

LJUBLJANA, JULY 1996

Vol. 4, No. 1: 13-18

**DESCRIPTION OF *NEOPERLA USSURICA* SP.N.  
FROM THE RUSSIAN FAR EAST (PLECOPTERA: PERLIDAE)**

Ignac SIVÉC, Ljubljana and  
Lidia A. ZHILTZOVA, St. Petersburg

**Abstract** -*Neoperla ussurica* sp.n., the only Russian species of the genus *Neoperla*, is described and illustrated. Its taxonomic position is briefly discussed and compared with related species.

**Izveček** OPIS VRSTE *NEOPERLA USSURICA* SP.N. Z  
RUSKEGA DALJNEGA VZHODA (PLECOPTERA: PERLIDAE)

*Neoperla ussurica* sp.n. z ruskega Daljnega vzhoda je edina ruska vrsta sicer številnega rodu *Neoperla*. Predstavljamo njen opis in ilustracije, pa tudi kratek komentar in primerjavo z drugimi sorodnimi vrstami tega rodu.

**Introduction**

The stonefly fauna is much more diverse at the family level in the temperate climate compared to the tropical ones. The only diverse tropical family is Perlidae. The largest number of species belong to the genus *Neoperla* from South-East Asia. Recent studies and revisions of type material of this genus from the South-East Asian islands and the mainland, based on studies of inner penis armature, vaginal sclerites, and egg chorion, have revealed the great variety of this genus in the Oriental region (SIVÉC et al., 1988). Perlidae fauna is much poorer in the Palaearctic, and only one species of the genus *Neoperla* has been recorded so far from the Russian Far East. *Neoperla* sp. aff. *geniculata* Pictet (ZHILTZOVA & ZAPEKINA-DULKEIT, 1986) represented the northern border of distribution of genus *Neoperla* in the Palaearctic. In all probability as a single species in the area there were no problems with the determination, which is the reason for a rather late detailed study and comparison with related species. ZWICK (1984) has redescribed the female type of *Neoperla geniculata* (Pictet). UCHIDA (1990) presented a detailed study of the Japanese *Neoperla* species. A detailed study of penis armature, female vagina, and egg chorion have revealed a completely different species which is described here as new.

## Technical notes

Adults and larvae were studied with a Wild M-8 stereo dissecting microscope, and line drawings have been prepared with the aid of Wild- or Leitz-drawing equipment.

In the description, T and HT stand for tergite and hemitergite. Holotype and paratypes are deposited in the Zoological institute in St. Petersburg, Russia. Four paratypes are deposited in the stonefly collection of the Slovene Museum of Natural History in Ljubljana, Slovenia.

The cold maceration technique (ZWICK, 1983) was used for the eversion of the internal penis sac.

### *Neoperla ussurica* spec. nov.

Figs. 1-8

1986 *Neoperla* sp. aff. *geniculata* Zhiltzova & Zapekina-Dulkeit, Opredelelil Nasekomych Dalnego Vostoka SSSR: 191, figs. 1-3.

**Material:** Holotype male: Russia, Primorskiy Kray, river Ussuri, 6 km from village Stepanovka, 26.VI.1988, leg. V. Teslenko. Paratypes: 1♂, 2♀, (same locality), 26.6.1988, leg. V. Teslenko; 1♀, 3 larvae, r. Klya, 8 km from Marusinya, 30.7.1957; 4♂, 3♀, Blagoveshchensk, r. Seya, 2.8.1927, leg. A.Martynov; 1♂, r. Seya, 50 km from Blagoveshchensk, 7.1914, leg. Popov; 1♀, Khabarovsk, 8.7.1912, leg. Boromotov; 6♂, 5♀, r. Bikin, 9-16.7.1927, leg. Martynov; 1♂, r. Nayzukhe (tributary of r. Iman) near Novopokrovskaya, 1.8.1958; 16♂, 2♀, Yakovlevka, Ussuri Terr. (now Yakovlevka Distr., Primorskiy Kray), leg. Dyakonov, Filip'ev; 3♂, 5♀, Pokrovka, Verkhne-Suyfunski Distr. (now Oktyabr'sky Distr.), 10.8.1931, leg. V. Plater; 1♀, r. Shufan, 12 km from Chapigou, Primorskiy Kray, 12.8.1962, leg. Kovalev; 1♂, Voroshylov city (now Ussuriysk), Primorskiy Kray, 27.7.1956, leg. Kamenkova.

**Description:** Middle sized, yellowish coloured species. Front wing of males 11 mm, of females 14 mm long. Head pale, with two dark spots between ocelli and in front of M line. Ocelli about two diameters apart, closer to each other than to the eye margin. Antennae and palpi brown.

Pronotum pale, wider than long, with brown margins and dark stripe in the middle. Wings pale with darker venation.

Legs uniformly yellowish without special patterns, tarsal segments brown.

**Male:** T7 with dark raised spinulose area forming short square process opposite narrow raised process of T8, which is spinulose in front. T9 short, without spinules, covered only with long fine hairs. HT10 normal, with slender curved anterior process. Sternite and cerci unmodified.

The everted sac of penis long and slender. Tube distally with a pair of ventrolateral

outgrowth bearing spines. Sac at the base with a dorsal hump covered with spines. Ventroapical part of sac covered with spine patch.

**Female:** No external modifications. Vagina membranous, folded, extensible. Simple receptacle on raised large and strongly sclerotized central cone.

**Egg:** 0.45 mm long, elongate oval, collar short and wide, anchor attachment deeply concave. Chorion with many punctures arranged in straight rows between numerous straight bare ribs ending in the reticular structure at operculum.

**Nymphal proventriculus:** Anterior patch of spines with a sclerotized hump posteriorly. Hump with several irregularly arranged thick spines, directed caudally. Posterior spinules simple.

**Notes:** For the only species in the territory there were no problems with determination. *N. ussurica* sp.n. belongs to the *Neoperla montivaga* group (ZWICK, 1983) and is closely related to species of *Neoperla geniculata* complex (UCHIDA, 1990), however it clearly differs from all other known species by the presence of a dorsal outgrowth at the base of the sac.

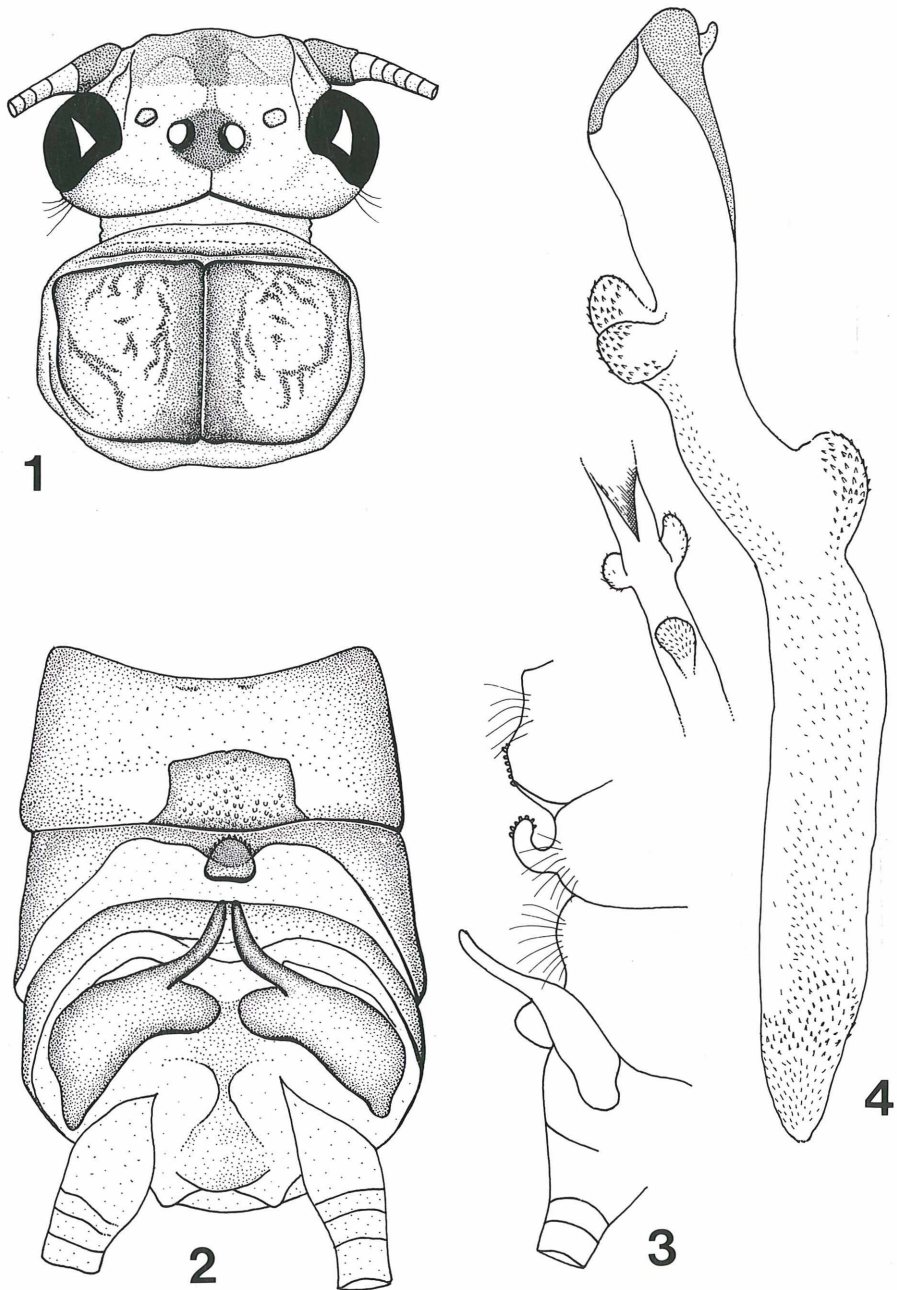
**Distribution:** Russian Far East: Chitinskaja Obl., Amurskaya Obl., Khabarovskiy Kray, Primorskiy Kray.

**Etymology:** Named after Russian river Ussuri.

**Acknowledgements:** We thank Dr. V. Teslenko for the loan of part of the material.

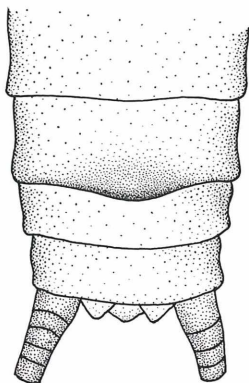
## References

- Illies J., 1966: Katalog der rezenten Plecoptera. Tierreich, 82: I-XXX, 632 pp.
- Sivec I., Stark B.P., S. Uchida, 1988: Synopsis of the World Genera of Perlinae (Plecoptera: Perlidae). *Scopolia*, 16: 1-66.
- Uchida ., 1990: A revision of the Japanese Perlidae (Insecta: Plecoptera), with special reference to their phylogeny. Thesis. Department of Natural History, Faculty of Science, Tokyo Metropolitan University. 228 pp.
- Zhiltzova L.A., J.I. Zapekina-Dulkeit, 1986: Opredelitel Nasekomykh Dalnego Vostoka SSSR. Plecoptera. *Vesnjanky I. Nauka*, Leningrad, pp. 172-234.
- Zwick P., 1973: Insecta: Plecoptera. Phylogenetisches System und Katalog. Tierreich, 94: XXXI +465 pp.
- Zwick P., 1983: The *Neoperla* of Sumatra and Java (Indonesia) (Plecoptera: Perlidae). *Spixiana*, 6: 167-204.
- Zwick P., 1984: Notes on Plecoptera (10). *Neoperla geniculata* (Pictet). *Aquatic Insects*, 6: 63-64.

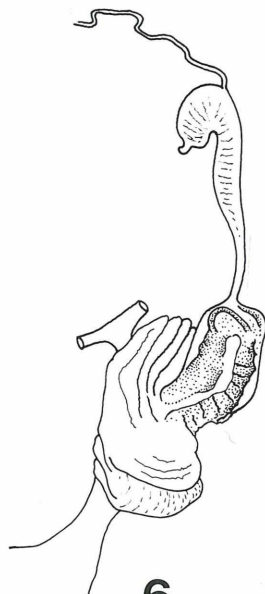


**Figs. 1-4:** *Neoperla ussurica* sp.n.: Head and prothorax (1); abdominal tip of male: dorsal view (2), lateral view (3); and everted penis in lateral view (4).

5



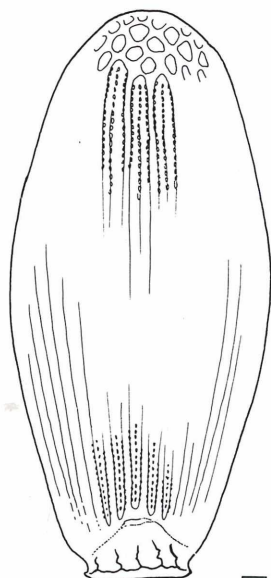
6



8



7



**Figs. 5-8:** *Neoperla ussurica* sp.n.: Abdominal tip of female (5); vagina in lateral view (6); egg (7) and anterior patch of spines in nymphal proventriculus (8).

Authors' addresses/Naslova avtorjev

Ignac SIVEC

Prirodoslovni muzej Slovenije

Prešernova 20, p.p. 290

SI-1001 Ljubljana, Slovenia

Lidia A. ZHILTZOVA

Zoological institute

Russian Academy of Science

St. Petersburg 199034, Russia

# ZOBODAT - [www.zobodat.at](http://www.zobodat.at)

Zoologisch-Botanische Datenbank/Zoological-Botanical Database

Digitale Literatur/Digital Literature

Zeitschrift/Journal: [Acta Entomologica Slovenica](#)

Jahr/Year: 1996

Band/Volume: [4](#)

Autor(en)/Author(s): Sivec Ignac, Zhiltzova

Artikel/Article: [Description of Neoperla ussurica sp. n. from Russian Far East \(Plecoptera: Perlidae\). Opis vrste Neoperla ussurica sp. n. z ruskega Daljnega vzhoda \(Plecoptera: Perlidae\) 13-18](#)