

The List of Caddisflies (Insecta, Trichoptera) collected in South Primorye during the symposium and post-symposium excursions of the XIV International Symposium on Trichoptera (5 and 8–13 July 2012)

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Abstract

A list of the caddisflies obtained during the 14th International Symposium on Trichoptera, 2–7 July 2012, Vladivostok, Russia, is presented. Imago and immature stages were collected in different places in South Primorye during the symposium (5 July 2012) and post-symposium excursions (8–13 July 2012). The list of collected caddisflies includes 98 species of 45 genera belonging to 22 families. The coordinates for collecting sites and photos of working moments of the expeditions are included as well as photos of some species made by expedition participants.

Key words: light traps, benthic sampling, international expeditions, Primorsky Krai

Introduction

There were two field excursions offered to the participants of the 14th International Symposium on Trichoptera which was held in Vladivostok from 2 to 7 July 2012. One was undertaken between Symposium sessions in the Khasansky District (South Primorye, Black Mountain System) on 5 July 2012. The second excursion was to the southeastern coastal part of Sikhote-Alinsky Ridge and then, to the Khanka Lake basin, investigating a total of 10 general localities (Fig. 1). In the first excursion all Symposium participants took part; in the post-Symposium excursion there were 18 participants: F. De Moor (South Africa), O.S. Flint, Jr. (USA), P.B. Frandsen (USA), R.W. Holzenthal (USA), V.D. Ivanov (Russia), K.M. Kjer (USA), S. Melnitsky (Russia), W. Mey (Germany), Min Woo Oh (South Korea), A.P. Rasnitsyn (Russia), K. Tojo (Japan), R. Saito (Japan), R.E. Thomson (USA), members of the Symposium Organization Committee [D. Konstantin and Y. Chistyakov (Russia)] who helped as instructors, drivers, and collectors; and T. Voronovskaya who served as an interpreter for part of the time, and Symposium Chair and Expedition Leader T.S. Vshivkova. This latter tour was called "Trichoptera Route Around South Primorye."



FIGURE 1. Collecting sites.

It was a happy time not only because of the wonderful weather (as if someone specially stopped the rain when we prepared to collect insects), but also because of the remarkable companionship of colleagues with whom we seldom visit and the fine environment, consisting of the “pure, virgin” (relatively unchanged) nature and wonderful

landscapes full of streams, rivers and lakes. We collected many caddis and other interesting amphibiotic insect adults with entomological nets and different light traps and immature stages with dip nets and by washing substrates (Figs 2–6).



FIGURE 2-5.

2, The most important collecting equipment—the entomological net [Dr. Kuhara, (Japan)];

3, Who has caught whom? [Dr. Kimura (Japan)];

4, Dr. Torii (Japan) is equipped for benthos collecting;

5, Four collectors and three nets [Dr. Holzenthal and his Ph.D. student Robin Thomson (U.S.A.), Dr. Morse (U.S.A.) and Dr. Vshivkova (Russia)].



FIGURE 6-7.
 6, Light trap at Smolny Stream, Anisimovka Village [Dr. De Moor (South Africa), Rie Saito (Japan), and Dr. Flint (U.S.A.)];
 7, Drs. Majecki, Loskutova and Smirnova at Izvestkovy Stream.



FIGURE 8-9.
 8, As always imperturbable Dr. Nimmo among colleagues at Izvestkovy Stream;
 9, All Symposium participants at Barabashevka River.

Back home, participants identified collected material and those who sent results to the Organizing Committee became authors of this article.

We got more than 98 species from 12 general collecting sites in the one week period (5 July and 8–13 July 2012). Some collected species are interesting records for the South Primorye fauna.



FIGURE 10. Kravtsovsky Waterfall—a beauty of nature.

Itinerary

The first excursion, named “Unique Areas of Khasan District,” occurred on 5 July 2012 and almost all participants took part. The day before the excursion the region was drenched in a heavy rain and many doubted that the expedition could be successful. However, it seems that the sun also likes caddisflies because it accompanied us not only that day, but also during the entire time of the next expedition. During the first excursion we worked in Khasan District, which is considered as a biodiversity “hot spot” not only for Primorye, but also for all of Russia.

We collected south of Barabash Village, inspecting Izvestkovy Stream and Barabashevka River (Figs 7–9), located close to the famous Kedrovaya Pad Biosphere Nature Reserve, the oldest BNR in Russia. On the way back to Vladivostok, we stopped at Kravtsovsky Waterfalls (4 km from Kravtsovka Village) (Figs 10–14) and then at Amba River (at Zanadvorovka Village). The waterfalls are a cascade of five small (each 4–6 m) waterfalls. These falls were formed more than 1 million years ago due to volcanic eruptions and earthquakes, resulting in frozen chunks of lava. Each of the waterfalls has a colorful name: "Fairy Tale," "Stone Bowl" (reminiscent of a huge stone pot), "Wild Mouth" (evoking a fabulous monster's mouth), "Crystal," and "Step." Further on our way, we stopped for dinner at a small café "Minutka" ("Short Minute"), providing another chance to chat about caddisflies and many other interests (Figs 15–17). To conclude the evening we returned to Vladivostok, so that the Symposium's scientific presentations continued the next day.

The second (post-symposium) excursion, named "The Famous Areas of Leopard Land and Khanka Lake," took us to Anisimovka Village where we collected at Beryozovy and Smolny Streams (Figs 18–19) and met some of the local people, and then for a short time at Sukhodol River. We stayed in Anisimovka from 8 to 9 July 2012 and collected caddisflies using standard nets and different light traps, including some very specific traps such as "light-colored doors" and common lamps of tourist camps "Tyoplaya Dolina" (Anisimovka Village), which were very attractive for caddis adults. We visited a local museum to learn the history of the village (Figs 20–23) and enjoyed our time there with light traps, a sauna, and a pool (Fig. 24).

Then we moved east to "Vostok" Biostation, belonging to the Institute of Marine Biology and located at Vostok Bay (Peter the Great Gulf). Here we collected around Volchanetz Lake and at Volchanka River and its left tributary during 10 to 11 July (Fig. 25).

After that we went northwest to Khanka Lake and stayed in "Kordon Vostochny" (in the eastern part of Khanka Lake Biosphere Nature Reserve) from 12 to 13 July 2012 (Figs 26–27).

After that some members of the group continued the expedition as part of the CRDF-FEB RAS International Expedition, "To the Source of Ussuri River: In the Footsteps of Andrey Martynov," while others returned to the Vladivostok airport to travel back to their homes. The faunistic results of this expedition and in the period from 2012 to 2014 will be reported in a separate paper.

The collection sites are in Fig. 1. The names and dates of the localities where caddisflies were collected are as follows:

5 July 2012: Khasansky District

Site 1:	Izvestkovy Stream	43.189 N;	131.496 E
Site 2a	Barabashevka River	43.169 N;	131.531 E
Site 2b:	Barabashevka River	43.175 N;	131.542 E
Site 3:	Amba River	43.297 N;	131.606 E
Site 4:	Kravtsovsky Waterfalls	43.362 N;	131.642 E

8–9 July 2012: Shkotovsky District

Site 5:	Beryozovy Stream	43.160 N;	132.755 E
Site 6:	Smolny Stream	43.152 N;	132.760 E
Site 7:	Sukhodol River	43.178 N;	132.727 E

10–11 July 2012: Partizansky and Nakhodkinsky District

Site 8:	Volchanetz Lake	42.951 N;	132.776 E
Site 9:	Biostation "Vostok" area	42.892 N;	132.721 E
Site 10:	Volchanka River	42.983 N;	132.774 E
	and its left tributary	43.034 N;	132.788 E

12–13 July 2012: Spassky District, Khanka Biosphere Nature Reserve at "Kordon Vostochny"

Site 11:	Khanka Lake, marshes	44.701 N;	132.585 E
Site 12a:	Khanka Lake, "Kordon Vostochny"	44.655 N;	132.563 E
Site 12b:	Pospelovy Marshes at Observation Tower (near Kordon Vostochny)	44.651 N;	132.552 E



FIGURE 11-12.
 11, Dr. Tojo (Japan) collecting pictures and insects;
 12, Drs. Melnitsky and Loskutova (Russia) at Kravtsovsky Waterfall.



FIGURE 13-14.
 13, A minute of rest [Drs. Morse (USA) and Sukatsheva (Russia)];
 14, It was a hot sunny day [Dr. Wells (Australia)].



FIGURE 15-17.
 15, On the way, we stopped at small cafe "Minutka.";
 16, A group of colleagues from Japan and South Korea;
 17, The Italian team.



FIGURE 18-19.
 18, Before dusk... (light-trapping at Smolny Stream, Anisimovka Village);
 19, Dr. Holzenthal (U.S.A.) and some local people interested aquatic insects.



FIGURE 20-22.
 20, At the local Anisimovka Museum, Drs. Rasnitsyn, (Russia), De Moor (South Africa), Holzenthal, and Kjer (USA) recognized some old musical instruments;
 21, Meanwhile... Dr. Flint took some rest...;
 22, Young participants fall in music (Dr. Toji Kojo)



FIGURE 23-25.

23, Dr. Kjer (U.S.A.) with harmonica;

24, During the evening in Anisimovka, some people were busy with collecting, but some enjoyed the pool [Dr. Mey (Germany)] or rest nearby [Drozdov Konstantin (Russia)];

25, The Trichoptera team at the "Vostok" Biostation (from left to right: F. De Moor, T. Vshivkova, W. Mey, V. Ivanov, O. Flint, R. Thomson, R. Holzenthal, P. Frandsen, K. Kjer, Y. Chistyakov, S. Melnitsky, A. Rasnitsyn, T. Voronovskaya, N. Zyablitskaya, K. Drozdov).



FIGURE 26-27.

26, Observation Tower at Pospelovy Marsh (Khanka Lake, eastern shore) (S. Melnitsky and T. Vshivkova in first row, A. Rasnitsyn, K. Kjer, F. de Moor and P. Frandsen in second row);

27, View of Pospelovy Marshes from the Observation Tower (Khanka Lake).

Results

The List of Caddisflies collected in 12 main sites includes 98 species of 45 genera and 22 families (Table 1). The families and included taxa are arranged in alphabetical order. Special comments are provided for some interesting species:

Agapetus sp. n.—The species is close to *Agapetus inaequispinosus*. It was noted as *Agapetus "levanidovae"* Vshivkova in the poster presentation "The Agapetinae (Glossosomatidae, Trichoptera) of the Russian Far East" in 8th International Symposium on Trichoptera (Vshivkova 1995) where genitalia of males *A. inaequispinosus* and *A. "levanidovae"* were compared, and a preliminary scheme of their distribution were demonstrated; that time the male genitalia illustrations were shared among Russian and international colleagues to clarify the real distribution of these closely related species. The manuscript with the species description was prepared but not published because of the incomplete revision of the data; the technical report with male genitalia illustration was prepared (Vshivkova, 2015). After re-identification of all available material a final paper with complete descriptions of the adults, taxonomical, ecological and distributional information will be published.

Hydropsyche lianchiensis (Li & Tian 1990)—Occurring in limited regions of South Primorye: Khanka Lake basin, Ussuriisky District. Now it is recorded from new localities of Shkotovsky District.

Hydroptila dampfi Ulmer, 1929—A rare species in Primorye, it is found in 2 areas: Khanka Lake basin (Morse *et al.* 2002), and recently in Vostok Bay basin (Vshivkova *et al.* 2014).

Hydroptila spinosa Arefina & Armitage, 2003—A rare species, it was known from North Primorye and now we record a second locality in South Primorye: Partizansky District, Volchanetz Lake.

Oxyethira distinctella McLachlan 1880—The first record for Primorye Territory.

Lepidostoma coreanum (Kumanski & Weaver 1992)—A rare species; in Russia has been found in only Khasan District, but now it is noted for the first time from other region for Partizansky District (Volchanetz Lake).

Ceraclea fulva (Rambur 1842)—The first record for Primorye; previously in Russia it was recorded from the southern Khabarovsk Region (Levanidova *et al.* 1995).

Ceraclea superba (Tsuda 1942)—A rare species; in Russia it was known from Primorye (the western shore of Khanka Lake (Levanidova *et al.* 1995, as *Ceraclea* sp. 3; Arefina 1997); recently – from southern Khabarovsk Region (Lower Ussuri River).

Leptocerus biwae (Tsuda 1942)—In Russia recorded for only Khanka Lake basin (Morse *et al.* 2002).

Trichosetodes japonicus Tsuda 1942—A new record for the Khanka Lake basin based on results of the CRDF-FEB RAS Expedition and this study; before was recorded from Ussuri River basin (Pozharsky District at Guberoovo Village; Yakovlevsky District at Beltzovo Village).

Psilotreta falcula Botosaneanu 1970—A species with very limited distribution in Russia; it is known only from Lazovsky and Khasansky Districts, and the vicinity of Vladivostok.

Phryganea sinensis McLachlan 1862—The largest Trichoptera species in Russia (except species of *Eubasilissa*); in Russia can be found in southern regions only: Amurskaya Oblast, Evreyskaya Autonomous Oblast, and Primorye Territory.

Rhyacophila mroczkowskii Botosaneanu 1970—Previously it was recorded for Kedrovaya Pad Nature Reserve; now we add another locality in the same district: Kravtsovskiy Waterfalls.

Rhyacophila vicina Botosaneanu 1970—Known from streams of Kedrovaya Pad Nature Reserve (Kedrovaya River basin); now it has been discovered in a locality outside of the Kedrovaya Pad Nature Reserve, in Izvestkovy Stream (Barabashevka River basin).

TABLE 1. List of caddisfly species collected in South Primorye (Russia), during expeditions on 5 and 8–13 July 2012 in conjunction with of the XIV International Symposium on Trichoptera.

N	Taxa	Collecting Sites											
1	Family Apataniidae	1	2	3	4	5	6	7	8	9	10	11	12
1	<i>Apatania</i> sp. (larvae)				+								
2	Family Arctopsychidae												
2	<i>Arctopsyche palpata</i> Martynov 1934			*		+	+	+		+	+		
3	Family Brachycentridae												
3	<i>Micrasema (gelidum) gelidum</i> McLachlan 1876					+	+				+		
4	<i>M. (gelidum) primoricum</i> Botosaneanu 1990	+	+			+	+	+			+		
4	Family Dipseudopsidae												

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TABLE 1. (Continued)

N	Taxa	Collecting Sites									
5	<i>Hyalopsyche sachalinica</i> Martynov 1910										+
5	Family Ecnomidae										
6	<i>Ecnomus tenellus</i> (Rambur 1842)						+				+
7	<i>Ecnomus tsudai</i> Kumanski 1992						+		+		
8	<i>Ecnomus yamashironis</i> Tsuda 1942										+
6	Family Glossosomatidae										
9	<i>Agapetus inaequispinosus</i> Schmid 1970?						+				
10	<i>Agapetus sibiricus</i> Martynov 1918					+				+	
11	<i>Agapetus</i> sp. n. ("levanidovae")		+								
	<i>Agapetus</i> sp. (indet.)					+			+	+	
12	<i>Electragapetus praeteritus</i> (Martynov 1934)		+	+	+	+	+				
13	<i>Glossosoma altaicum</i> (Martynov 1914)	+				+	+	+			+
14	<i>Glossosoma intermedium</i> (Klapálek 1892)					+	+	+		*	
15	<i>Glossosoma ussuricum</i> (Martynov 1934)		+			+	+				+
	<i>Glossosoma</i> sp. (females)				+	+					+
7	Family Goeridae										
16	<i>Goera horni</i> Navás 1926		+					*	+	+	
17	<i>Goera parvula</i> Martynov 1935			+							
18	<i>Goera squamifera</i> Martynov 1909		+								
19	<i>Goera tungusensis</i> Martynov 1909		+		+	+					+
	<i>Goera</i> cf. <i>tungusensis</i> Martynov 1909 (larva)				+						
	<i>Goera</i> sp. (females)										+
8	Family Hydrobiosidae										
20	<i>Apsilochorema sutshanum</i> Martynov 1934		+	*		+	+	+			+
9	Family Hydropsychidae										
21	<i>Amphipsyche proluta</i> McLachlan 1872										+
22	<i>Cheumatopsyche brevilineata</i> (Iwata 1927)										+
23	<i>Cheumatopsyche infascia</i> Martynov 1934					+	+	+	+	+	
	<i>Cheumatopsyche</i> sp. (females)					+					
24	<i>Hydropsyche kozhantschikovi</i> Martynov 1924		+			+	+				+
25	<i>Hydropsyche lianchiensis</i> (Li & Tian 1990)					+					
26	<i>Hydropsyche orientalis</i> Martynov 1934					+	+		+	+	
27	<i>Potamyia chinensis</i> (Ulmer 1915)										+
28	<i>Potamyia czekanovskii</i> (Martynov 1910)										+
10	Family Hydroptilidae										
29	<i>Agraylea multipunctata</i> Curtis 1834									+	+
30	<i>Hydroptila dampfi</i> Ulmer 1929								*		+
31	<i>Hydroptila spinosa</i> Arefina & Armitage 2003							+			
32	<i>Hydroptila</i> sp.					+				+	
33	<i>Orthotrichia tragetti</i> Mosely 1930							+	*		+
34	<i>Orthotrichia</i> sp.							+			

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TABLE 1. (Continued)

N	Taxa	Collecting Sites									
35	<i>Oxyethira distinctella</i> McLachlan 1880										+
36	<i>Oxyethira ecornuta</i> Morton 1893	+						*	*		+
37	<i>Oxyethira josifovi</i> Kumanski 1990					*					
11 Family Lepidostomatidae											
38	<i>Lepidostoma albardanum</i> (Ulmer 1906)						+			*	
39	<i>Lepidostoma coreanum</i> (Kumanski & Weaver 1992)							+			
40	<i>Lepidostoma elongatum</i> (Martynov 1935)	+	+	+	+	+			+	+	
41	<i>Lepidostoma hirtum</i> (Fabricius 1775)							+			
	<i>Lepidostoma</i> sp.	+									
12 Family Leptoceridae											
42	<i>Ceraclea albimacula</i> (Rambur 1842)										+
43	<i>Ceraclea ensifera</i> (Martynov 1935)										+
44	<i>Ceraclea fulva</i> (Rambur, 1842)										+
45	<i>Ceraclea shuotsuensis</i> (Tsuda 1942)					*		+		*	
46	<i>Ceraclea superba</i> (Tsuda 1942)										+
47	<i>Ceraclea</i> sp. 4	+									
48	<i>Leptocerus biwae</i> (Tsuda 1942)										+
49	<i>Leptocerus valvatus</i> (Martynov 1935)										+
50	<i>Mystacides dentata</i> Martynov 1924							+		+	
51	<i>Mystacides sibirica</i> Martynov 1935										+
52	<i>Mystacides longicornis</i> (Linnaeus 1758)										+
53	<i>Oecetis antennata</i> (Martynov 1935)										+
54	<i>Oecetis lacustris</i> (F.J. Pictet 1834)									+	+
55	<i>Oecetis</i> nr. <i>lacustris</i> (F.J. Pictet 1834)										+
56	<i>Oecetis minuta</i> Martynov 1935										+
57	<i>Oecetis nigropunctata</i> Ulmer 1908							+	*		+
58	<i>Oecetis ochracea</i> (Curtis 1825)										+
59	<i>Oecetis testacea kumanskii</i> Yang & Morse 2000					+				+	
60	<i>Setodes amurensis</i> Martynov 1935										+
61	<i>Setodes furcatulus</i> Martynov, 1935									*	
62	<i>Setodes pulcher</i> Martynov 1910							+			
	<i>Setodes</i> sp. (female)										+
63	<i>Trienodes rufescens</i> Martynov 1935							+			
64	<i>Trienodes unanims</i> McLachlan 1877										+
65	<i>Trichosetodes japonicus</i> Tsuda 1942										+
13 Family Limnephilidae											
66	<i>Asynarchus amurensis</i> (Ulmer 1905)						+		*		
67	<i>Ecclisomyia kamtschatica</i> (Martynov 1914)				+	+					
68	<i>Hydatophylax soldatovi</i> (Martynov 1914)	+			+	+	+				
69	<i>Limnephilus</i> sp.		+								
70	<i>Nemotaulius admorsus</i> (McLachlan 1866)									+	

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TABLE 1. (Continued)

N	Taxa	Collecting Sites											
14	Family Molannidae												
71	<i>Molanna moesta</i> Banks 1906		+			*	+	+			+	+	
15	Family Odontoceridae												
72	<i>Psilotreta falcata</i> Botosaneanu 1970		*	*									
16	Family Philopotamidae												
73	<i>Kisaura aurascens</i> (Martynov 1934)		*										
17	Family Phryganeidae												
74	<i>Agrypnia czerskyi</i> (Martynov 1924)											+	
75	<i>Phryganea sinensis</i> McLachlan 1862											+	
76	<i>Semblis atrata</i> (Gmelin 1789)			+									
77	<i>Semblis phalaenoides</i> (Linnaeus 1758)					+							
18	Family Polycentropodidae												
78	<i>Cyrnus fennicus</i> Klingstedt 1937							+				+	
79	<i>Neureclipsis mandjurica</i> (Martynov 1907)										+	+	
80	<i>Plectrocnemia baculifera</i> Botosaneanu 1970						*						
81	<i>Plectrocnemia wui</i> (Ulmer 1932)						*				+		
	<i>Plectrocnemia</i> sp.										+		
19	Family Psychomyiidae												
82	<i>Paduniella uralensis</i> Martynov 1914							+					
83	<i>Psychomyia flavida</i> Hagen 1861		+				+						
84	<i>Psychomyia forcipata</i> Martynov 1934		+					+					
85	<i>Psychomyia minima</i> (Martynov 1910)							+		+		+	
	<i>Psychomyia</i> sp.							+		+		+	
20	Family Rhyacophilidae												
86	<i>Rhyacophila angulata</i> Martynov 1910						+				+		
87	<i>Rhyacophila depressa</i> Martynov 1910					+	*	*					
88	<i>Rhyacophila kardakoffi</i> Navás 1926					+	+	+					
89	<i>Rhyacophila lata</i> Martynov 1918		+	*						*	+		
90	<i>Rhyacophila lepnevae</i> Levanidova 1977		+	+	+								
91	<i>Rhyacophila manuleata</i> Martynov 1934		+										
92	<i>Rhyacophila mroczkowskii</i> Botosaneanu 1970				+								
93	<i>Rhyacophila narvae</i> Navás 1926						+						
94	<i>Rhyacophila riedeliana</i> Botosaneanu 1970		+	+	+	+							
95	<i>Rhyacophila vicina</i> Botosaneanu 1970		+										
	<i>Rhyacophila</i> sp. (females)		+				+				+		
21	Family Stenopsychidae												
96	<i>Stenopsyche bergeri</i> Martynov 1926									+	*		
97	<i>Stenopsyche marmorata</i> Navás 1920						+	+		+			
22	Family Thremmatidae												
98	<i>Neophylax ussuriensis</i> (Martynov, 1914)		+	*									

Notes: "+" = species recorded by authors based on collection on 5 and 8–13 July 2012; "*" = species recorded earlier (Tiunova *et al.* 2003; Vshivkova *et al.* 2014) and collected in different years on the same dates (between 5 and 15 July). Code of collecting sites: 1, Izvestkovy Stream; 2, Barabashevka River (localities *a*, and *b*); 3, Amba River; 4, Kravtsovsky Water Falls; 5, Beryozovy Stream; 6,

Smolny Stream; 7, Sukhodol River; 8, Volchanetz Lake; 9, Biostation "Vostok" area; 10, Volchanka River and its left tributary; 11, Khanka Lake, eastern part, marshes; 12, Khanka Lake, eastern part (at "Kordon Vostochny" Pospelovy Marshes at Observation Tower).



FIGURE 28, a-h. Caddisfly photos obtained by trichopterologists in South Primorye:

- (a) *Arctopsyche palpata* Martynov 1934, by M. Tiunov,
- (b) *Agapetus* sp., by S. Melnitsky,
- (c) *Apsilochorema sutshanum* Martynov 1934, by M. Tiunov,
- (d) *Lepidostoma* sp., male, by V. Ivanov,
- (e) *Lepidostoma* sp., female, by T. Vshivkova,
- (f) *Setodes* sp., by V. Ivanov,
- (g) *Ecclisomyia kamtschatica* Martynov 1914, by S. Melnitsky,
- (h) *Psilotreta falcata* Botosaneanu 1970, by S. Melnitsky,



FIGURE 28, i-o. Caddisfly photos obtained by trichopterologists in South Primorye:

- (i) *Kisaura aurascens* (Martynov 1934), by S. Melnitsky,
- (j) *Phryganea sinensis* McLachlan 1862, by M. Tiunov,
- (k) *Semblis atrata* (Gmelin 1789), by M. Semeikin,
- (l) *Semblis phalaenoides* (Linnaeus 1758), by S. Melnitsky,
- (m) *Stenopsyche marmorata* Navás 1920, by V. Ivanov,
- (n) *Agrypnia* sp., by M. Semeikin,
- (o) *Hydatophylax nigrovittatus* (McLachlan, 1872), by M. Tiunov.

Some species collected during the expeditions were photographed by Russian colleagues Stanislav Melnitsky, Vladimir Ivanov (St-Petersburg State University), and some images were taken by Mikhail Tiunov, Mikhail Semeikin and Tatyana Vshivkova (IBSS FEB RAS, Vladivostok) (Figs 28a–o).

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