871) (Geocoridae); *Eremocoris abietis abietis* (Linnaeus, 1758), *E. plebejus plebejus* (Fallén, 1807), *Gastroides grossipes grossipes* (De Geer, 1773), *Scolopostethus pilosus pilosus* Reuter, 1875, *Megalonotus chiragra* (Fabricius, 1794), *M. sabulicola* (Thomson, 1870) (Rhyparochromidae); *Dicranocephalus medius* (Mulsant et Rey, 1870) (Stenocephalidae); *Nemocoris fallenii* R.F. Sahlberg, 1848 (Coreidae); *Graphosoma consimile* Horváth, 1903, *Tholagmus*



Figs 4–9. Habitats of Heteroptera in the East Kazakhstan. 4 — Narym Mountain Ridge; 5 — Chernaya Uba ecovillage; 6 — 4.5 km E of Novostroika village; 7 — Kulanzhorga natural boundary; 8 — Left bank of Hamir River; 9 — Bykovskiy pass. Photo 4, 6 by G.A. Bolbotov, 5, 7 by V.V. Rudoi, 8, 9 by A.U. Gabdullina.

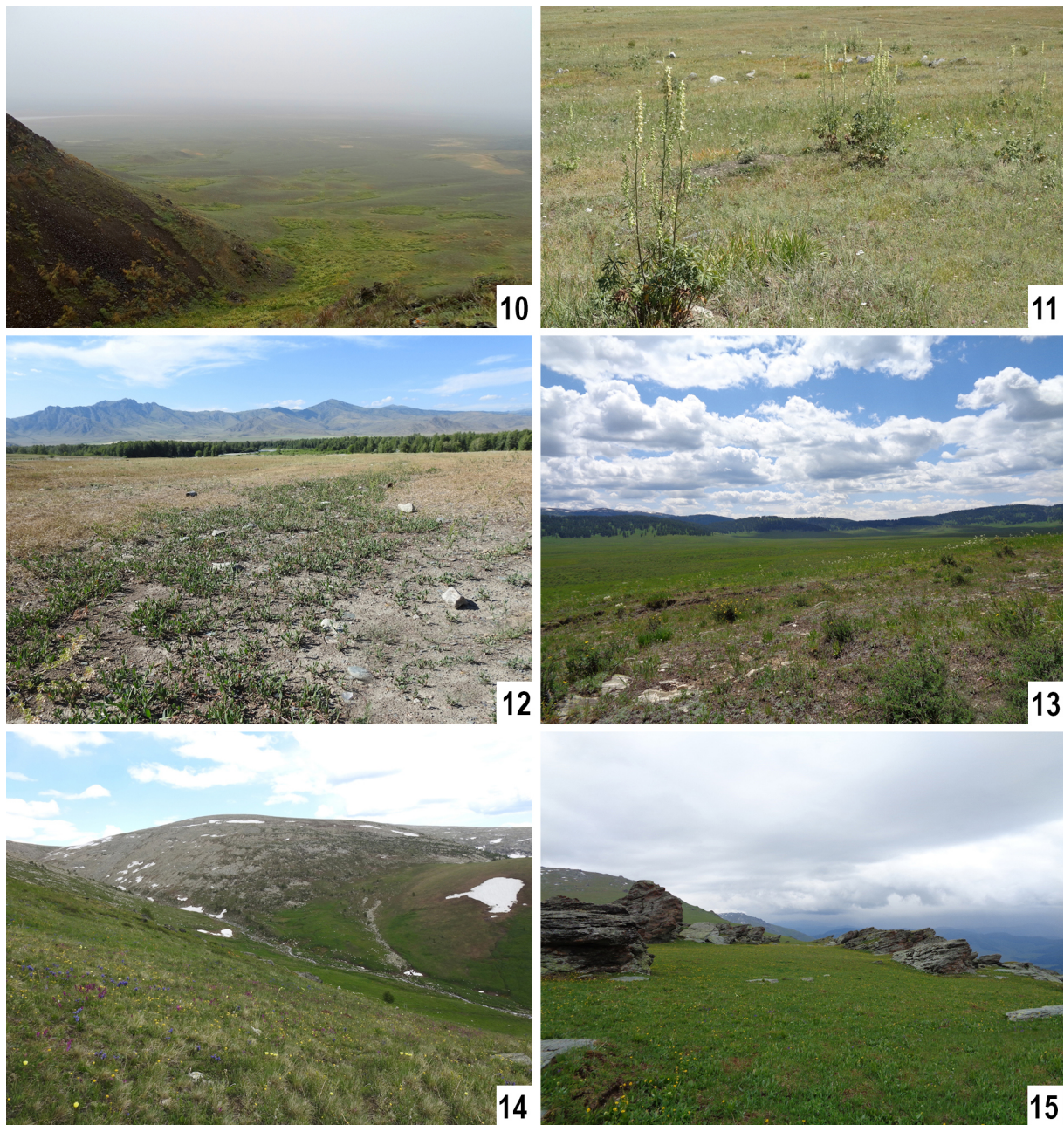
Рис. 4–9. Местобитания Нетероптера в Восточном Казахстане. 4 — Нарымский хребет; 5 — экопоселение Чёрная Уба; 6 — 4,5 км В с. Новостройка; 7 — урочище Куланжорга; 8 — левый берег реки Хамир; 9 — перевал Быковский. Фото 4, 6 — Г.А. Болботов, 5, 7 — В.В. Рудой, рис. 8, 9 — А.У. Габдуллина.

breviceps Jakovlev, 1883 and *T. flavolineatus* (Fabricius, 1798) (Pentatomidae). Additionally, new localities in East Kazakhstan are reported for 13 species. The fauna of the infraorder Pentatomomorpha (Heteroptera) in East Kazakhstan now includes 268 species from 21 families.

Acknowledgements

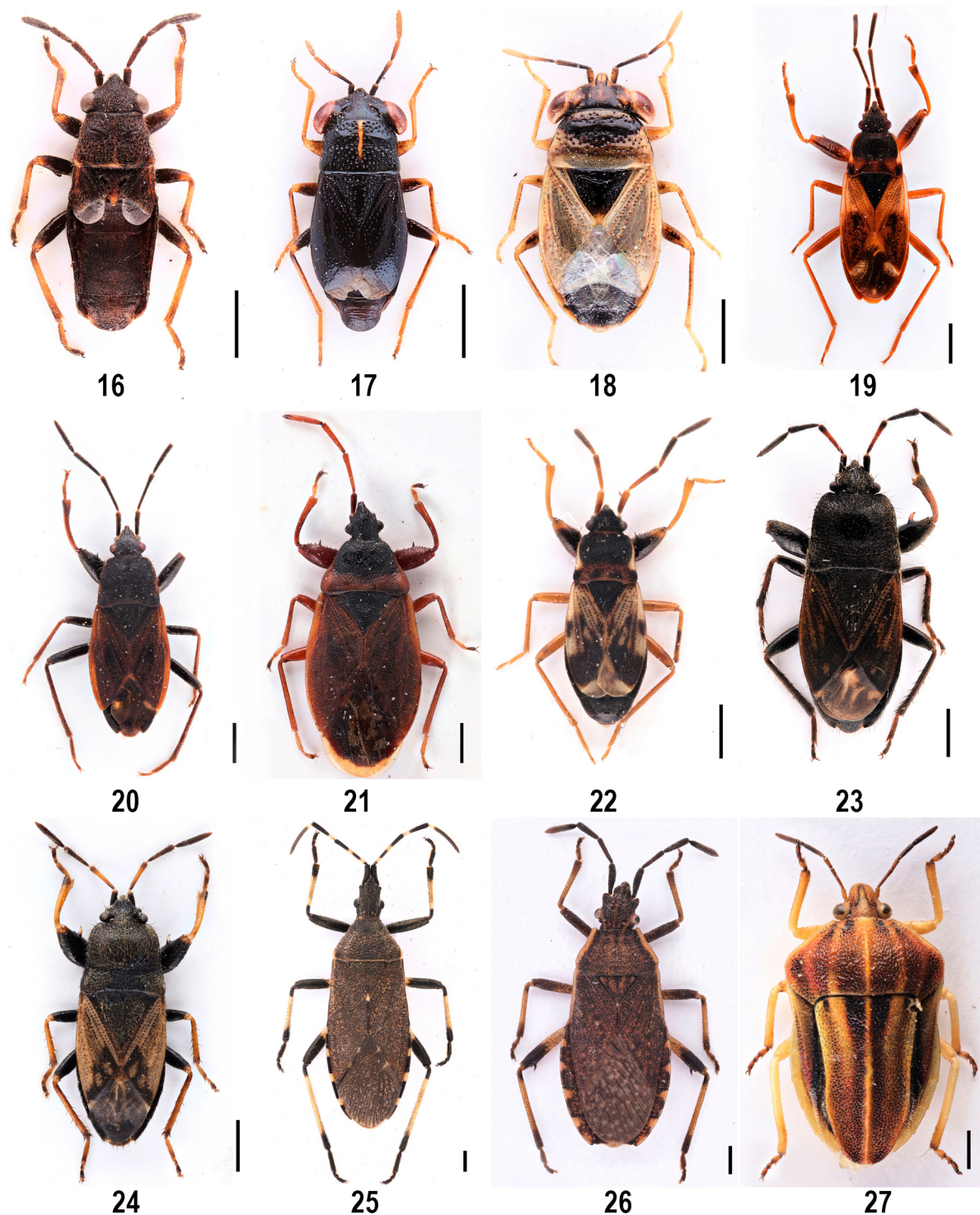
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Figs 10–15. Habitats of Heteroptera in the East Kazakhstan. 10 — Karaberek Mountain; 11 — near Katon-Karagay village; 12 — 3 km E Chingistay village; 13 — Sarlytan natural boundary; 14 — Ushkurmyner Ridge, Kopyrtas River; 15 — Takyr Mountain. Photo 10–12, 14 by G.A. Bolbotov, 13, 15 by V.V. Rudoi.

Рис. 10–15. Местообитания Heteroptera в Восточном Казахстане. 10 — гора Караберик; 11 — окрестности с. Катон-Карагай; 12 — 3 км В с. Чингистай; 13 — урочище Сарлытан; 14 — хребет Ушкурмынкер, река Копыртас; 15 — Гора Такыр. Фото 10–12, 14 — Г.А. Болботов, 13, 15 — В.В. Рудой.



Figs 16–27. External appearance of newly registered species of Heteroptera from East Kazakhstan. 16 — *Lygaeosoma sibiricum* Seidenstücker, 1962 (Lygaeidae); 17 — *Geocoris ater* (Fabricius, 1787); 18 — *Geocoris desertorum* (Jakovlev, 1871) (Geocoridae); 19 — *Eremocoris abietis abietis* (Linnaeus, 1758); 20 — *Eremocoris plebejus plebejus* (Fallén, 1807); 21 — *Gastrodes grossipes grossipes* (De Geer, 1773); 22 — *Scolopostethus pilosus pilosus* Reuter, 1875; 23 — *Megalonotus chiragra* (Fabricius, 1794); 24 — *Megalonotus sabulicola* (Thomson, 1870) (Rhyparochromidae); 25 — *Dicranocephalus medius* (Mulsant et Rey, 1870) (Stenocephalidae); 26 — *Nemocoris fallenii* R.F. Sahlberg, 1848 (Coreidae); 27 — *Tholagmus flavolineatus* (Fabricius, 1798) (Pentatomidae). Scale bars 1 mm.

Рис. 16–27. Внешний вид Гетероптера из Восточного Казахстана. 16 — *Lygaeosoma sibiricum* Seidenstücker, 1962 (Lygaeidae); 17 — *Geocoris ater* (Fabricius, 1787); 18 — *Geocoris desertorum* (Jakovlev, 1871) (Geocoridae); 19 — *Eremocoris abietis abietis* (Linnaeus, 1758); 20 — *Eremocoris plebejus plebejus* (Fallén, 1807); 21 — *Gastrodes grossipes grossipes* (De Geer, 1773); 22 — *Scolopostethus pilosus pilosus* Reuter, 1875; 23 — *Megalonotus chiragra* (Fabricius, 1794); 24 — *Megalonotus sabulicola* (Thomson, 1870) (Rhyparochromidae); 25 — *Dicranocephalus medius* (Mulsant et Rey, 1870) (Stenocephalidae); 26 — *Nemocoris fallenii* R.F. Sahlberg, 1848 (Coreidae); 27 — *Tholagmus flavolineatus* (Fabricius, 1798) (Pentatomidae). Масштаб: 1 мм

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Appendix to the article: V.V. Rudoi, A.U. Gabdullina, G.A. Bolbotov. New data on the fauna of the infraorder Pentatomomorpha (Heteroptera) from East Kazakhstan. (Euroasian Entomological Journal. 2025. Vol.24. No.6. P.299–306).

Приложение к статье: В.В. Рудой, А.У. Габдуллина, Г.А. Болботов. Новые данные по фауне инфраотряда Pentatomomorpha (Heteroptera) Восточного Казахстана. (Евразийский энтомологический журнал. 2025. Т.24. Вып.6. С.299–306).

The list of Heteroptera species (Pentatomomorpha) from East Kazakhstan

Appropriate citations are provided for each species if they contribute records relevant to the study area, affect the species taxonomy, provide geographical information, or include ecological features. Data from literary sources are provided in the original language, with translations given in square brackets «[]». The collection locations from the ISEA are also provided in the original language, with the translations and modifications given in square brackets «[]». The slash «/» sign for the species *Tholagus breviceps* Jakovlev, 1883 indicates the original definition.

Pentatomomorpha Leston,
Pendergrast et Southwood, 1954

Aradoidea Brullé, 1836

Aradidae Brullé, 1836

Aradinae Brullé, 1836

Aradus Fabricius, 1803

Aradus (Aradus) Fabricius, 1803

Aradus (Aradus) corticalis (Linnaeus, 1758)

Material. 2♂♂, 4♀♀ — Karaguzhikha village, 50°45'49"N, 83°01'30"E, 514 m a.s.l., 8–9.VII.2023, coll. Rudoi V.V.; 1♂, 1♀ — Chernaya Uba ecovillage, foot of the Lyamin Belok Mountain, right bank of Chernaya Uba River, 50°36'28.6"N, 83°48'44.9"E, 860 m a.s.l., 13.VII.2023, coll. Rudoi V.V., Bolbotov G.A.

Previous records. «Зыряновский р-н, окр. пос. Столбоуха [Zyryanovsk district, near Stolboukha village]» [Asanova, 1986].

Distribution. Trans-Eurasian, temperate-subtropical.

Ecology. Dendrobiont, under the crown of Pinopsida; mesophile; mycetophagous, trophically associated with Polyporaceae and Fomitopsidaceae: *Fomes marginatus* (Pers.) Gillet, *Daedalea quercina* (L.) Pers.; acyclic life cycle, different developmental stages can be encountered simultaneously throughout the year; overwinter adults and nymph II–V stages [Putshkov, 1974; Heiss, Péricart, 2007; Esenbekova, 2013; Aukema, Hermes, 2016].

Aradus lugubris Fallén, 1807

Material. 1♀ — Shemonaikha village, 50°36'53.7"N, 81°54'48.9"E, 294 m a.s.l., 08.V.2023, coll. Rudoi V.V.; 1♂ — same place, 50°37'51.1"N, 81°55'33.4"E, 333 m a.s.l., 07.V.2023, coll. Rudoi V.V.

Previous records. «Gub. Tomsk, Altaj: Kotan Karagaj [Katon-Karagay village]» [Kiritshenko, 1913].

Distribution. Holarctic, polyzonal.

Ecology. Dendrobiont, under the crown of *Abies* sp., *Pinus* sp., *Picea* sp., *Larix* sp. etc. (Pinaceae), also recorded on the trunks and near the root systems of burned pine trees; mesophile; mycetophagous; acyclic life cycle, different developmental stages can be encountered simultaneously throughout the year; overwinter adults and nymph II–V stages [Putshkov, 1974; Heiss, Péricart, 2007; Esenbekova, 2013].

Aradus pictellus Kerzhner, 1973

Aradus pictus (non Baerensprung, 1859): Heiss, 2001: 17 and Heiss, Péricart, 2007: 130; Putshkov, 1974: 118; Asanova, 1986: 66;

= *Aradus obtectus* Vászárhelyi, 1988: Heiss and Scudder, 2019: 824.

Material. 1♀ — Karaguzhikha village, 50°45'49"N, 83°01'30"E, 514 m a.s.l., 08–09.VII.2023, coll. Rudoi V.V.

Previous records. «(*A. corticalis*) Зыряновский р-н, окр. пос. Столбоуха (далее *A. pictus*) там же [(*A. corticalis*) Зыряновск district, near Stolboukha village (hereinafter *A. pictus*) same place]» [Asanova, 1986].

Distribution. Holarctic, temperate-subtropical.

Ecology. Dendrobiont, under the crown of *Abies* sp., *Picea* sp., *Pinus* sp. (Pinaceae), *Betula* sp. (Betulaceae), *Acer* sp. (Aceraceae); mesophile; mycetophagous, trophically associated with Polyporaceae; acyclic life cycle, different developmental stages can be encountered simultaneously throughout the year; overwinter adults [Putshkov, 1974; Heiss, Péricart, 2007; Esenbekova, 2013]. Collected from fungi (Polyporaceae) on log of the *Abies sibirica* Ledeb. (Pinaceae).

Note. Following the note by E. Heiss [Heiss, 2001], E. Heiss, J. Péricart [Heiss, Péricart, 2007] and the synonymy established by E. Heiss and G.E. Scudder [Heiss and Scudder, 2019], we attribute the ecological data of *A. pictus* in V.G. Putshkov [Putshkov, 1974] to *A. pictellus*. Additionally, ecology data of *Aradus obtectus* are provided by P.A. Esenbekova [Esenbekova, 2013] includes a reference to the work of V.G. Putshkov [Putshkov, 1974].

Lygaeoidea Schilling, 1829

Lygaeidae Schilling, 1829

Lygaeinae Schilling, 1829

Lygaeosoma Spinola, 1837

Lygaeosoma sibiricum Seidenstücker, 1962

Fig. 16.

= *Lygaeosoma sibiricum* f. *rufa* Seidenstücker, 1962: Péricart, 2001: 45 (unavailable name);

= *Lygaeosoma breviceps* Kiritshenko, 1962 in Cherepanov, Kiritshenko, 1962: Vinokurov et al., 2010: 182 (nomen nudum).

Material. 1♂, 1♀ — Narymskii Ridge, 49°00'07"N, 83°57'39"E, 420 m a.s.l., 05.VIII.2023, coll. Rudoi V.V., Bolbotov G.A.

Distribution. Eurasian, temperate. Nearest records — Kazakhstan: Akmola Region, «Атбасар; мелкосопочник Байжанжал [Atbasar; Baizhanzhall low hill]» [Seidenstücker, 1962], «подножие гор Кокшетау, Целиноградская область [foot of the Kokshetau mountains, Tselinograd [now Akmola] Region]» [Asanova, 1962], Ulytay Region, «[Kok-sengir Mts.] 40 km S of Zhana-Arka» [Seidenstücker, 1962], «Кустанайская область [Kostanay Region]» [Asanova, 1980]; Russia, West Siberia: Republic of Tuva, «близ Турана [near Turan city]» [Cherepanov, Kiritshenko, 1962].

Ecology. Gerpetobiont; meso-xerophile, in semi-desert and steppe zones; polyphytophagous, trophically associated with plants seeds, in Yakutia recorded under *Veronica incana* L.

(Scrophulariaceae); one generation per year; overwinter adult [Putshkov, 1969; Vinokurov, 1979; Esenbekova, 2013].

Note. This species is newly registered to the fauna of East Kazakhstan.

Geocoridae Dahlbom, 1851

Geocorinae Dahlbom, 1851

Geocoris Fallén, 1814

Geocoris (*Geocoris*) Fallén, 1814

Geocoris (*Geocoris*) *ater* (Fabricius, 1787)

Fig. 17.

Material. 1♂, 2♀♀ — Narymskii Ridge, Bukhtarma reservoir, Kulanzhorga natural boundary, 49°00'15"N, 83°57'37"E, 390 m a.s.l., 06.VIII.2023, coll. Rudoi V.V., Bolbotov G.A.; 3♂♂ — Sarymsakty Ridge, near Katon-Karagay village, 49°09'26"N, 85°37'20"E, 1130 m a.s.l., 03.VIII.2023, coll. Rudoi V.V., Bolbotov G.A.; 11♂♂, 4♀♀ — same place, 05.VIII.2023, coll. Rudoi V.V., Bolbotov G.A.

Distribution. Trans-Eurasian, temperate-subtropical. Nearest records — Kazakhstan: «встречается в Павлодарской обл. [Pavlodar Region]» [Asanova, 1986]; Russia, West Siberia: Altai Krai, «Бодр. [Bobrovsk village in the Bobrovsk forest]» [Kiritshenko, 1910], Altai Republic, «Kurai; 20 km SE Ongudai» [Vinokurov, 2007].

Ecology. Gerpetobiont; meso-xerophile, desert and steppe zones, dry meadows, clearings, floodplain meadows under herbaceous plants, shelterbelts, slopes of ravines and river terraces; zoophagous, trophically associated with Aphidoidea, larvae of Heteroptera, Coleoptera, Auchenorrhyncha, and pupa of Lepidoptera; up to 3 generations per year; overwinter adults [Putshkov, 1969; Kerzhner, 1979; Asanova, 1986; Péricart, 1998a; Esenbekova, 2013; Aukema, Hermes, 2016].

Note. This species is newly registered to the fauna of East Kazakhstan.

Geocoris (*Geocoris*) *desertorum* (Jakovlev, 1871)

Fig. 18.

Material. 2♂♂, 6♀♀ — Narymskii Ridge, Bukhtarma reservoir, Kulanzhorga natural boundary, 49°00'15"N, 83°57'37"E, 390 m a.s.l., 06.VIII.2023, coll. Rudoi V.V., Bolbotov G.A.

Distribution. Sahara-Gobian, subboreal-subtropical. Nearest records — Kazakhstan: «оз. Алаколь [Alakol lake]» [Kerzhner, 1979], Russia, East Siberia: Republic of Tuva, «Кызыл [Kyzyl city]» [Kerzhner, 1979].

Ecology. Gerpetobiont; xerophile, clayey and rocky areas, less frequently in sandy places, under *Atriplex cana* C.A.Mey., *Anabasis salsa* (C.A.Mey.) Benth. ex Volkens, *Nanophyton erinaceum* (Pall.) Bunge (Chenopodiaceae), *Artemisia arenaria* DC. (Asteraceae), in the steppe zones on dry meadows, up to 3000 m, Kudara (Tajikistan); zoophagous, trophically associated with small insects and other arthropods (Arthropoda); up to 2 generations per year; overwinter adults [Kerzhner, 1979; Péricart, 1998a; Esenbekova, 2013].

Note. This species is newly registered to the fauna of East Kazakhstan.

Rhyparochromidae Amyot et Serville, 1843

Rhyparochrominae Amyot et Serville, 1843

Drymini Stål, 1872

Drymus Fieber, 1860

Drymus (*Sylvadrymus*) Le Quesne, 1956

Drymus (*Sylvadrymus*) *sylvaticus* (Fabricius, 1775)

Material. 1♀ — Shemonaikha village, 50°37'22.3"N, 81°56'40.6"E, 307 m a.s.l., 22.V.2023, coll. Rudoi V.V.; 1♂, 1♀ — same place, 23.V.2023; 1♀ — Chernaya Uba ecovillage, right bank of Chernaya Uba River, 50°36'26.14"N, 83°48'42.41"E, 855 m a.s.l., 4.VI.2023, coll. Bolbotov G.A.; 1♀ — Bykovskiy pass, 49°47'06"N, 84°29'37"E, 652 m a.s.l., 28.V.2023,

coll. Gabdullina A.U.; 1♀ — near Katon-Karagay village, 49°11'21"N, 85°34'54"E, 990 m a.s.l., 04.VIII.2023, coll. Rudoi V.V., Bolbotov G.A.

Previous records. East Kazakhstan [Esenbekova, 2013].

Distribution. Eurasian, temperate-subtropical.

Ecology. Gerpetobiont; mesophile, in the edges and clearings of deciduous forests, in parks, near gardens, in the forest litter, up to 2500 m a.s.l.; myceto-polyphytophagous, trophically associated with seeds and sap of the primary root parts of plants and sap various mosses and fungi; one generation per year; overwinter adults [Putshkov, 1969; Péricart, 1998b; Esenbekova, 2013; Aukema, Hermes, 2016].

Eremocoris Fieber, 1860

Eremocoris abietis abietis (Linnaeus, 1758)

Fig. 19.

= *Lygaeus erraticus* Fabricius, 1794: Horváth, 1899: 277.

Material. 1♂, 1♀ — Aiyrtau Mountain, near Aiyr Lake, 49°45'17.54"N, 82°02'18.08"E, 514 m a.s.l., 30.IV.2023, coll. Bolbotov G.A.; 2♂♂ — Chernaya Uba ecovillage, foot of the Lyamin Belok Mountain, right bank of Chernaya Uba River, 50°36'26.17"N, 83°48'42.1"E, 840 m a.s.l., 5.VIII.2022, coll. Bolbotov G.A.; 1♂ — same place, 50°36'26.14"N, 83°48'42.41"E, 855 m a.s.l., 4.VI.2023, coll. Bolbotov G.A.; 1♀ — same place, 50°36'28.6"N, 83°48'44.9"E, 860 m a.s.l., 13.VII.2023, coll. Rudoi V.V., Bolbotov G.A.

Distribution. Trans-Palaearctic, temperate-subtropical. Nearest records — Kazakhstan: north part [Asanova, 1980; Péricart, 1998b], Kazakh upland [Abukenova et al., 2022], south-east part [Esenbekova, 2013]; Russia, West Siberia: Altai Krai, «Говер. [Goretovsk village]» [Kiritshenko, 1910], «Korgon Mts., Kumir river valley» [Vinokurov, Rudoi, 2022a], «Lake Kolyvanskoye» [Vinokurov, Rudoi, 2022b], Altai Republic, «20 km SE Ongudai» [Vinokurov, 2007].

Ecology. Gerpetobiont; mesophile, in conifer, deciduous and mixed coniferous forest, found up to 2400 m a.s.l.; polyphytophagous, trophically associated with Betulaceae, Ulmaceae, Oleaceae, Aceraceae etc., feeds on seeds; one generation per year; overwinter adults and larvae [Putshkov, 1969; Péricart, 1998b; Esenbekova, 2013; Aukema, Hermes, 2016].

Note. This species is newly registered to the fauna of East Kazakhstan.

Eremocoris plebejus plebejus (Fallén, 1807)

Fig. 20.

Material. 1♂ — Chernaya Uba ecovillage, foot of the Lyamin Belok Mountain, right bank of Chernaya Uba River, 50°36'26.14"N, 83°48'42.41"E, 855 m a.s.l., 4.VI.2023, coll. Bolbotov G.A.

Distribution. From Europe to Kazakhstan, subboreal-subtropical. Nearest records — Kazakhstan: Kazakh upland [Abukenova et al., 2022], Akmola Region, «Котуркуль, Шучинск [Katarkol', Shchuchinsk]» [Neimorovets, 2002], south-east part [Esenbekova, 2013].

Ecology. Gerpeto-stratobiont; mesophile, in forests of various types, more frequently in coniferous forests, in pine cones, and in the forest litter, up to 1600 m a.s.l.; polyphytophagous, trophically associated with Pinaceae, Betulaceae, Aceraceae etc.; one generation per year; overwinter adults [Putshkov, 1969; Péricart, 1998b; Esenbekova, 2013; Aukema, Hermes, 2016].

Note. This species is newly registered to the fauna of East Kazakhstan.

Gastrodes Westwood, 1840

Gastrodes grossipes grossipes (De Geer, 1773)

Fig. 21.

= *Cimex ferrugineus* Linnaeus, 1767: Reuter, 1888: 213 (junior primary homonym of *Cimex ferrugineus* Scopoli, 1763);

Material. 1♀ — South Altai Ridge, Takyr Mountain, 48°57'54"N, 86°29'43"E, 2432 m a.s.l., 25.VI.2023, coll. Rudoi V.V., Gabdullina A.U.

Distribution. Trans-Palaearctic, temperate-subtropical. Nearest records — Kazakhstan: north and south-east parts [Esenbekova, 2013]; Russia, West Siberia: Altai Republic, «Алтай: Тюдэрла [Altai: Tyudarla village]» [Kiritshenko, 1910], «Chulyshman R.» [Vinokurov, 2007].

Ecology. Gerpetobiont, in the cone of *Pinus* sp., *Picea* sp., *Abies* sp. (Pinaceae) and under the bark; mesophile; phytophagous, trophically associated with seeds Pinaceae; two generation per year; overwinter adults [Putshkov, 1969; Péricart, 1998b; Esenbekova, 2013; Aukema, Hermes, 2016].

Note. This species is newly registered to the fauna of East Kazakhstan.

***Scolopostethus* Fieber, 1860**

***Scolopostethus pilosus pilosus* Reuter, 1875**

Fig. 22.

Material. 2♀♀ — Left bank of Hamir River, 49°53'15"N, 84°23'41"E, 495 m a.s.l., 28.V.2023, coll. Gabdullina A.U.

Distribution. From Europe to Eastern Siberia and Kazakhstan, temperate-subtropical. Nearest records — Kazakhstan: south-east part [Esenbekova, 2013], Almaty Region, «Almaty» [Neimorovets, 2024], north part [Asanova, 1980]; Russia, West Siberia: Altai Krai, «Lake Kolyvanskoye» [Vinokurov, Rudoi, 2022b].

Ecology. Gerpetobiont; mesophile, in riparian woodland and forest clearings, etc.; myceto-polyphytophagous, trophically associated with plants seeds and fungal hyphae; one generation per year; overwinter adults [Putshkov, 1969; Péricart, 1998b; Esenbekova, 2013; Aukema, Hermes, 2016; Neimorovets, 2024].

Note. This species is newly registered to the fauna of East Kazakhstan.

Megalonotini J.A. Slater, 1957

***Lamprodema* Fieber, 1860**

***Lamprodema maura* (Fabricius, 1803)**

Material. 4♂♂, 8♀♀ — Narynskii Ridge, Bukhtarma reservoir, Kulanzhorga natural boundary, 49°00'15"N, 83°57'37"E, 390 m a.s.l., 06.VIII.2023, coll. Rudoi V.V., Bolbotov G.A.; 1♂ — Narynskii Ridge, 49°00'07"N, 83°57'39"E, 420 m a.s.l., 05.VIII.2023, coll. Rudoi V.V., Bolbotov G.A.; 1♀ — Ushkurmyrker Ridge, Kopyrtas River, 48°33'35"N, 86°15'28"E, 2240 m a.s.l., 22-23.VI.2023, coll. Gabdullina A.U., Bolbotov G.A.

Previous records. «3 km SE of Zhideli (Ordynka) Village; 24 km NW of Amanat Village; Ushkurmyrker Ridge» [Vinokurov et al., 2022].

Distribution. From Canada to Eurasia, subboreal-subtropical.

Ecology. Gerpetobiont; meso-xerophile, in steppe zone, flood plains, meadows, ruderal landscape, salt flats and salt-marshes, reported at Ak-Baital Pass (Tajikistan), 4663 m a.s.l.; polyphytophagous, trophically associated with plants seeds; 2–3 generations per year; overwinter adults [Putshkov, 1969; Péricart, 1998c; Esenbekova, 2013].

***Megalonotus* Fieber, 1860**

***Megalonotus antennatus* (Schilling, 1829)**

Material. 1♀ — Left bank of Hamir River, 49°53'15"N, 84°23'41"E, 495 m a.s.l., 28.V.2023, coll. Gabdullina A.U.

Previous records. «Алтайский ботсад [Altai botanical garden]» [Asanova, 1986].

Distribution. Trans-Eurasian, temperate-subtropical.

Ecology. Gerpetobiont; meso-xerophile, in forest edges and clearings, on rocky slopes, and up to 1600 m a.s.l.;

polyphytophagous, trophically associated with plants seeds; one generation per year; overwinter adults [Putshkov, 1969; Péricart, 1998c; Esenbekova, 2013; Aukema, Hermes, 2016].

***Megalonotus chiragra* (Fabricius, 1794)**

Fig. 23.

Material. 2♀♀ — Shemonaikha village, 50°37'51.1"N, 81°55'33.4"E, 333 m a.s.l., 08.V.2023, coll. Rudoi V.V.; 1♂, 1♀ — same place, 50°37'22.3"N, 81°56'40.6"E, 307 m a.s.l., 23.V.2023, coll. Rudoi V.V.

Distribution. West-Central Palaearctic, temperate-subtropical. Nearest records — Kazakhstan: central part [Esenbekova, 2013], «Semiretshye: Prjevalsk, Temirlik, Lepsinsk» [Oshanin, 1910], «пойма р. Или [floodplain of Ili river]» [Asanova, Childibaev, 1979]; Russia, West Siberia: Altai Krai, «Pavlovsk» [Vinokurov, 2007], Tigirek Strict Reserve [Rudoi et al., 2023].

Ecology. Gerpetobiont; meso-xerophile, in steppe and semi-desert zones, in lowlands, river floodplains, forest edges and clearings, as well as in foothills and mountains; polyphytophagous, trophically associated with plants seeds, prefers Chenopodiaceae; two-three generation per year; overwinter adults [Putshkov, 1969; Péricart, 1998c; Esenbekova, 2013; Aukema, Hermes, 2016].

Note. This species is newly registered to the fauna of East Kazakhstan.

***Megalonotus sabulicola* (Thomson, 1870)**

Fig. 24.

Material. 1♂ — Shemonaikha village, 50°37'51.1"N, 81°55'33.4"E, 333 m a.s.l., 05.VII.2023, coll. Rudoi V.V.

Distribution. Holarctic, temperate-subtropical. Nearest records — Kazakhstan: «Semiretshye: Targalak, Ala-kul» [Oshanin, 1910], north part [Esenbekova, 2013]; Russia, West Siberia: Kemerovo Region, Krasnobrodsk recultivated dump of open-pit coal mine [Rudoi et al., 2024].

Ecology. Gerpetobiont; meso-xerophile, in forest edges and clearings, on roadsides, among detritus in wooded areas, and also in the mountains; polyphytophagous, trophically associated with fallen seeds and sap of herbaceous; one generation per year; overwinter adults [Péricart, 1998c; Esenbekova, 2013; Aukema, Hermes, 2016].

Note. This species is newly registered to the fauna of East Kazakhstan.

Rhyparochromini Amyot et Serville, 1843

***Peritrechus* Fieber, 1860**

***Peritrechus angusticollis* (R.F. Sahlberg, 1848)**

Material. 1♀ — Sarlytan natural boundary, 48°38'59"N, 86°10'53"E, 1700 m a.s.l., 23.VI.2023, coll. Rudoi V.V., Gabdullina A.U., Bolbotov G.A.

Previous records. 24 km NW of Amanat Village [Vinokurov et al., 2022].

Distribution. Trans-Eurasian, temperate-subtropical.

Ecology. Gerpetobiont; mesophile, in humid biotopes; polyphytophagous, trophically associated with fallen seeds, one generation per year; overwinter adults [Putshkov, 1969; Péricart, 1998c; Esenbekova, 2013].

Stygnocorini Gulde, 1937

***Acompus* Fieber, 1860**

***Acompus rufipes* (Wolff, 1804)**

Material. 1♂ — Sarlytan natural boundary, 48°38'59"N, 86°10'53"E, 1700 m a.s.l., 23.VI.2023, coll. Rudoi V.V., Gabdullina A.U., Bolbotov G.A.

Previous records. Akmarbak [Aksharbak] village [Vinokurov, Rudoi, 2020a].

Distribution. Trans-Palaearctic, temperate-subtropical.

Ecology. Gerpeto-hortobiont; gigno-mesophile, in moist biotopes of the forest-steppe, forest edges and shelterbelts; narrow oligophytophagous, trophically associated with *Valeriana* sp. (Valerianaceae); one generation per year; overwinter adults [Putshkov, 1969; Péricart, 1998b; Esenbekova, 2013].

Coreoidea Leach, 1815

Stenocephalidae Dallas, 1852

Dicranocephalus Hahn, 1826

Dicranocephalus medius (Mulsant et Rey, 1870)

Fig. 25.

= *Stenocephalus sibiricus* Jakovlev, 1889: Kerzhner, 1976: 31.

Material. 1♀ — Shemonaikha village, 50°37'51.1"N, 81°55'33.4"E, 333 m a.s.l., 20.V.2023, coll. Rudoi V.V.

Distribution. Trans-Eurasian, temperate-subtropical. Nearest records — Kazakhstan: Pavlodar Region, «близ Ермака, в пойме Иртыша [near Yermak, Irtysh river floodplain]» [Asanova, 1986]; Russia, West Siberia: Altai Republic, «Дер. Тюдарла [Tyudarla village]» [Kiritschenko, 1910], «Чеповш [village]» [Kanyukova, Vinokurov, 2009].

Ecology. Hortobiont; mesophile, steppe zone in river floodplains, meadows, clearings etc.; narrow oligophytophagous, trophically associated with *Euphorbia* sp. (Euphorbiaceae); one generation per year; overwinter adult [Putshkov, 1962; Vinokurov, 1979; Esenbekova, 2013].

Note. This species is newly registered to the fauna of East Kazakhstan.

Rhopalidae Amyot et Serville, 1843

Rhopalinae Amyot et Serville, 1843

Chorosomatini Fieber, 1860

Myrmus Hahn, 1832

Myrmus glabellus Horváth, 1901

Material. 1♀ — 3 km E Chingistay village, Karazher natural boundary, 49°10'54"N, 85°54'56"E, 920 m, 28.VII.2023, coll. Rudoi V.V., Gabdullina A.U., Bolbotov G.A.

Previous records. «р. Бухтарма [Bukhtarma river]» [Putshkov, 1986; Kerzhner, 1966], East Kazakhstan [Esenbekova, 2013].

Distribution. Mongolia and the neighboring areas of southern Siberia, eastern Kazakhstan, and northern China, subboreal.

Ecology. Hortobiont; xerophile, in steppe zone; narrow oligophytophagous, trophically associated with *Agropyron* sp. (Poaceae); one generation per year; overwinter adult [Kerzhner, 1966; Kiritschenko, Kerzhner, 1972; Putshkov, 1986; Esenbekova, 2013].

Coreidae Leach, 1815

Pseudophloeinae Stål, 1868

Pseudophloeini Stål, 1868

Nemocoris R.F. Sahlberg, 1848

Nemocoris fallenii R.F. Sahlberg, 1848

Fig. 26.

Material. 2♂♂ — Left bank of Hamir River, 49°53'15"N, 84°23'41"E, 495 m a.s.l., 28.V.2023, coll. Gabdullina A.U.

Distribution. Trans-Eurasian, temperate-subtropical. Nearest records — Kazakhstan: Almaty Region, «Semirethsy: Verniy [now Almaty]» [Oshanin, 1910], central parts [Esenbekova, 2011, 2013]; Russia, West Siberia: Altai Krai, «Kolyvan', Beloe lake» [Kanyukova, Vinokurov, 2009].

Ecology. Hortobiont; mesophile; polyphytophagous, trophically associated with Fabaceae, Cyperaceae; one generation per year; overwinter adult [Putshkov, 1962; Moulet, 1995; Esenbekova, 2013].

Note. This species is newly registered to the fauna of East Kazakhstan.

Ulmicola Kirkaldy, 1909

Ulmicola spinipes (Fallén, 1807)

Material. 1♂ — Left bank of Hamir River, 49°53'15"N, 84°23'41"E, 495 m a.s.l., 28.V.2023, coll. Gabdullina A.U.

Previous records. East Kazakhstan [Esenbekova, 2011, 2013].

Distribution. Trans-Eurasian, temperate-subtropical.

Ecology. Hortobiont; mesophile, in forest-steppe and forest zones; polyphytophagous, trophically associated with *Trifolium* sp., *Melilotus* sp., *Medicago* sp. (Fabaceae); one generation per year; overwinter adult [Putshkov, 1962; Moulet, 1995; Esenbekova, 2013].

Pentatomoidea Leach, 1815

Pentatomidae Leach, 1815

Pentatominae Leach, 1815

Pentatomini Leach, 1815

Rhaphigaster Laporte, 1833

Rhaphigaster brevispina Horváth, 1889

Material. 2♂♂ — 18 km SE of Kaznakovka village, Kulundzhun sands, 48°44'21.1"N, 83°24'48.2"E, 400 m, 5.V.2022, coll. Bolbotov G.A.; 1♀ — Narymskii Ridge, Bukhtarma reservoir, Kulanzhorga natural boundary, 49°00'13"N, 83°57'37"E, 399 m, 11.VI.2022, coll. Bolbotov G.A.; 1♂ — same place, 49°00'13"N, 83°57'37"E, 399 m, 06.VII.2022, coll. Bolbotov G.A.; 1♂, 1♀ — 49°00'15"N, 83°57'37"E, 390 m, 06.VIII.2023, coll. Rudoi V.V., Bolbotov G.A.; 1♂ — Narymskii Ridge, 49°00'07"N, 83°57'39"E, 420 m, 05.VIII.2023, coll. Rudoi V.V., Bolbotov G.A.

Previous records. «с. Калгуты, Буран, Урдзар (колхоз Ленина) [Kalguty, Buran and Urdzhar (Lenin Collective farm) villages]» [Asanova, 1986], east part [Esenbekova, 2013].

Distribution. West-Central Asian, subboreal-subtropical.

Ecology. Dendrobiont; mesophile, in forest zone; polyphytophagous, trophically associated with plants seeds of Salicaceae, Elaeagneceae, Ulmaceae; one generation per year; overwinter adult [Putshkov, 1965; Asanova, 1986; Esenbekova, 2013].

Strachiini Mulsant et Rey, 1866

Bagrada Stål, 1862

Bagrada (Nitilia) Mulsant et Rey, 1866

Bagrada (Nitilia) stolidia (Herrich-Schaeffer, 1839)

= *Bagrada stolidia* Horváth, 1936: Péricart, 2004: 372.

Material. 1♀ — Bukhtarma reservoir, 4.5 km E of Novostroika village, 49°04'11.4"N, 83°55'36.7"E, 403 m, 05.VII.2022, coll. Bolbotov G.A.

Previous records. «На востоке республики местами нередок» [In some place of East Kazakhstan is note rare] [Asanova, 1986], East Kazakhstan [Esenbekova, 2013].

Distribution. Mediterranean and Irano-Turanian, subboreal-subtropical.

Ecology. Hortobiont; mesophile, in steppe zone; narrow oligophytophagous, trophically associated with *Alyssum* sp. (Brassicaceae); in Kazakhstan one generation per year, in Ukraine 2–3 generation per year; overwinter adult [Putshkov, 1961, 1965; Esenbekova, 2013; Vinokurov, Rudoi, 2020b].

Podopinae Amyot et Serville, 1843

Graphosomatini Mulsant et Rey, 1865

Graphosoma Laporte, 1833

Graphosoma (Graphosoma) Laporte, 1833

Graphosoma (Graphosoma) consimile Horváth, 1903

Material. 1♂, 1♀ — [on the label] Курчумский р-н, г. Караберик [Kurchum district, Karaberik Mountain], 17.VI.2006, coll. В.К. Зинченко

New data on the fauna of the infraorder Pentatomomorpha from East Kazakhstan

[Zinchenko V.K.] (ISEA); 1♂ — [on the label] Манрак, р. Тайгиндзын [Manrak Mountain Ridge, Taygindzyn River], 19.VI.1984, coll. Стариков [Starikov S.V.] (ISEA).

Distribution. West-Middle Asian, subboreal-subtropical. Nearest records — «Семипалатинская обл. – Урджарский р-н, Тарбагатай (Алексеевка) [Semey [now Abai] Region – Urdzhar district, Tarbagatai (Aleksееvka)]» [Asanova, 1986].

Ecology. Hortobiont; mesophile, found both in plains and in mountains, up to 3000–3500 m a.s.l.; wide oligophytophagous, trophically associated with Apiaceae; one generation per year; overwinter adult [Putshkov, 1965; Petrova, 1980; Esenbekova, 2013].

Note. This species is newly registered to the fauna of East Kazakhstan.

Sternodontus Mulsant et Rey, 1856

Sternodontus binodulus Jakovlev, 1893

Sternodontus binodulus Jakovlev, 1893: Vinokurov et al., 2010: 268;

Sternodontus similis Stål, 1854: Jakovlev, 1893: 286; Kulik, 1965: 142, 159; Vinokurov, 1979: 213.

Material. 1♂ — [on the label] Пр. б. р. Аягус, 26 км ниже г. Аягус [right bank Ayagus River, 26 km S Ayagus village], 19.VI.1986, М. Сергеева [coll. Sergeeva M.] (ISEA); 1♀ — Ushkurmyner Ridge, Kopyrtas River, 48°33'35"N, 86°15'28"E, 2240 m, 22–23.VI.2023, coll. Gabdullina A.U., Bolbotov G.A.

Previous records. «Семипалатинская, Канонерский лесхоз [Semey [now Abai] Region, Kanonersk forestry]» [Vinokurov, 1983].

Distribution. From south European part of Russia to Kazakhstan and Lena River, in Europe recorded from Hungary, temperate.

Ecology. Hortobiont; mesophile, in steppe zone; wide oligophytophagous, trophically associated with Apiaceae; one generation per year; overwinter adult [Kulik, 1965; Putshkov, 1965; Vinokurov, 1979; Esenbekova, 2013]. The collection from the snowfield on the Ushkurmyner Ridge at 2240 m is most likely an incidental due to air flow.

Tholagmus Stål, 1860

Tholagmus breviceps Jakovlev, 1883

= *Tholagmus nigricornis* Reuter, 1900: Linnavuori, 1984: 6.

Material. 1♂, 2♀♀ — / *Tholagmus nigricornis* / [on the label] Пр. б. р. Аягус, 26 км ниже г. Аягус [right bank Ayagus River, 26 km S Ayagus village], 19.VI.1986, М. Сергеева [coll. Sergeeva M.] (ISEA).

Distribution. West-Middle Asian, subboreal-subtropical. Nearest records — Kazakhstan: «Wernoi [Almaty]» [Jakovlev, 1883].

Ecology. Hortobiont; mesophile, in steppe zone and foothills; wide oligophytophagous, trophically associated with Apiaceae; one generation per year; overwinter adult [Putshkov, 1965; Esenbekova, 2013].

Note. This species is newly registered to the fauna of East Kazakhstan. North-easternmost find of this species.

Tholagmus flavolineatus (Fabricius, 1798)

Fig. 27.

= *Tholagmus confinis* Horváth, 1898: Linnavuori, 1984: 6.

Material. 1♂ — 5 km SE of Kuygan village, Naryn Mountain Ridge, 48°38'29"N, 83°32'31"E, 460 m, 21.VI.2023, coll. Rudoi V.V., Gabdullina A.U., Bolbotov G.A.

Distribution. West Palaearctic and Middle Asian, subboreal-subtropical. Nearest records — «Целиноградская обл., Карагандинская обл., в пустынной зоне (Бетпак-Дала) [Tselinograd [now Akmola] Region; Karaganda Region; in the

desert zone (Бетпак-Дала)]» [Asanova, 1962], «близ станции Илийск; в желудке у реликтовой чайки у озера Алакуль [near the Iliysk station; in the stomach of a relic gull at Lake Alakol]» [Asanova, Childibaev, 1979], «повсюду, кроме севера и востока [in Kazakhstan widespread, except north and east]» (Esenbekova, 2013).

Ecology. Hortobiont; meso-xerophile, steppe and semi-desert zones, also in floodplain meadows up to 800–1300 m a.s.l.; wide oligophytophagous, trophically associated with Apiaceae; one generation per year; overwinter adult [Putshkov, 1965; Esenbekova, 2013].

Note. This species is newly registered to the fauna of East Kazakhstan.

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