


New data on Corixidae and Hebridae (Heteroptera) of Kazakhstan

Новые данные о Corixidae и Hebridae (Heteroptera) Казахстана

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Abstract. The species *Sigara (Subsigara) oxiana* Jansson, 1983 (Corixidae) is recorded for the first time from Kazakhstan. New data on the distribution of two species, which are rare in Kazakhstan, *Sigara (Subsigara) fossarum* (Leach, 1817) and *Hebrus (Hebrus) pilipes* Kanyukova, 1997 (Hebridae) are also provided. Additional data on sampling localities of *Callicorixa producta producta* (Reuter, 1880), *Corixa affinis* Leach, 1817 and *Corixa punctata* (Illiger, 1807) in Kazakhstan are reported. Additions to the bibliography on aquatic and semiaquatic heteropterans of the Kazakh fauna are given.

Резюме. Впервые для фауны Казахстана указан вид *Sigara (Subsigara) oxiana* Jansson, 1983 (Corixidae). Приводятся данные о распространении двух других редких в Казахстане видов: *Sigara (Subsigara) fossarum* (Leach, 1817) и *Hebrus (Hebrus) pilipes* Канюкова, 1997 (Hebridae). Приведены дополнительные данные о местах находок в Казахстане видов *Callicorixa producta producta* (Reuter, 1880), *Corixa affinis* Leach, 1817 и *Corixa punctata* (Illiger, 1807). Приведены дополнения к библиографии по водным и околводным полужесткокрылым фауны Казахстана.

Key words: Kazakhstan, Heteroptera, Corixidae, Hebridae, new and additional records

Ключевые слова: Казахстан, Heteroptera, Corixidae, Hebridae, новые и дополнительные находки

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Introduction

The first three species of water bugs from Kazakhstan were recorded by Nikolsky & Volk (1948). The foundation for the study of the heteropterofauna in Kazakhstan was laid by Kiritshen-

ko (1954) who published a large list containing new and improved data on 29 species of water bugs (Nepomorpha and Gerromorpha) from western Kazakhstan. This list was based on the material collected in the middle and lower reaches of the Ural River from Orsk in the north and up to Atyrau (formerly Guryev) in the south. A bibliography on water bugs of the country was published

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among a large overview of the main publications on insects in Kazakhstan and adjacent territories (Kazenas & Romanenko, 2006–2007). This overview can be supplemented by omitted and later publications, such as Asanova (1962), Devyatkov (2010, 2014, 2015); Esenbekova (2008a, 2008b, 2013); Esenbekova et al. (2012, 2015); Jaczewski (1962a, 1962b, 1963a, 1963b, 1964); Kanyukova (1973a, 1973b, 1976, 1980a, 1980b, 1997, 2006); Kerzhner (1977); Lopatin et al. (2007); Tleppaeva (1999); and Wróblewski (1963).

In this article, we present the first record of *Sigara (Subsigara) oxiana* Jansson, 1983 (Corixidae) for the fauna of Kazakhstan, new data on the distribution of the two species which are rare in the country, *S. (S.) fossarum* (Leach, 1817) (Corixidae) and *Hebrus (Hebrus) pilipes* Kanyukova, 1997 (Hebridae), and also additional data on *Callicorixa producta producta* (Reuter, 1880), *Corixa affinis* Leach, 1817 and *C. punctata* (Illiger, 1807) (Corixidae).

Material and methods

The material examined was collected in August 2019 in southern Kazakhstan in the Aksu-Zhabagly Nature Reserve (Turkistan Province) and in its immediate vicinity. Investigated water bodies are located in the foothill part of the Western Tien Shan and belong to the basin of the upper reaches of the Arys River (basin of the Syr Darya River). The investigated rivers are mountainous, rather narrow and turbulent (Fig. 7 as Electronic supplementary material, see the section “Addenda”). There are small artificial reservoirs in settlements in the floodplains of rivers. The material was collected from water using an aquatic net: by sweeping aquatic vegetation and from the water column. Specimens were also collected on the banks by hand, and also from moss samples using Tullgren funnels. The material was collected by V. Stolbov and S. Sheykin and identified by E. Kanyukova and S. Ivanov. Most of the specimens examined are kept at the Zoological Institute of the Russian Academy of Sciences, St Petersburg (ZISP) and at the Zoological Museum of Tyumen State University (ZMTU); the specimen of *Sigara fossarum* is kept at the Zoological Museum of Moscow State University (ZMUM).

Results

Family **Corixidae** Leach, 1815

Sigara (Subsigara) fossarum (Leach, 1817)

Material examined. **Kazakhstan**, *Akmola Prov.*, Shortandy Settlm., 12.VIII.1937, collector unknown, 1 female, T. Jaczewski det. (ZMUM).

Bionomics. This corixid lives in various floodplain water bodies. It can be found among plants in sections of streams or rivers with a weak current, sometimes in peat water bodies (Kanyukova, 2006).

Distribution. The species is known from Northern, Central and Southern Europe, except for the highlands. In European Russia, it is omnipresent; in the north, it reaches the Murmansk and Arkhangelsk provinces; in the south, it is recorded from the North Caucasus and the Orenburg Province. In the Asian part of Russia, it is distributed in Western Siberia (from the Khanty-Mansi Autonomous District to the south of the Novosibirsk Province and to the Altai Republic) and Eastern Siberia (from the middle part of the Krasnoyarsk Territory to Buryatia and Central Yakutia) (Jansson, 1995; Kanyukova, 2006).

Note. The material presented here is the only reliable finding of the species from northern Kazakhstan (Fig. 6). Previously, the species was registered for this territory from the mentioned specimen without specifying the collecting locality (Kanyukova, 2006). The nearest record of *S. fossarum* is known from the south of the Novosibirsk Province, namely the floodplain of the Chingis River (Kanyukova, 1973), where the species was collected at light on 21–22 June 1960.

Sigara (Subsigara) oxiana Jansson, 1983 (Figs 1–3)

Material examined. **Kazakhstan**, *Turkistan Prov.*, Tulkibas Distr., Shakpak baba Vill., pond on Arys River, 42°30'42"N, 70°35'21"E, 1060 m, 12.VIII.2019, V. Stolbov leg., 1 male, 10 females, 5 nymphs presumably of IV and V instars (ZISP, ZMTU).

Bionomics. The species was collected in a small artificial reservoir on the Arys River (Fig. 6), in the village. The depth of the pond at the sampling site was more than one metre, the bottom was rocky with a small amount of detritus, and the water contained single plants of *Persicaria amphibia*



Figs 1–3. *Sigara oxiana* Jansson, 1983 from the village of Shakpak baba. 1, habitus; 2, anterior part of body; 3, magnified view of pala. The angular dorsal margin of the pala proximally is shown by the arrow.

(L.) Gray and an abundance of planktonic algae, which corresponded to the state of bloom.

Distribution. The species is known from Tajikistan and Turkmenistan. In Uzbekistan, it is found in the basin of the Amu Darya River; in the north, it reaches the Aral Sea. Here the species is recorded from Kazakhstan for the first time.

Note on species identification. The species has intermediate characters of the two congeners, *S. (S.) fossarum* and *S. (S.) falleni* (Fieber, 1848), which are also distributed in Kazakhstan. Jansson (1983) pointed out the following in the description of *S. oxiana*: “Pala roughly intermediate between those of *S. (S.) fossarum* and *S. (S.) falleni*, differing from the former in having the pegs in two rows, although the space between the rows is rather small, and from the latter in having the dorsal edge of the pala proximally angular instead of roundish. The pala of *S. oxiana* is also clearly broader distally than that of *S. (S.) fossarum* or *S. (S.) falleni*”. The habitus and pala of the specimen examined are shown in Figs 1–3. We also confirm that this specimen has a longitudinal row of short spines on the dorsal surface of the hind femora, a rudimentary strigil, and other diagnostic characters corresponding to *S. oxiana*.

Additional data on the distribution of some other corixid species in Kazakhstan

When the chapter on corixids of the Catalogue of the Heteroptera of the Palaearctic Region (Jansson, 1995) was under preparation, the first author proposed to include in this chapter the data on the distribution of three more species from Kazakhstan, based on the material from the collection of ZISP. The complete data of these records have not yet been published. Here we present the localities where these species were found (Fig. 6): *Callicorixa producta producta* (Reuter, 1880): East Kazakhstan Province, Chekil'mes Hill, northern shore of Lake Zaysan [no specimen with such a label has been found in the collection of ZISP at present]; *Corixa affinis* Leach, 1817: Turkistan Province, station Sary-agach [Saryagash], VIII.1924, Prinada leg., 30 specimens, 19–21.V.1925, the same collector, 1 specimen; *Corixa punctata* (Illiger, 1807): Turkistan Province, station Sary-agach [Saryagash], VIII.1924, Prinada leg., 2 specimens. The latter species was also recorded from the Chernyy Irtysh River (East Kazakhstan Province) by Devyatkov (2010) and from the Kon River (Karaganda Province) by Esenbekova (2008b) (Fig. 6). Probably these three species are distributed locally in Kazakhstan.



Figs 4, 5. *Hebrus pilipes* Kanyukova, 1997 from Aksu-Zhabagly Nature Reserve, dark (4) and pale (5) forms.

Family **Hebridae** Amyot et Serville, 1843

Hebrus (Hebrus) pilipes Kanyukova, 1997 (Figs 4, 5)

Material examined. **Kazakhstan**, *Turkistan Prov.*, Tulkibas Distr., Aksu-Zhabagly Nature Reserve, Taldybulak River, 42°24'04"N, 70°28'14"E, 1450 m, 10.VIII.2019, S. Sheykin leg., 2 females (ZMTU).

Bionomics. The specimens of this species were found on the banks of a small mountain river with a turbulent current and rapids (Fig. 7 as Electronic supplementary material, see the "Addenda" section) and were collected from mosses among the stones using Tullgren funnels.

Judging by the dates of collection of South Russian and Middle Asian* specimens stored in the ZISP collection, *H. pilipes* occurs from early spring to late summer. According to Kanyukova (1997), the specimens collected in the Crimea across years are dated from 7 May to 29 August, in the Krasnodar Territory, from 24 April to 26 September, in Turkmenistan, on 19–30 October. In 1943–1944, Kiritshenko (1964) collected the species in Tajikistan along the banks of streams even in winter months, from 19 January to 29 August.

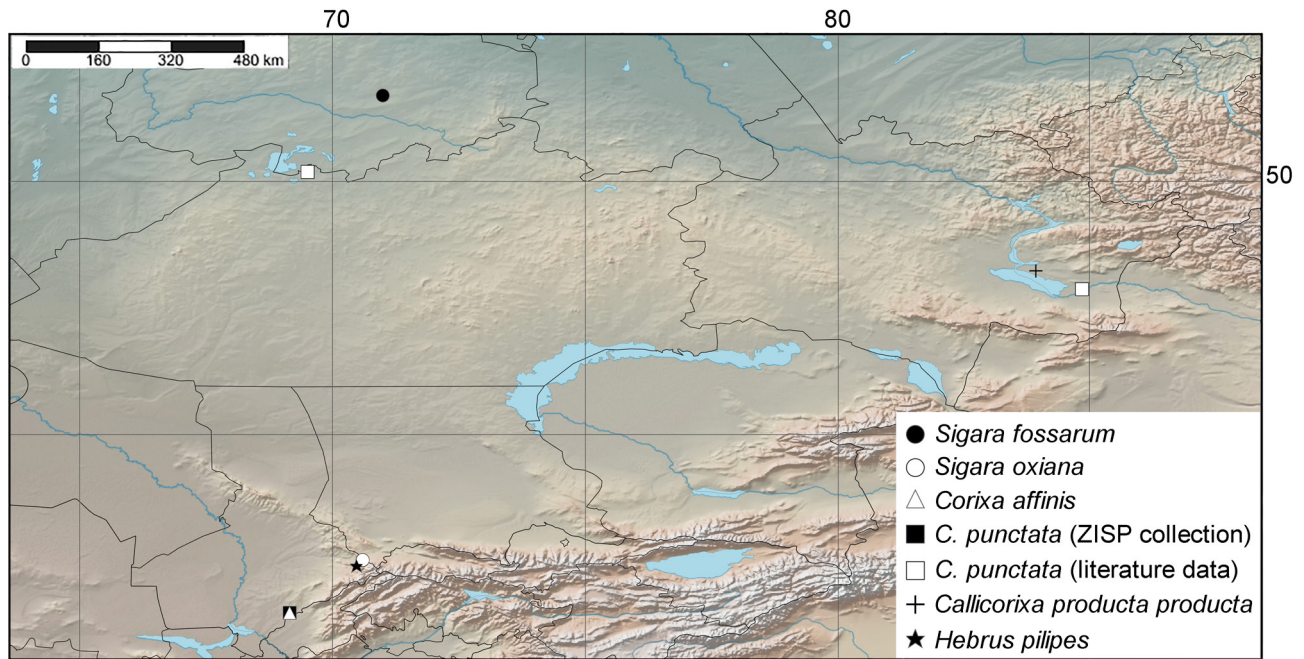
Distribution. South of Russia: Astrakhan Province, Crimea, North Caucasus: Krasnodar Ter-

ritory and the Republic of Adygea. Known from Transcaucasia, Turkey and Iran. In Middle Asia, the species range extends eastward to Tajikistan (Kanyukova, 1997, 2006). The only female from the vicinity of Kyzylorda (Fig. 6), collected on 1 July 1973 by Asanova was recorded by the first author from Kazakhstan (Kanyukova, 1997).

Note. Along with *H. pilipes* distributed in the south, another species of the genus, *H. (Hebrus) pusillus* (Fallén, 1807), was recorded in the north (Kokshetau) and the east of Kazakhstan (Bolshaya Bukon' River). In the southern and eastern regions of the country, a third species, *H. (Hebrusella) ruficeps* Thomson, 1871, is known. Before the revision of the genus, specimens of *H. pilipes* from the south of the former USSR, in particular from the Astrakhan Province and the Crimea (Jakovlev, 1871, 1906), were erroneously indicated as *H. pusillus*, and those from Tajikistan and Turkmenistan, as *H. pusillus* and *H. montanus* Kolenati, 1857 (Kiritshenko, 1964).

Two collected females differ in colour: one of them is dark, another is pale (Figs 4, 5). *Hebrus pilipes* differs from the closely-related *H. pusillus*, which is widespread in northern Kazakhstan, in the yellow colour of the first and second segments of the antennae and legs, as well as in the structural characters of the tibia of the male hind legs, which are noticeably thickened in the middle and densely pubescent, they have a row

* The term "Middle Asia" is used in this article for the region comprising Kyrgyzstan, Tajikistan, Turkmenistan and Uzbekistan.



Figs 6. Collecting localities of new and additional records of water bugs in Kazakhstan.

of long setae on the upper side, and several rows of shorter and thicker setae on the inner side (Kanyukova, 1997). In *H. pusillus*, the antennae and legs are mostly brown, the hind tibiae are not thickened and do not have dense pubescence.

Addenda

Electronic supplementary material.

Fig. 7. Taldybulak River, collecting locality of *Hebrus pilipes*. File format: JPEG. Available from: <https://doi.org/10.31610/zsr/2021.30.2.339>

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