

# *Bathysolen nubilus* (Fallen, 1807) (Hemiptera: Heteroptera: Coreidae): first record from the Republic of Buryatia (Eastern Siberia, Russian Federation) and extension of distribution

Elena V. Sofronova

Laboratory of Physical Geography and Biogeography, V.B. Sochava Institute of Geography SB RAS, Ulan-Batorskaya Str. 1, RF- 664033, Irkutsk, Russia  
 E-mail: [aronia@yandex.ru](mailto:aronia@yandex.ru)

**Abstract:** This study provides the first record of *Bathysolen nubilus* (Fallen, 1807) for the Republic of Buryatia (Russian Federation) and extends the known distribution of this species eastward in the Palaearctic region. *Bathysolen nubilus* is the only species of its genus that occurs in Eurasia. Specimens of *B. nubilus* were captured in dry grass meadows and forest edges located along the lower reach of the Selenga River. Data and figures of *B. nubilus* for the recognition of the species, as well as a map of collecting localities, are presented.

**Key words:** Palaearctic region; new record; leaf-footed bugs

Coreidae (leaf-footed bugs) is a large family in the suborder Heteroptera (order Hemiptera), represented by 2200 species belonging to 500 genera worldwide, and 344 species belonging to 84 genera in the Palaearctic Region (DOLLING 2006). The genus *Bathysolen* Fieber, 1860 is placed in the subfamily Pseudophloeinae and includes two species in the Palaearctic region: *B. nubilus* (Fallen, 1807) and *B. poppii* Bergevin, 1913. The current known geographic distribution of *B. poppii* is limited to Algeria (North Africa). *Bathysolen nubilus* is widespread in Europe, Southwest Asia, and Central Asia to Western Siberia (DOLLING 2006; VINOKUROV et al. 2010). In Eastern Siberia, the species was recorded in the southern Krasnoyarskii Krai around Minusinsk and Krasnoyarsk (VINOKUROV et al. 2010). This ground-dwelling coreid prefers dry and warm meadows and forest edges. *Bathysolen nubilus* feeds on various host plants and their seeds, but mainly members of the pea family (VINOKUROV & KANJUKOVA 1995).

The Republic of Buryatia occupies an area of 351,000 km<sup>2</sup> and is situated in Eastern Siberia (Russia), mostly in the boreal zone (taiga) with a predominance of coniferous forests.

The study area is located in central Buryatia along the lower reaches of the Selenga River, where forest-steppe

and steppe are the most common landscapes. The climate of the territory is dry, strongly continental, with large daily (15–20°C) and annual (from +40 to –40°C) fluctuations in temperature. The average annual temperature is –0.5°C. There is about 240 mm of rainfall throughout the year (LADEYSHCHIKOV 1977).

The materials collected came from floodplain groves of Japanese Elm (*Ulmus japonica* (Rehd.) Sarg) and their surroundings. *Ulmus japonica* is a relict species in Siberia. The main area of the Japanese Elm covers the Far East of Russia, Mongolia, China, and Japan. In Buryatia, this tree species grows only in the lower reaches of the Selenga River. These unique elm communities include some relicts typical of broad-leaved forests, including several species of lichens, mosses, xylophilic fungi, and insects (PLESHANOV et al. 2002).

Materials for this paper were collected in July 2015 at the edge of the elm forest around the villages of Yugovo (52°07'51.72"N, 107°05'46.41"E) and Ilinka (52°07'57.39"N, 107°19'30.66"E) (Figure 1). Techniques for collecting true bugs included sweeping vegetation using a collecting net and hand-collecting from grass (GOLUB et al. 2012). The specimens were killed with ethyl acetate soon after capture. In total, 14 males and 27 females were captured. The specimens were pinned or pasted, labeled, and some were photographed using a binocular microscope (LOMO MSP-2) and digital camera (Levenhuk C 310 NG).

Specimens were identified using the taxonomic keys of VINOKUROV & KANYUKOVA (1995) and HAYAM et al. (2010). Comparative studies in the extensive entomological collection of the Zoological Institute (Russian Academy of Sciences, St. Petersburg) confirmed the species identification.

The material was deposited in the entomological collection of laboratory of Physical Geography and Biogeography of the V.B. Sochava Institute of Geography (Irkutsk, Russian Federation).

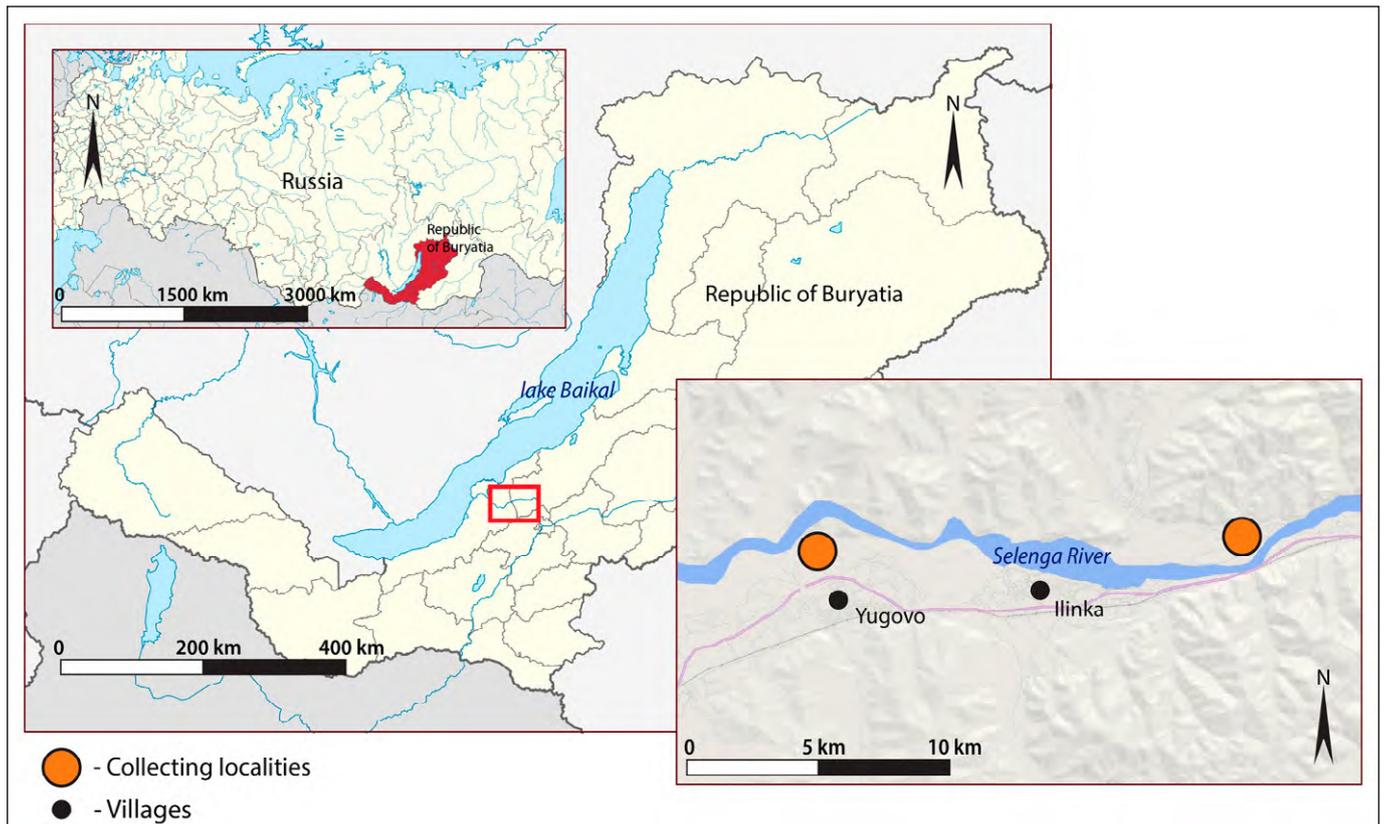


Figure 1. Map showing the collecting localities in Republic of Buryatia, Eastern Siberia, Russia.



Figure 2. Dorsal view of *Bathysolen nubilus*.

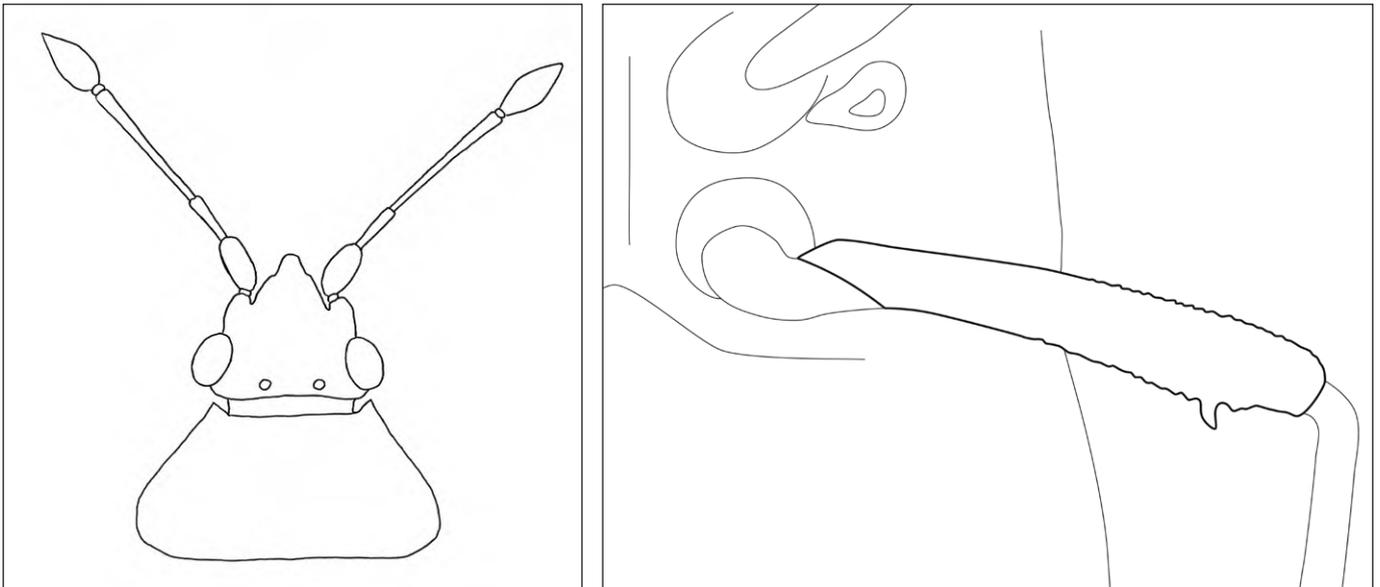
The particular characters placing *Bathysolen* in the subfamily Pseudophloeinae include head lacking a median sulcus in front of eyes (Figures 2, 3) and hind femur with single, large subapical tooth (Figure 4).

*Bathysolen* is distinguished from the other Siberian Pseudophloeinae (genera *Ulmicola* Kirkaldy, 1909, *Nemocoris* R.F. Sahlberg, 1848, and *Coriomeris* Westwood, 1842) by the several features: swollen, dark-brown first antennal segment not longer than the distance between the ocellus; third antennal segment 2–3 times longer than the fourth and 3–4 times longer than the second segment; fourth antennal segment fusiform, black with a brown end; and pronotum with pale indistinct pattern (Figures 2, 3).

Additionally, *Bathysolen* is distinguished from *Ulmicola* by the lack a sharp tooth on antennal tubercles. The second and third antennal segments of *Bathysolen* are thin and brownish-yellow as opposed to *Nemocoris*. *Bathysolen* is distinguished from *Coriomeris* by the lack a spines on lateral posterior angles of pronotum.

This record represents the easternmost distribution for the genus *Bathysolen*. As stated earlier, *B. nubilus* is widespread in Europe and some parts of Asia. The nearest currently known geographic localities of the species are in the vicinity of Krasnoyarsk and Minusinsk, which are more than 1000 km to the west of the new record (Figure 5).

It is likely that the natural conditions formed within the Japanese Elm forests in Eastern Siberia are most favourable for activity of the leaf-footed bugs.



Figures 3–4. *Bathysolen nubilus*. 3. Outline of head with antennae and pronotum. 4. Outline of hind femur with single large subapical tooth (ventral view).

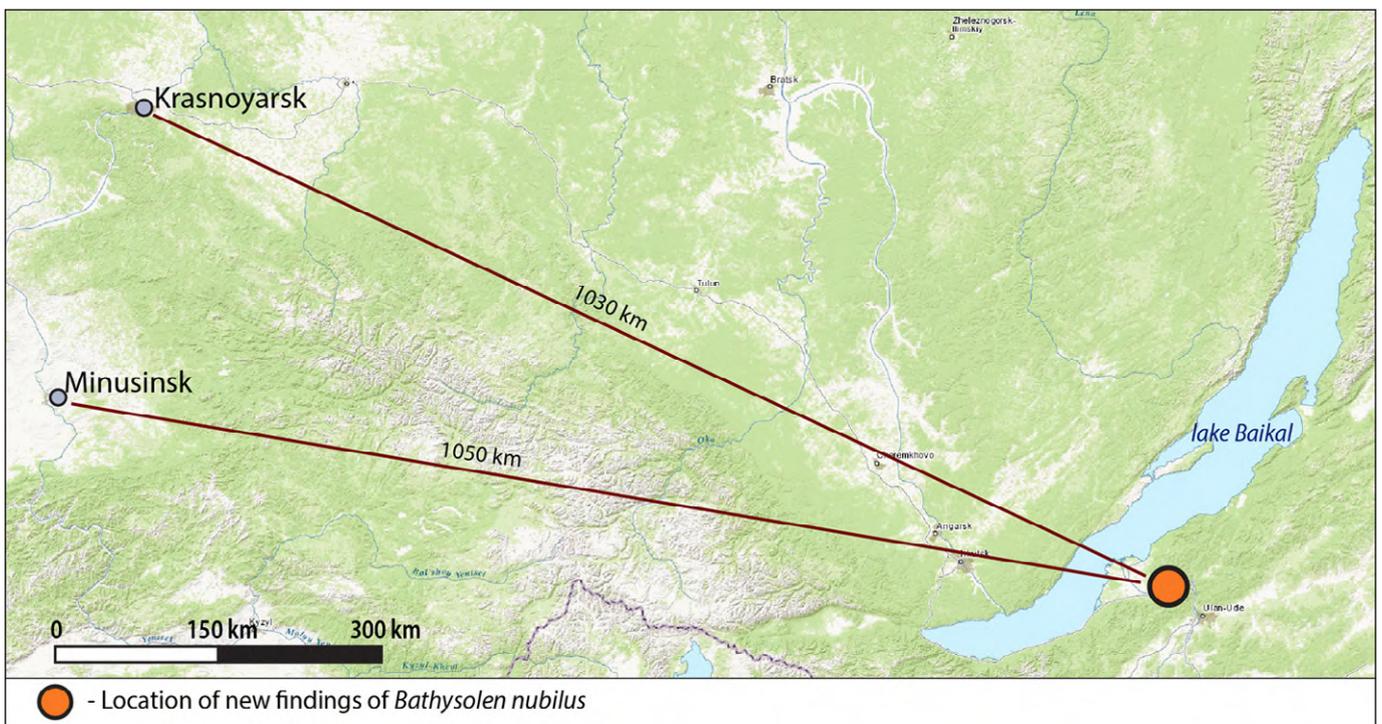


Figure 5. Map showing the distance between the nearest currently known geographic locations of *Bathysolen nubilus* and location of new findings.

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