

## First record of *Pleuroxus pigroides* (Lilljeborg, 1901) in Russia

### Первая находка *Pleuroxus pigroides* (Lilljeborg, 1901) в России

N.N. Smirnov  
Н.Н. Смирнов

A.N. Severtsov Institute of Ecology and Evolution, Leninskii prospect 33, Moscow 119071 Russia.

Институт проблем экологии и эволюции им. А.Н. Северцова РАН, Ленинский проспект 33, Москва 119071 Россия.

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КЛЮЧЕВЫЕ СЛОВА: Cladocera, Chydoridae, распространение.

**ABSTRACT.** A second locality of *Pleuroxus pigroides* (Lilljeborg, 1901), initially described from southern Sweden, has been found in Lake Glubokoe, Moscow region, Russia.

**РЕЗЮМЕ:** Обнаружено второе местонахождение *Pleuroxus pigroides* (Lilljeborg, 1901) (в прибрежье оз. Глубокое, Московская область, Россия) после его первоначального описания из южной Швеции.

*Pleuroxus pigroides* (Lilljeborg, 1901) was found in a swamp near Uppsala in 1890 and 1896 and described as *Chydorus pigroides* Lilljeborg, 1901. Since then it has evaded carcinologists and limnologists. It has never been found again in Sweden, and was not recorded in thorough surveys of Denmark [Røen, 1995], Yorkshire [Fryer, 1993], the former Czechoslovakia [Šrámek-Hušek et al., 1962], Romania [Negrea, 1983], Italy [Margaritora, 1985], or Spain [Alonso, 1996]. Flössner [2000], in his recent treatment of the Cladocera of Germany, having examined Lilljeborg's material, included this species, referring to its sole occurrence in Sweden. It was omitted from the first edition of *Limnofauna Europea* [Hrbaček et al., 1967] but included in the second edition [Hrbaček et al., 1978]. Prószyńska [1978] lists a sole and questionable occurrence of *Chydorus pigroides* in Poland.

The only existing material of 55 specimens collected by Lilljeborg in a swamp near Uppsala in 1890, and 1 female collected in 1896 was studied later by Frey [1976], who correctly placed *C. pigroides* in the genus *Pleuroxus*.

In the course of a survey of the fauna of the water's edge of Lake Glubokoe (Moscow Area, Russia) in 2004, numerous individuals of this species were collected. This species may be identified by the characters given in the description below and in the detailed redescription made by Frey [1976].

*Pleuroxus pigroides* (Lilljeborg, 1901)  
Figs 1–11.

Lilljeborg, 1901: 571–573, Tab. 78, figs 10–14 (*Chydorus*); Frey, 1976: 89–97, Figs 1–9; Flössner, 2000: 268–270, Abb. 100.

**MATERIAL.** Over 50 ♀♀ from Lake Glubokoe (August–September 2004) and 1 ♂ (September 29, 2004).

**SLIDES.** In view of the obvious rarity of this species, reference specimens on slides were prepared in Canada balsam and deposited in the collection at the Zoological Museum of Moscow University: ♀♀ nos. 3711–3716, ♂ 3718, ephippium 3719. Specimens are not stained.

**DIAGNOSIS.** Females appear as a small *Pleuroxus*, up to 0.4 mm. In lateral view, the body elongated but rather high, ratio length:height 1.3:1 in my material and in previous authors. Rather compressed from sides. Rostrum long and pointed. Posterior end of shell rounded, no denticles. Ventral side of valve much less convex than the upper side, bulging very slightly before the middle, with a dense fringe of plumose setules. Valves sculptured very weakly. Labral lamella cuneiform, with clear but not pointed apex. Postabdomen rather short, blackish, with thin anal teeth, ca. 7. Its marked distinction is that it narrows after the preanal angle, which is thus clearly prominent. Its dorso-distal angle is rounded and rather protruding.

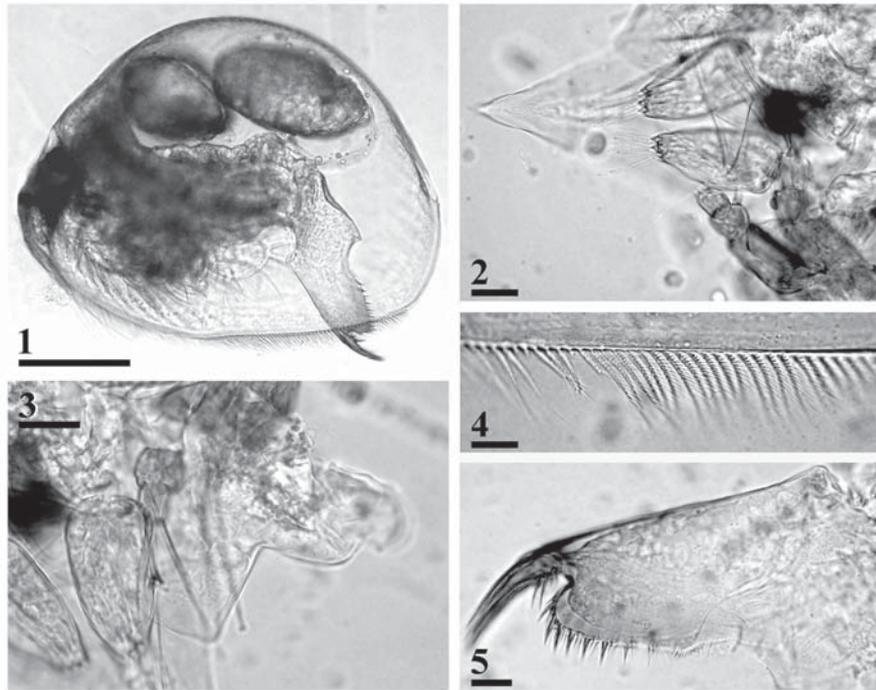
Ephippium (Fig. 11, slide 3719) imperfect, characteristic of the genus *Pleuroxus*.

Male smaller than females, oval in lateral view. Postabdomen generally not differing from that of females, with anal teeth.

The place where *P. pigroides* was collected in Lake Glubokoe is at the edge of the water, protected from the lake with a dense stand of *Carex* sp. Sampling was intended for surveying shallow-water invertebrate fauna and was started at two stations at the edge of the water, the second one being protected by *Phragmites*. After *P. pigroides* was found at station 1, collections were continued at this station only. An additional sample, taken on September 2 at the water's edge opposite to the Laboratory House, contained no specimens of *P. pigroides*. Each sample was about 2 l of water from the 5–6 cm deep zone. Water was yellow, pH 7.3 on August 31 and pH6 on September 29, conductivity 110 and 100 mS/cm on the same dates (determined by N.M. Korovchinsky with "Watercheck", Hanna Instruments). During the period of sampling the water level decreased by 10 cm and water receded from the shore. Most samples were taken after heavy rains, the last samples after cool nights (2–5°C).

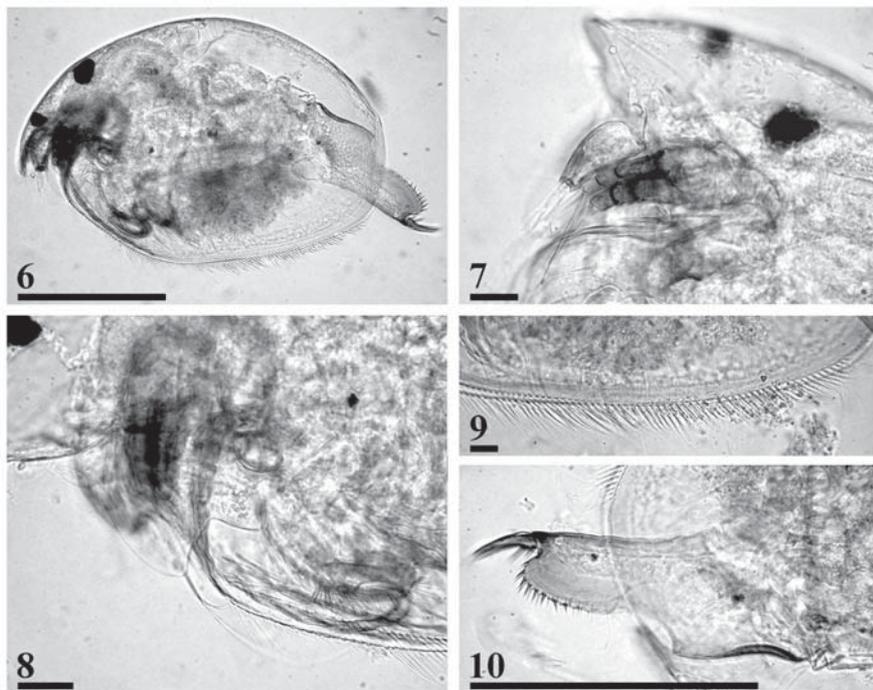
A stable population of *P. pigroides* was observed from early August till early November. Males were found in late September. Its abundance attained 6% of the total number of all invertebrates in a sample, approximately a few dozen individuals per liter.

*P. pigroides* was never recorded from Lake Glubokoe by previous authors. It was never seen by me in the course of my



Figs 1–5. *Pleuroxus pigroides* ♀ from Lake Glubokoe, August 9, 2004. 1 — lateral view; 2 — rostrum and antennulae; 3 — labrum and antennulae; 4 — part of the ventral side of valve; 5 — postabdomen. Scale: 1 — 0.1 mm, 2–5 — 0.01 mm. Photomicrographs were taken using a digital camera Olympus Camedia 4000 attached to a microscope Olympus CX41.

Рис. 1–5. *Pleuroxus pigroides* ♀ из озера Глубокое, 9 августа 2004 г. 1 — вид сбоку; 2 — рostrum и антеннулы; 3 — лабрум и антеннулы; 4 — часть вентрального края створки с щетинками; 5 — постабдомен. Масштаб: 1 — 0,1 мм, 2–5 — 0,01 мм.



Figs 5–10. *Pleuroxus pigroides* ♂ from Lake Glubokoe, September 29, 2004. 1 — lateral view; 2 — rostrum, antennula, and antenna; 3 — labrum and limb I; 4 — part of the ventral side of valve; 5 — postabdomen. Scale bar: 6, 10 — 0.1 mm, 7–9 — 0.01 mm.

Рис. 5–10. *Pleuroxus pigroides* ♂ из озера Глубокое, 29 сентября 2004 г. 1 — вид сбоку; 2 — рostrum, антеннула и антенна; 3 — лабрум и торакальная конечность первой пары; 4 — Часть вентрального края створки с щетинками; 5 — постабдомен. Масштаб: 6, 10 — 0,1 мм, 7–9 — 0,01 мм.

Table. *Pleuroxus pigroides* and its companion species at the water's edge of Lake Glubokoe in 2004 (percentages of the total number of invertebrates at each station).  
 Таблица. *Pleuroxus pigroides* и сопровождающие его виды в зоне уреза воды озера Глубокое в 2004 г. (проценты от общего числа беспозвоночных на каждой станции).

Station and date	1-7.VII	2-7.VII	2-24.VII	1-9.VIII	2- 9.VIII	1-19.VIII	1-2.IX	1-9.IX	1-29.IX	1-11.X	1-1.XI
<i>Acroperus harpae</i> s.l.			1		1				0.4		
<i>Alona affinis</i>			2				0.4				
<i>Alona costata</i>									0.4		
<i>Alonella exigua</i>									1		
<i>Camptocercus rectirostris</i>			2		1				0.9		
<i>Ceriodaphn. laticaudata</i>	0.5	2	9	16	20	25	30	19	6	1	
<i>Chydorus ovalis</i>	9	15		33		20	20	42	43	15	74
<i>Daphnia curvirostris</i>				16		20	3	10			
<i>Eurycercus lamellatus</i>	1		1	0.9	2						
<i>Graptoleber. testudinaria</i>	0.5		1						0.4		
<i>Kurzia latissima</i>			0.5		1						
<i>Lathonura rectirostris</i>							2		3	1	
<i>Megafenestra aurita</i>				1			0.5	1	1		
<i>Oxyurella tenuicaudis</i>	3	12	0.5	1		0.4			0.4		
<i>Picripleuroxus laevis</i>		12			1	0.5	0.5	0.4	1		
<i>Pleuroxus pigroides</i>				3		6	2.5	1.5	3		1
<i>Pleuroxus trigonellus</i>			24		4		0.5		0.4	21	
<i>Pleuroxus truncatus</i>			2		1						
<i>Pleuroxus uncinatus</i>	1										
<i>Polyphemus pediculus</i>		7							0.9		
<i>Pseudochyd. globosus</i>					1						
<i>Scapholeber. mucronata</i>	1	2	21	14	6				0.9		
<i>Simocephal. vetulus</i>	2		19		40	7	18	12	19	14	
Cyclopoida	60	4	6	9	12	17	12	8	10	20	15
Harpacticoida	0,5	3				0.5	0.5		0.4		0.9
Ostracoda	4	2	7		5		6			6	1
Other invertebrates	18	41	4	5	5	4	4	6	7	22	9

close observations on the littoral fauna of this lake, which started in 1971. *P. pigroides* was absent in my thorough annual surveys of the fauna of the water's edge made in 1979–1982 [Smirnov, 1983] and in the survey of littoral crustacea made by Sinev in 1994 [Sinev, 1997]. It may be added that another Scandinavian species was observed in the littoral zone of Lake Glubokoe — *Camptocercus fennicus* (Stenroos, 1898) — as three specimens in 1986 and 1993 but it has never been collected since.

It is hardly possible to appraise this record in the aspect of the problem of animal invasions, as the geographic range of *P. pigroides* remains unknown. In spite of his long sojourn in Denmark and other European countries and his special attention, *inter alia*, to the genus *Pleuroxus*, Frey never collected *P. pigroides*. I have never seen it in any other of my collections from Eurasia or other continents.

Whether the actual geographic range of *P. pigroides* is large or small remains unknown. Along with species with

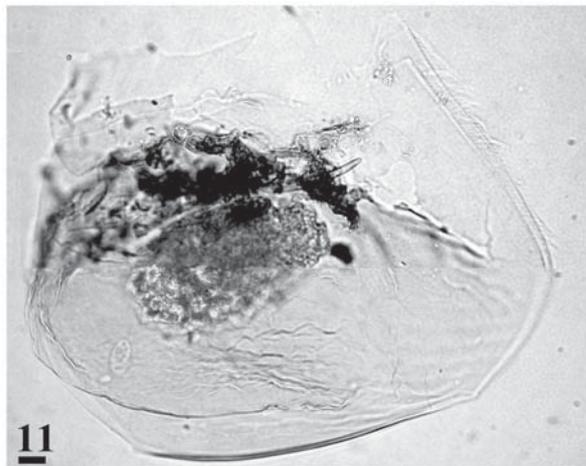


Fig. 11. Ephippium of *P. pigroides*, slide 3719. Scale 0.01 mm.  
Рис. 11. Эфиппиум *P. pigroides*, препарат 3719. Масштаб 0,01 мм.

reliably known wide geographic ranges there are species with very limited geographical ranges, e.g., *Tretocephala colletti* (Sars, 1895), confined to the Cape Province in Africa.

Finally, may I note that there are other similar cases where a described, reliable species has not been found later, e.g., *Macrothrix sibirica* Daday, 1901, collected as 25 females near Omsk (Siberia, Russia) [Smirnov, 1992].

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