HOKKAIDO UNIVERSITY

Title	A Checklist of Heteroptera of the Kuril Islands and Brief Zoogeographical Survey of the Fauna
Author(s)	Kanyukova, Elena V.; Marusik, Yuri M.
Description	Biodiversity and Biogeography of the Kuril Islands and Sakhalin vol.2
Citation	北海道大学総合博物館研究報告, 3, 161-174
Issue Date	2006-03
Doc URL	https://hdl.handle.net/2115/47799
Type	departmental bulletin paper
File Information	v. 2-10.pdf

Hokkaido University Collection of Scholarly and Academic Papers : HUSCAP

Biodiversity and Biogeography of the Kuril Islands and Sakhalin (2006) 2, 161-174.

A Checklist of Heteroptera of the Kuril Islands and Brief Zoogeographical Survey of the Fauna

Elena V. Kanyukova[1] and Yuri M. Marusik[2]

[1] *Institute of Biology and Soil Science, Russian Academy of Sciences, 100-letia Vladivostoka pr. 159, Vladivostok 690022, Russia. E-mail: kanyuk@mail.primorye.ru*; [2] *Institute for Biological Problems of the North, Russian Academy of Sciences, Portovaya Str. 18, Magadan 685010, Russia. E-mail: yurmar@mail.ru*

Abstract A list of Heteroptera species found in the Kuril Islands, a history of investigation and brief zoogeographical analysis are presented. Heteroptera were found on 24 islands of 30 studied. The check-list encompasses 236 species belonging to 27 families. The number of species found on individual islands ranges from 1 to 218 (Kunashir). The fauna of the southern islands is much more diverse than that of the northern islands. The fauna of the Kuril Islands is more diverse than the faunas of Kamchatka (110) and Sakhalin (226), but much less diverse than the fauna of Hokkaido (450). Ninety-eight species occurring in the Kuril Islands have wide ranges, 98 species are restricted in their distribution to southeast Palaearctic, and 40 species have exclusively island ranges, occurring only in the Kurils and adjacent islands. Only one species of bugs is known to occur exclusively in the Kuril Islands: *Aneurillodes glaberrimus* Kerzhner, 1979.

Key words: Heteroptera, true bugs, Kuril Islands, check-list, zoogeography

Introduction

The first Heteroptera from the Kuril Islands was reported by Matsumura (1926a, b) who described a new species *Nabis kurilensis* (=*Himacerus dauricus* (Kiritshenko, 1911)). Then Kuwayama (1967) listed 49 species from the South Kurils, some of which were identified to the generic level. These species were identified by S. Miyamoto. Later several species were reported from the Kurils by Kiritshenko (1955, 1959), Konakov (1956), Kerzhner (1962, 1964, 1968, 1972a,b, 1977), and Petrova (1972, 1976). The Kuril Islands' fauna of true bugs was first summarized by Krivolutskaya (1973), who listed 128 species in her book. A check-list was prepared by Kerzhner (1978) and the number of species listed from the Archipelago reached 219. After this paper a few additional species were recorded by Kerzhner & Kanyukova (1983) and Kerzhner (1987a).

Before the International Kuril Island Project (IKIP) began in 1994, Heteroptera were known from 11 islands (Kunashir – 208, Tanfilyeva –2, Iuriy – 4, Zelyoniy – 7, Shikotan – 76, Iturup – 55, Urup – 9, Simushir – 2, Paramushir – 6, Shumshu – 1 and Atlasova – 4).

After the second-year expedition of the IKIP, in 1995, bugs were collected on two southern islands (Kunashir and Iturup), and in 6 Middle Kuril Islands. Bugs were collected for the first time from 4 islands, Chirpoi, Ketoi, Matua and Rasshua. Material from this expedition was described by Kerzhner & Marusik (1997) and an updated list of Kuril Heteroptera including 230 species was published.

The latest list of the Kuril Islands Heteroptera was prepared after the IKIP ended (Kerzhner *et al.* 2004). This list contains information about 236 species belonging to 27 families found on 24 islands.

Materials and Methods

The present paper is based on the latest list (Kerzhner *et al.* 2004), and includes most recent taxonomical changes made after that publication.

By the term Holarctic we mean the biogeographic area lying in the northern Hemisphere approximately north of 30°N. The Palaearctic region is the Old World (Eurasia) part of the Holarctic. The south-east part of the Palaearctic (Central-north-east China, Russian Far East south of Amur River, Korea, most of Japan) has been referred to by several different biogeographic names, including Palaearchearctic and Manchurian. Here we use two terms, south-east Palaearctic and Manchurian.

NES – northeast Siberia
Kam – Kamchatka
TiS – Tien-Shang

Islands are abbreviated in the manner adopted by the IKIP:	Abbreviation of islands in accordance with their geographical position (south-north) (see Fig. 1)
AL Atlasova	AU Anuchina
AN Antsiferova	IU Iurii
AU Anuchina	TA Tanfileva
BC Brat Chirpoyev	ZE Zelyonyi
BR Broutona	PO Polonskovo
CH Chirpoi	SH Shikotan
CR Chirinkotan	KU Kunashir
EK Ekarma	IT Iturup
IT Iturup	UR Urup
IU Iurii	BC Brat Chirpoyev
KE Ketoi	CH Chirpoi
KH Kharimkotan	BR Broutona
KU Kunashir	SI Simushir
LV Lovushki Rocks	KE Ketoi
MA Matua	US Yankicha (Ushishir arch.)
MK Makanrushi	RY Ryponkicha (Ushishir arch.)
ON Onekotan	RA Rasshua
PA Paramushir	MA Matua
PO Polonskovo	RK Raikoke
RA Rasshua	LV Lovushki Rocks
RK Raikoke	SA Shiashkotan
RY Ryponkicha (Ushishir arch.)	EK Ekarma
SA Shiashkotan	CR Chirinkotan
SH Shikotan	KH Kharimkotan
SI Simushir	ON Onekotan
SU Shumshu	MK Makanrushi
TA Tanfileva	PA Paramushir
UR Urup	AN Antsiferova
US Yankicha (Ushishir arch.)	SU Shumshu
ZE Zelyonyi	AL Atlasova

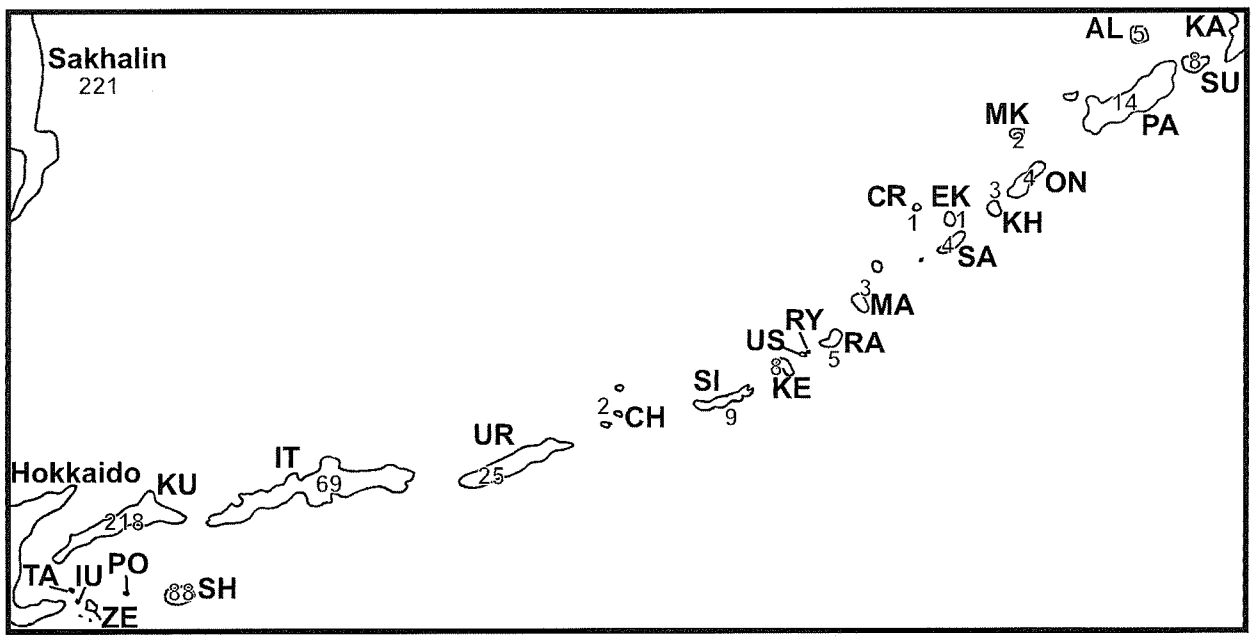


Figure 1. Related position of Kuril Island to each other, adjacent areas and species diversity of islands (number of species on smaller Habomai not shown).

Table 1. Number of species on each island.

IU	8	CH	2	EK	1
TA	10	SI	9	CR	1
ZE	11	KE	8	KH	3
PO	9	US	2	ON	4
SH	88	RY	1	MK	2
KU	218	RA	5	PA	14
IT	69	MA	3	SU	8
UR	25	SA	4	AL	5

Pal. – Palaearctic
Hol. – Holarctic
Man. – Manchurian = southeast Palaearctic
Sib. – Siberian
Jap. – Japan
Kur. – Kurils

Results

Among the 30 islands and rocks studied true bugs were collected on 24 islands (Table 1). Heteropterans were not found on the following islands: Antsiferova, Anuchina, Brat Chirpoyev, Broutona, Lovushki Rocks, and Raikoke. These islands were visited for short periods of time, often only a few hours, and most probably lack of material from them was a result of inadequate collecting time. Before the IKIP project, bugs were known from only eleven islands.

Altogether 236 species belonging to 27 families have been found on the Archipelago. Species diversity of all families is shown in Table 2. Checklist and distribution of species within the Archipelago, whole geographical range and species richness of each island are shown in Table 6. The most diverse families are Miridae and Lygaeidae with 93 and 31 species respectively. Six families have between 10 and 13 species. All other families are represented by less than 7 species.

More than half (119) of all species found in the Kuril Islands were found on one island only (see Table 3). Most of these species are restricted to Kunashir (111) (see Table 6), 6 species are known from Shikotan and two species are restricted to Iturup. None of the island-specific species were found on the Middle and Northern islands and islands south of Shikotan. A total of 212 species are known exclusively from the South Kuriles. Fifty-three species have been collected on two islands, 33 on three islands. Only 31 species can be treated as more or less widespread in the Archipelago. They were found from 4 to 15 islands. The most widespread species is *Irbisia sericans* (Stål, 1858). It was found on 15 islands belonging to the middle and north groups of islands. The second most widespread species, found on 12 islands, is *Arctocorisa kurilensis* Jansson, 1979. It occurs from Kunashir to Shumshu.

Table 2. Species diversity of the Heteroptera families found on the Kuril Islands and diversity of families in Sakhalin.

Family	Kuril Islands	species in common	Sakhalin
1. Acanthosomatidae	10	7	10
2. Alydidae	1	1	2
3. Anthocoridae	11	6	10
4. Aradidae	12	6	9–10
5. Berytidae	1	1	1
6. Ceratocombidae	3		–
7. Cimicidae	1	1	1
8. Corixidae	5	5	8
9. Cydnidae	4		–
10. Gerridae	6	5	9
11. Hydrometridae	1		–
12. Lygaeidae	31	17	25
13. Mesoveliidae	1	1	2
14. Microphysidae	2	1	1
15. Miridae	93	62	91
16. Nabidae	11	5	6
17. Nepidae	1		–
18. Notonectidae	1	0	1
19. Ochteridae	1		–
20. Pentatomidae	13	10	18
21. Pyrrhocoridae	1	1	1?
22. Reduviidae	4	2	4
23. Rhopalidae	2	2	4
24. Saldidae	11	8	13
25. Tingidae	6	2	4
26. Urostylididae	1	0	1
27. Veliidae	2	1	2
Belostomatidae	–		2
Coreidae	–		2
Total	236	144	226–8

Table 3. Abundance (dispersal) of species in Kuril archipelago.

No. of species	No. of islands on which was found
119	1
53	2
33	3
10	4 & 5
3	6 & 8
1	7, 9, 11, 12, &15

Only 19 species are known from more than one island group (Table 4). Fifteen were found in two island groups: South and Middle, South and North, and Middle and North. Only 4 species have been found in all island groups.

Sixteen species were found on the Middle Kurils and same number are known from the northern group of islands. Nine species are common to the Middle and Northern Kurils.

Two species, *Acalypta marginata* (Wolff, 1804) and *Myrmedobia distinguenda* Reuter, 1884 are known from the Middle Kurils only. One species is restricted exclusively to the Northern group of islands: *Teratocoris saundersi* Douglas & Scott, 1869.

According to the distribution of Heteroptera the most well defined boundary lies between Urup and Chirpoi islands. For 13 species, Urup is a northernmost island in Archipelago, and two more species have a gap between Urup and the northern group of Islands. In addition, two "northern" species penetrate Chirpoi, but do not reach Urup. Thus Urup-Chirpoi boundary is supported by 17 species (Fig. 2).

Among those species restricted to the southern group of islands and known from more than one island 33 species do not occur north of Kunashir (not penetrating Iturup). Iturup is a northernmost island on Archipelago for 46 species (Fig. 2).

It is worth mentioning that although Iturup and Urup have different numbers of species indicating the northern boundary, 46 and 15 respectively, the value of these species are equal (66% and 60% reciprocally). According to northern species, the boundary Chirpoi/Urup is better defined by 2 species. Only one northern species indicates a Urup/Iturup boundary (Fig. 2).

Range analysis and comparison with adjacent areas

Eighty-two species or one third of all species (35%) have wide ranges, either Cosmopolitan (1), Holarctic (25) or Palaearctic (56). Another 15 species have fairly large ranges and are distributed in Siberia and south-east Palaearctic (Table 5). Three species are restricted to south-east Palaearctic and Cisokhotia. More than half of all species (133 species or 56%) found in the Kurils are limited in their distribution to south-east Palaearctic (=Palaearchearctic). Most of them (92) are widely distributed in the region and known from China, Korea, Russian Far East (Ussuri-Amur area) and adjacent islands (Japan, Kurils, Sakhalin).

Fourty species have exclusively island ranges.

Six species are known exclusively from the Kurils.

Table 4. Distribution of most spread species found in more than one island group. 1– number of islands, 2– number of island groups.

Species	IU	TA	ZE	PO	SH	KU	IT	UR	CH	SI	KE	US	RY	RA	MA	SA	EK	CR	KH	ON	MK	PA	SU	AL	1	2
Irbisia sericans									●	●	●	●	●	●	●	●	●	●	●	●		●	●	●	15	2
Arctocorisa kurilensis						●		●			●			●	●	●			●	●	●	●	●	●	12	3
Europiella artemisiae	●	●	●	●	●	●	●	●														●	●	●	11	2
Apolygus lucorum	●	●	●	●	●	●	●	●		●															9	2
Acompocoris brevirostris						●	●	●		●	●					●						●	●		8	3
Apolygus nigrovirens		●	●	●	●	●	●	●		●															8	2
Apolygus spinolae		●	●		●	●	●	●		●															7	2
Mecomma ambulans								●		●	●			●								●			5	3
Saldula opacula						●	●				●											●	●		5	3
Stenodema calcarata				●	●	●	●				●														5	2
Trigonotylus caelestialium						●	●	●				●				●									5	2
Saldula saltatoria					●	●														●		●	●		5	2
Bothynotus pilosus						●								●					●			●			4	2
Bryocoris montanus					●	●		●		●															4	2
Saldula palustris					●	●	●														●				4	2
Salda littoralis						●	●															●	●		4	2
Nysius groenlandicus																●						●		●	3	2
Macrosaldula rivularia								●														●			2	2
Saldulafucicola						●																●			2	2

Table 5. Number of species with different ranges.

range name	no of species	no of species
Cosmopolitan		1
Holarctic		25
Palaearctic	98	56
Siberio-Manchurian		15
T-Shang & Manchuria		1
NE Siberia & Manchuria		1
Cisokhotia-Manchuria		1
Cisokhotian	98	2
Kamchatka-Manchurian		1
Manchurian		93
Sakhalin-Kurils-Japan		17
Kurils-Japan		17
Kunashir-Sakhalin	40	4
Kurils-Sakhalin		1
S. Kurils		1
		236

Four of them are restricted to Kunashir: *Harpocera orientalis* Kerzhner, 1979, *Pachylygus festivus* (Kerzhner, 1977), *P. nigrescens* (Kerzhner 1977) and *Paraneurus galiae* (Kerzhner, 1979). One was found only on Shikotan: *Teratocoris depressus* Kerzhner, 1979. One species is known from three southern islands: *Aneurillodes glaberrimus* (Kerzhner, 1979) (Shikotan, Kunashir & Iturup).

Although *Acalypta marginata* (Wolff, 1804) has a trans-Palaearctic range it is found only on the middle group of islands and is unknown from the south or north Kurils. Another species restricted to the Middle Kurils, has a Euro-Siberian range, *Myrmedobia distinguenda* Reuter, 1884. It is unknown from south-east Palaearctic. Among the few species restricted to the north and north-middle group of islands *Callicorixa producta* (Reuter, 1880), *Nysius groenlandicus* (Zetterstedt, 1838), *Teratocoris saundersi* Douglas & Scott, 1869 and *Macrosaldula rivularia* (J. Sahlberg, 1878) have Holarctic ranges. Another species, *Mecomma ambulans* (Fallén, 1807) has a Palaearctic (Euro-Siberian) distribution. All these species are unknown from south-east Palaearctic.

In comparison to adjacent Sakhalin the known fauna of Heteroptera on the Kuril Islands is more diverse although Sakhalin has larger size (Table 2). Only 221 species of Heteroptera are known, so far, from Sakhalin (Kerzhner 1978; Kanyukova & Kerzhner 1981; Kanyukova 1981, 2003). The diversity of families in Sakhalin is also smaller: 23 in comparison to 27 in the Kurils (Table 1). The fauna of the south Kurils has more southern elements than those of Sakhalin. It is very likely that the fauna of Sakhalin is richer than the fauna of Kurils, but less studied.

In general, two faunas have similarity 66%, although similarity of separate families ranges from 0% to 100%.

The Kamchatka Peninsula and Hokkaido Island, other adjacent areas, have 110 (Kerzhner 1987b) and around 450 species (Vinokurov personal communication) respectively. Although there is a large difference in species diversity between the Kuril Islands and Hokkaido, the fauna of Hokkaido has only two families more (29 altogether).

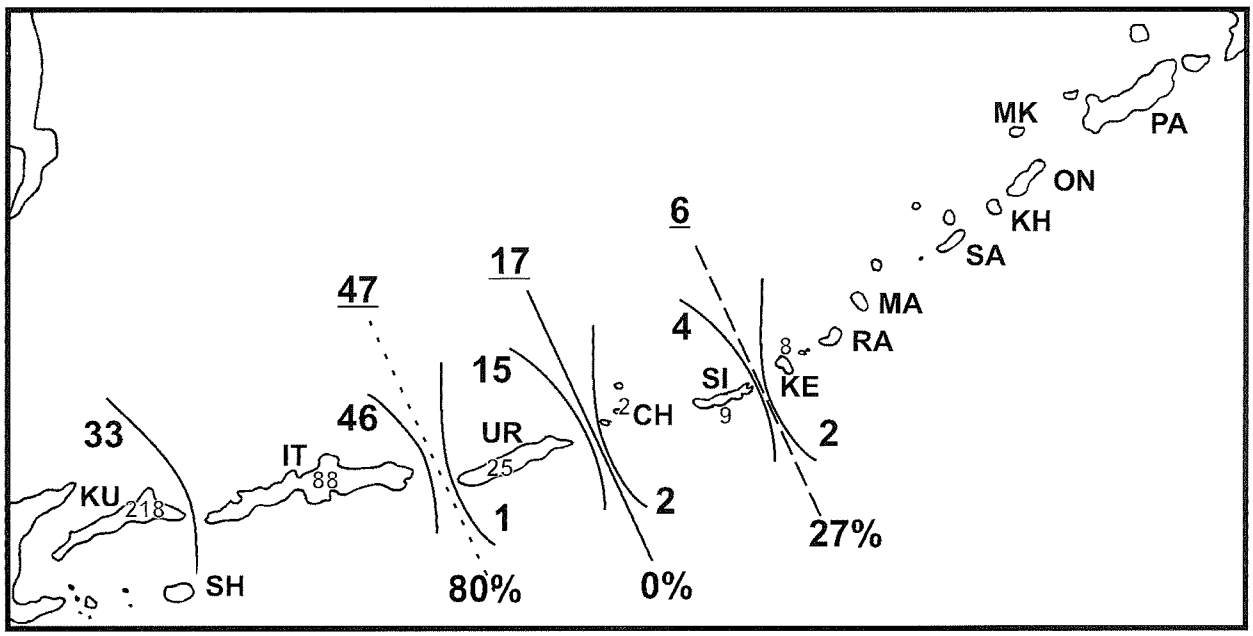


Figure 2. Some zoogegraphical borders traced on the base of Heteroptera distribution. "(" and number below shows number of northern species that are not penetrating southward; ")" and number above shows number of southern species that are not penetrating northward; \ three most important borders: underlined number above – number of species that indicate this border, % below – similarity between adjacent islands.

Acknowledgements

We are greatly obliged to Izyaslav M. Kerzhner (St. Petersburg) for the help in preparation of this manuscript. We also thank Nikolai N. Vinokurov (Yakutsk) who supplied us with important information about diversity of Heteroptera in Hokkaido. English was kindly checked by Donald J. Buckle (Saskatoon).

This work was supported in part by the Russian Foundation for Basic Research (grant # 04-04-48727- п and N 05-04-49917), the Biological Sciences Directorate (Biotic Surveys and Inventories Program) and the International Program Division of the U.S. National Science Foundation, grant numbers DEB-9400821 and DEB-9505031, Theodore W. Pietsch, principal investigator and the Japan Society for the Promotion of Science, grant number BSAR-401, Kunio Amaoka, principal investigator.

References

KANYUKOVA, E.V., 1981. Aquatic bugs (Heteroptera) of Sakhalin. *Proc. Zool. Inst. USSR AS* 92, 14–16. (In Russian.)

KANYUKOVA, E.V., 2003. New data on the fauna of water and semi-aquatic bugs (Heteroptera) from Sakhalin. *Euroasian Entom. J.* 2 (3), 185–189. (In Russian.)

KANYUKOVA, E.V. AND KERZHNER, I.M., 1981. Bugs (Heteroptera) from the northern and middle parts of the Sakhalin Island. *Proc. Zool. Inst. USSR AS* 105, 127–129. (In Russian.)

KERZHNER, I.M., 1962. New species of Heteroptera in the fauna of the USSR. *Proc. Zool. Inst. USSR AS* 30, 139–155. (In Russian.)

KERZHNER, I.M., 1964. Materials on the synonymy of shieldbugs (Hetroptera, Pentatomidae) in the fauna of the USSR and of adjacent countries. *Entomol. Rev.* 43 (2), 363–367. (In Russian.)

KERZHNER, I.M., 1968. New and little known Palaearctic bugs of the family Nabidae (Heteroptera). *Entomol. Rev.* 47 (4), 848–863. (In Russian.)

KERZHNER, I.M., 1972a. Shieldbugs of the genus *Elasmucha* Stål (Heteroptera, Acanthosomatidae) of the fauna of the USSR. *Zool. Zh.* 51 (2), 214–219. (In Russian.)

KERZHNER, I.M., 1972b. New and little-known Heteroptera from the Far East of the USSR. *Proc. Zool. Inst. USSR AS* 52, 276–295. (In Russian.)

KERZHNER, I.M., 1977. New and little-known species of Heteroptera from the Far East of the USSR. *Proc. Zool. Inst. USSR AS* 62, 6–35. (In Russian.)

KERZHNER, I.M., 1978. Hetroptera of Sakhalin and Kurile Islands. *Proc. Biol. Soil. Inst. FESC USSR AS., new ser.* 50 (153), 31–57. (In Russian.)

KERZHNER, I.M., 1987a. *New and little-known Heteroptera from the Far East of the USSR.* USSR AS, FESC, Biol.-Soil. Inst., Vladivostok, (1987). 82 pp. (In Russian.)

KERZHNER, I.M., 1987b. Bugs (Heteroptera) of the Kamchatka Province. *Taxonomy of insects of Siberia and Far East of the USSR*, Vladivostok. pp. 56–62. (In Russian.)

KERZHNER, I.M. AND KANYUKOVA, E.V., 1983. Additions to the fauna of Hetroptera of Kurile Islands. *Systematics and ecological-faunistic survey of selected insect orders from the Far East.* Vladivostok. pp. 37–38. (In Russian.)

KERZHNER, I.M., KANYUKOVA, E.V., MARUSIK, YU.M., URBAIN, B.K., NAKAMURA M. AND LELEI, A.S., 2004. Heteroptera of the Kuril Islands: material collected by the International Expedition 1994–1999 and updated checklist. *Zoosystematica Rossica* 12 (2), 231–242.

KERZHNER, I.M. AND MARUSIK, YU.M., 1997. Heteroptera (Insecta) of the Kurile Islands: revised checklist and new data on Middle Kuriles. *Russ. Entomol.* 5 (1–4), 21–29.

KIRITSHENKO, A.N., 1955. New and little known species of the genus *Aradus* F. (Hemiptera-Heteroptera). *Proc. Zool. Inst. USSR AS* 21, 253–261. (In Russian.)

KIRITSHENKO, A.N., 1959. New and little known Brachyrhynchidae (Hemiptera-Heteroptera). *Entom. Rev.* 38 (1), 179–195. (In Russian.)

KONAKOV, N.N., 1956. Cisfumarolal fauna of south Kurilian volcanoes. *Proc. Far-East Dept. USSR AS, Ser. Zool.* 3 (6), 163–172. (In Russian.)

KRIVOLUTSKAYA, G.O., 1973. *Entomofauna of the Kuril Islands.* Leningrad, Nauka-Press. 315 pp. (In Russian.)

KUWAYAMA, S., 1967. *Insect fauna of the Southern Kuriles.* Sapporo, Japan: Hokunôkai. (In Japanese.)

MATSUMURA, S., 1926a. On the three species of *Dendrolimus* (Lepidoptera), which attack Spruce- and Fir-trees in Japan, with their parasites and predaceous insects. *Annual Proc. of Zool. Mus. USSR Academy of Sciences* 26, 27–50.

MATSUMURA, S., 1926b. On the five species of *Dendrolimus* injurious to conifers in Japan, with their parasitic and predaceous insects. *J. Col. Agric. Hokkaido Univ.* 18 (1), 1–42.

PETROVA, V.P., 1972. Ecologo-geographical characteristic of shieldbugs (Hemiptera, Pentatomoidea) of the southern Kuril Islands. *Zoological Problems of Siberia.* Novosibirsk: Nauka-Press. pp. 160–161. (In Russian.)

PETROVA, V.P., 1976. On the fauna of shieldbugs (Hemiptera, Pentatomoidea) of Kamchatka, Sakhalin and southern Kuril Islands. *Proc. Biol. Inst. of Siberian branch of Acad. of Sci. USSR* 18, 211–222. (In Russian.)

Table 6. Distribution of species found in the Kuril Islands.

Species	IU	TA	PO	ZE	SH	KU	IT	UR	CH	SI	KE	US	RY	RA	MA	SA	EK	CR	KH	ON	MK	AL	PA	SU	Distribution
Ceratocombidae (3)																									
Ceratocombus coleoptratus (Zetterstedt, 1819)						*																			Pal.
Ceratocombus corticalis Reuter, 1889					*	*																			Pal.
Ceratocombus japonicus Poppius, 1910						*																			KU+Jap.
Nepidae (1)																									
Ranatra chinensis Mayr, 1865						*																			Man.
Corixidae (5)																									
Hesperocorixa distanti (Kirkaldy, 1899)	*	*	*	*	*	*																			SK+Kur.+Jap.
Arctocorisa kurilensis Jansson, 1979						*		*			*			*	*	*			*	*	*	*	*	*	Okh.
Callicorixa producta (Reuter, 1880)																							*	*	Hol.
Sigara nigroventralis (Matsumura, 1905)		*			*	*	*	*																	Man.
Sigara toyohirae (Matsumura, 1905)						*																			SK+Kur.+Jap.
Ochteridae (1)																									
Ochterus marginatus (Latreille, 1804)						*																			Pal.
Notonectidae (1)																									
Notonecta triguttata Motschulsky, 1861						*																			Man.
Saldidae (11)																									
Salda littoralis (Linnaeus, 1758)						*	*																*	*	Hol.
Salda kiritshenkoi Cobben, 1985						*																			Man.
Macrosaldula rivularia (J. Sahlberg, 1878)								*															*		Hol.
Saldula nobilis (Horváth, 1884)					*	*	*																		Sib.+Man.
Saldula opacula (Zetterstedt, 1838)						*	*				*												*	*	Hol.
Saldula recticollis (Horváth, 1899)						*																			Man.
Saldula kurentzovi Vinokurov, 1979						*		*																	Man.
Saldula saltatoria (Linnaeus, 1758)					*	*														*			*	*	Hol.
Saldula fucicola (J. Sahlberg, 1870)						*																	*		Pal.
Saldula pallipes (Fabricius, 1794)						*	*	*																	Hol.
Saldula palustris (Douglas & Scott, 1874)					*	*	*														*				Hol.
Mesoveliidae (1)																									
Mesovelia miyamotoi Kerzhner, 1977						*																			Man.
Hydrometridae (1)																									
Hydrometra gracilenta Horvth, 1899						*																			Pal.
Veliidae (2)																									
Microvelia reticulata (Burmeister, 1835)					*	*	*																		Pal.
Pseudovelia tibialis Esaki & Miyamoto, 1955						*																			Man.

Species	IU	TA	PO	ZE	SH	KU	IT	UR	CH	SI	KE	US	RY	RA	MA	SA	EK	CR	KH	ON	MK	AL	PA	SU	Distribution
Gerridae (6)																									
Aquarius paludum (Fabricius, 1794)						*																			Pal.
Limnoporus genitalis (Miyamoto, 1958)					*	*	*																		SK+Kur.+Jap.
Gerris gracilicornis (Horváth, 1879)						*																			Man.
Gerris yezoensis Miyamoto, 1958					*	*	*																		Man.
Gerris lacustris (Linnaeus, 1758)						*																			Pal.
Gerris latiabdominis Miyamoto, 1958	*					*																			Man.
Nabidae (11)																									
Himacerus apterus (Fabricius, 1798)						*																			Pal.
Himacerus dauricus (Kiritshenko, 1911)						*	*																		Pal.
Nabis sauteri (Poppius, 1915)					*																				Man.
Nabis ussuriensis (Kerzhner, 1962)	*		*	*	*	*																			Man.
Nabis demissus (Kerzhner, 1968)						*																			Man.
Nabis flavomarginatus Scholtz, 1847						*																			Hol.
Nabis limbatus Dahlbom, 1851					*																				Pal.
Nabis americolimbatus (Carayon, 1961)					*	*																			Hol.
Nabis reuteri Jakovlev, 1876						*																			Man.
Nabis ferus (Linnaeus, 1758)						*																			Pal.
Nabis stenoferus Hsiao, 1964					*	*	*																		Man.
Anthocoridae (11)																									
Lyctocoris obscurus Kerzhner, 1979						*																			Man.
Xylocoris cursitans (Fallén, 1807)						*																			Man.
Amphiareus obscuriceps (Poppius, 1909)						*																			Man.
Temnostethus distans Kerzhner, 1972					*	*	*																		KU+SK
Anthocoris kalopanacis Kerzhner, 1977						*																			Man.
Anthocoris japonicus Poppius, 1909						*																			Man.
Anthocoris takahashii Hiura, 1959						*																			SK+Kur.+Jap.
Anthocoris miyamotoi Hiura, 1959					*	*	*																		Man.
Acompocoris brevirostris Kerzhner, 1979						*	*	*		*	*					*							*	*	Okh.+Man.
Orius sauteri (Poppius, 1909)					*	*																			Man.
Bilia esakii Carayon & Miyamoto, 1960						*																			Man.
Cimicidae (1)																									
Cimex lectularius Linnaeus, 1758						*																			Cosm.
Microphysidae (2)																									
Loricula pilosella Miyamoto, 1965					*																				Man.
Myrmedobia distinguenda Reuter, 1884									*	*		*													Pal.
Miridae (93)																									

Species	IU	TA	PO	ZE	SH	KU	IT	UR	CH	SI	KE	US	RY	RA	MA	SA	EK	CR	KH	ON	MK	AL	PA	SU	Distribution
Tupiocoris annulifer (Lindberg, 1927)						*																			Sib.+Man.
Monalocoris filicis (Linnaeus, 1758)					*	*																			Pal.
Bryocoris montanus Kerzhner, 1972					*	*		*		*															Man.
Bothynotus pilosus (Boheman, 1852)						*								*					*				*		Pal.
Alloeotomus simplus (Uhler, 1896)						*																			Man.
Deraeocoris ainoicus Kerzhner, 1979					*	*	*	*																	Man.
Deraeocoris pallidicornis Josifov, 1983					*	*																			Man.
Capsus wagneri (Remane, 1950)					*	*																			Pal.
Capsus pilifer (Remane, 1950)					*	*	*																		Pal.
Irbisia sericans (Stål, 1858)									*	*	*	*	*	*	*	*	*	*	*	*		*	*	*	Okh.
Charagochilus angusticollis Linnavuori, 1961						*																			Man.
Polymerus palustris (Reuter, 1905)		*			*	*	*																		Pal.
Tinginotum rostratum Kerzhner, 1972						*																			Man.
Lygocoris pabulinus (Linnaeus, 1761)					*	*	*	*																	Hol.
Lygocoris pabulinoides (Linnavuori, 1961)	*		*		*	*	*																		SK+Kur.+Jap.
Lygocoris idoneus (Linnavuori, 1963)						*																			KU+Jap.
Neolygus lobatus (Linnavuori, 1963)					*	*	*	*																	SK+Kur.+Jap.
Neolygus hoberlandti Kulik, 1965						*	*																		Man.
Neolygus pteleinus Kerzhner, 1977						*																			KU+Jap.
Neolygus honshuensis (Linnavuori, 1961)					*	*	*																		SK+Kur.+Jap.
Neolygus longiusculus Kulik, 1965					*	*	*																		Man.
Neolygus tiliicola Kulik, 1965							*																		Man.
Neolygus nemoralis Kulik, 1965					*	*				*															Sib.+Man.
Apolygus nigrovirens (Kerzhner, 1988)		*	*	*	*	*	*	*		*															Man.
Apolygus lucorum (Meyer-Dür, 1843)	*	*	*	*	*	*	*	*		*															Pal.
Apolygus spinolae (Meyer-Dür, 1841)		*		*	*	*	*	*		*															Pal.
Apolygus infamis (Kerzhner, 1977)					*	*																			Man.
Apolygus fraxinicola (Kerzhner, 1988)						*																			Man.
Apolygus furvus (Kerzhner, 1972)					*	*																			KU+SK
Arbolygus ulmi (Kerzhner, 1979)						*																			Man.
Arbolygus rubripes (Jakovlev, 1876)						*	*																		Man.
Castanopsides potanini (Reuter, 1906)						*	*																		Man.
Lygus rugulipennis Poppius, 1911					*	*	*																		Pal.
Cyphodemidea saundersi (Reuter, 1896)					*	*																			Man.
Orthops scutellatus Uhler, 1877					*	*	*	*																	Hol.
Pachylygus festivus (Kerzhner, 1977)						*																			KU+Jap.

Species	IU	TA	PO	ZE	SH	KU	IT	UR	CH	SI	KE	US	RY	RA	MA	SA	EK	CR	KH	ON	MK	AL	PA	SU	Distribution
Pachylygus nigrescens (Kerzhner, 1977)						*																			KU+Jap.
Salignus duplicatus medius Kerzhner, 1979					*	*	*																		SK+Kur.
Stenotus binotatus (Fabricius, 1794)				*		*	*																		Hol.
Stenotus rubrovittatus (Matsumura, 1913)						*																			Man.
Eurystylus coelestialium (Kirkaldy, 1902)						*																			Man.
Capsodes gothicus graeseri (Autran & Reuter, 1888)					*	*																			Pal.
Orientomiris tricolor (Scott, 1880)						*																			KU+Jap.
Mermitelocerus annulipes prasinus (Reuter, 1908)						*																			SK+Kur.+Jap.
Adelphocoris tenebrosus (Reuter, 1875)						*	*																		Man.
Adelphocoris triannulatus (Stål, 1878)					*	*																			Sib.+Man.
Adelphocoris lineolatus (Goeze, 1778)						*																			Pal.
Adelphocoris suturalis (Jakovlev, 1882)		*		*	*	*	*	*																	Man.
Adelphocoris variabilis (Uhler, 1896)						*																			SK+Kur.+Jap.
Adelphocoris quadripunctatus (Fabricius, 1794)					*	*	*	*																	Pal.
Adelphocoris piceosetosus Kulik, 1965						*																			Man.
Phytocoris scotinus Kerzhner, 1977						*	*																		Man.
Phytocoris pallidicollis Kerzhner, 1977						*																			Man.
Phytocoris longipennis Flor, 1861						*																			Pal.
Phytocoris nowickyi Fieber, 1870					*	*																			Pal.
Stenodema sibirica Bergroth, 1914						*																			Sib.+Man.
Stenodema calcarata (Fallén, 1807)			*		*	*	*				*														Pal.
Dolichomiris kuwayamai Miyamoto, 1967					*	*	*																		SK+Kur.+Jap.
Trigonotylus viridis (Provancher, 1872)					*	*	*																		Sib.+Man.
Trigonotylus caelestialium (Kirkaldy, 1902)					*	*	*				*				*										Hol.
Teratocoris depressus Kerzhner, 1979					*																				SH+Jap.
Teratocoris saundersi Douglas & Scott, 1869																						*	*		Hol.
Teratocoris paludum J. Sahlberg, 1870							*	*																	Hol.
Leptopterna kerzhneri Vinokurov, 1982					*	*																			Sib.+Man.
Erimiris tenuicornis Miyamoto & Hasegawa, 1967					*	*	*																		SK+Kur.+Jap.
Orthocephalus funestus Jakovlev, 1881					*	*	*																		Man.
Cyllecoris nakanishii Miyamoto, 1969						*																			Man.
Cyrtorhinus caricis (Fallén, 1807)				*	*	*	*	*																	Pal.
Blepharidopterus ulmicola Kerzhner, 1977						*																			Man.
Orthotylus pallens (Matsumura, 1911)					*	*																			SK+Kur.+Jap.
Orthotylus kurilensis Kerzhner, 1997							*	*																	Kur.+Jap.
Orthotylus flavosparsus (C. Sahlberg, 1841)						*																			Hol.

Species	IU	TA	PO	ZE	SH	KU	IT	UR	CH	SI	KE	US	RY	RA	MA	SA	EK	CR	KH	ON	MK	AL	PA	SU	Distribution
Mecomma ambulans (Fallén, 1807)								*		*	*			*									*		Pal.
Mecommopsis cruciata Kerzhner, 1979						*																			Man.
Pilophorus setulosus Horváth, 1905						*																			SK+Kur.+Jap.
Pilophorus validicornis Kerzhner, 1977						*																			KU+SK
Hallodapus linnavuorii Miyamoto, 1966						*																			KU+Jap.
Systellonotus malaisei Lindberg, 1934					*	*																			Man.
Harpocera orientalis Kerzhner, 1979						*																			KU+Jap.
Plesiodema stlaniki Kerzhner, 1979						*	*																		NES+Man.
Psallus salicis (Kirschbaum, 1856)					*	*																			Man.
Psallus falleni Reuter, 1883						*																			Pal.
Psallus oyashimensis Yasunaga & Vinokurov, 2000					*																				SH-Jap.
Psallus nigricornis Yasunaga & Vinokurov, 2000					*																				Sib.+Man.
Psallus tonnaichanus Muramoto, 1973						*	*																		Man.
Psallus cinnabarinus Kerzhner, 1979						*																			Man.
Psallus vittatus (Fieber, 1861)						*	*																		Pal.
Europiella decolor (Uhler, 1893)							*																		Hol.
Europiella artemisiae (Becker, 1864)	*	*	*	*	*	*	*	*														*	*	*	Hol.
Europiella miyamotoi (Kerzhner, 1988)		*			*	*																			SK+Kur.+Jap.
Europiella lividella (Kerzhner, 1979)					*	*																			Man.
Plagiognathus collaris (Matsumura, 1911)	*	*	*	*	*	*	*	*																	Sib.+Man.
Plagiognathus chrysanthemi (Wolff, 1804)						*																			Pal.
Tingidae (6)																									
Acalypta gracilis (Fieber, 1844)						*																			Pal.
Acalypta marginata (Wolff, 1804)											*			*											Pal.
Derephysia foliacea (Fallén, 1807)						*																			Pal.
Tingis lasiocera Matsumura, 1907					*	*																			Kur.+Jap.
Physatocheila orientis Drake, 1942					*	*	*																		Sib.+Man.
Agramma japonicum (Drake, 1948)						*																			Man.
Reduviidae (4)																									
Empicoris vagabunda (Linnaeus, 1758)					*	*																			Hol.
Rhynocoris leucospilus (Stål, 1859)					*	*																			Hol.
Coranus dilatatus (Matsumura, 1913)						*																			Sib.+Man.
Pygolampis bidentata (Goeze, 1778)						*																			Pal.
Aradidae (12)																									
Aradus transiens Kiritshenko, 1913						*																			Man.
Aradus crenaticollis R. Sahlberg, 1848						*																			Pal.

Species	IU	TA	PO	ZE	SH	KU	IT	UR	CH	SI	KE	US	RY	RA	MA	SA	EK	CR	KH	ON	MK	AL	PA	SU	Distribution
Aradus orientalis Bergroth, 1885						*																			KU+Jap.
Aradus consentaneus Horváth, 1905					*	*	*																		Man.
Aradus pictellus Kerzhner, 1972					*	*																			Man.
Aradus corticalis (Linnaeus, 1758)					*	*																			Pal.
Aneurillodes glaberrimus (Kerzhner, 1979)					*	*	*																		S.Kur.
Aneurus nitidulus Kormilev, 1955						*																			Man.
Neaneurus macrotylus (Jakovlev, 1880)					*	*	*																		Man.
Paraneurus galiae (Kerzhner, 1979)						*																			KU+Jap.
Paraneurus nipponicus (Kormilev & Heiss, 1976)						*	*																		SK+Kur.+Jap.
Mezira subsetosa Josifov & Kerzhner, 1974						*																			Man.
Berytidae (1)																									
Metatropis rufescens (Herrich-Schaeffer, 1835)					*	*																			Pal.
Lygaeidae (31)																									
Lygaeus equestris (Linnaeus, 1758)						*																			Pal.
Arocatus rufipes Stål, 1873						*																			Man.
Nysius ericae (Schilling, 1829)						*	*																		Pal.
Nysius groenlandicus (Zetterstedt, 1838)																*						*	*		Hol.
Nysius expressus Distant, 1883			*	*	*	*	*	*																	Sib.+Man.
Kleidocerys resedae (Panzer, 1797)						*																			Hol.
Cymus glandicolor Hahn, 1832						*																			Pal.
Cymus aurescens Distant, 1883					*	*	*																		Pal.
Dimorphopterus japonicus (Hidaka, 1969)						*																			Man.
Pachygrontha antennata (Uhler, 1860)						*																			Man.
Geocoris proteus Distant, 1883						*																			Kur.+Jap.
Plinthisus japonicus (Hidaka, 1962)						*																			Man.
Iodinus ferrugineus Lindberg, 1927					*	*																			Man.
Stygnocoris sabulosus (Schilling, 1829)	*					*																			Hol.
Scolopostethus thomsoni Reuter, 1874					*	*	*	*												*					Hol.
Eremocoris plebejus (Fallén, 1807)						*																			Pal.
Eremocoris insularis Kerzhner, 1977						*																			KU+SK
Drymus orientalis Kerzhner, 1977					*	*																			Man.
Drymus pilicornis (Mulsant & Rey, 1852)						*																			Pal.
Nysius latus obscurior Kerzhner, 1977						*																			Man.
Lamproplax unispina Kerzhner, 1977						*																			Kur.+Jap.
Lamproplax membranea Distant, 1883						*	*																		Sib.+Man.
Lamproplax majuscula Kerzhner, 1977						*																			Man.

Species	IU	TA	PO	ZE	SH	KU	IT	UR	CH	SI	KE	US	RY	RA	MA	SA	EK	CR	KH	ON	MK	AL	PA	SU	Distribution
Trichodrymus pameroides Lindberg, 1927					*	*																			Man.
Gastrodes grossipes japonicus (Stål, 1874)						*																			Man.
Stigmatonotum rufipes (Motschulsky, 1866)					*	*	*																		Kam.-Man.
Pachybrachius luridus Hahn, 1826					*	*	*																		Hol.
Paraparomius lateralis (Scott, 1874)						*																			Man.
Panaorus japonicus (Stål, 1874)						*																			Man.
Peritrechus femoralis Kerzhner, 1977						*																			Man.
Sphragisticus nebulosus (Fallén, 1807)						*																			Pal.
Pyrrhocoridae (1)																									
Pyrrhocoris sibiricus Kuschakewitsch, 1867						*																			Sib.+Man.
Alydidae (1)																									
Paraplesius unicolor Scott, 1874					*	*																			Kur.+Jap.
Rhopalidae (2)																									
Rhopalus maculatus (Fieber, 1836)						*																			Pal.
Stictopleurus punctatonervosus (Goeze, 1778)						*																			Pal.
Urostylididae (1)																									
Urostylis annulicornis Scott, 1874						*																			Man.
Acanthosomatidae (10)																									
Acanthosoma expansum Horváth, 1905						*																			Man.
Acanthosoma spinicolle Jakovlev, 1880					*	*																			Man.+ÑSiS
Acanthosoma labiduroides Jakovlev, 1880						*																			Man.
Acanthosoma denticaudum Jakovlev, 1880						*																			Man.
Elasmostethus humeralis Jakovlev, 1883					*	*	*																		Man.
Elasmostethus interstinctus (Linnaeus, 1758)					*	*	*																		Pal.
Elasmucha fieberi (Jakovlev, 1865)						*	*																		Pal.
Elasmucha amurensis Kerzhner, 1972					*	*	*																		Man.
Elasmucha dorsalis (Jakovlev, 1876)					*	*		*																	Sib.+Man.
Elasmucha signoreti Scott, 1874						*																			SK+Kur.+Jap.
Cydnidae (4)																									
Microporus nigrita (Fabricius, 1794)						*																			Pal.
Macroscytus japonensis Scott, 1874						*																			Man.
Geotomus confusus Hsiao, 1977						*																			Man.
Adomerus variegatus (Signoret, 1884)						*																			Man.
Pentatomidae (13)																									
Graphosoma rubrolineatum (Westwood, 1837)						*																			Man.
Aelia fieberi Scott, 1874						*																			Man.

Species	IU	TA	PO	ZE	SH	KU	IT	UR	CH	SI	KE	US	RY	RA	MA	SA	EK	CR	KH	ON	MK	AL	PA	SU	Distribution
Eysarcoris gibbosus (Jakovlev, 1904)						*																			Man.
Eusarcoris lewisi Distant, 1883					*	*																			SK+Kur.+Jap.
Carbula abbreviata (Motschulsky, 1866)						*																			Man.
Palomena angulosa (Motschulsky, 1861)						*																			Man.
Carpocoris purpureipennis (De Geer, 1773)						*																			Pal.
Dolycoris baccarum (Linnaeus, 1758)						*	*																		Pal.
Eurydema rugosa (Motschulsky, 1861)						*																			Man.
Pentatoma rufipes (Linnaeus, 1758)						*																			Pal.
Picromerus bidens (Linnaeus, 1758)						*																			Pal.
Dinorhynchus dybowskii Jakovlev, 1876						*																			Man.
Arma custos (Fabricius, 1794)						*																			Pal.