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First record of *Lathrobium dilutum* Erichson, 1839 (Coleoptera: Staphylinidae) from the Urals

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Abstract. The rare rove beetle *Lathrobium dilutum* Erichson, 1839 (Coleoptera: Staphylinidae) is recorded from the Urals for the first time. The study is based on the material collected in Perm Krai using pitfall traps. For this study, 30 pitfall traps were deployed for five days in a garden plot within Perm City. This record of *Lathrobium dilutum* in Perm Krai extends its known range over 1,000 km eastward in Europe. In addition to *Lathrobium dilutum*, 59 beetle species from ten families were collected. The paper features photographs of the *Lathrobium dilutum* male and aedeagus.

Keywords: fauna, Perm Krai, pitfall traps, rove beetles, Russia

Первое указание *Lathrobium dilutum* Erichson, 1839 (Coleoptera: Staphylinidae) с Урала

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Аннотация. Редкий вид коротконадкрылых жуков *Lathrobium dilutum* Erichson, 1839 (Coleoptera: Staphylinidae) впервые указан для Урала и Пермского края на основе материала, собранного с помощью почвенных ловушек. В ходе исследования почвенные ловушки в количестве 30 штук были установлены на садовом участке в городе Перми, время их экспозиции составило пять дней. Новая находка *Lathrobium dilutum* в Пермском крае расширяет ареал его распространения в Европе на восток более чем на 1000 км. Вместе с *Lathrobium dilutum* было собрано 59 видов жуков из десяти семейств. Представлены фотографии самца *Lathrobium dilutum* и его эдеагуса.

Ключевые слова: фауна, Пермский край, почвенные ловушки, коротконадкрылые жуки, Россия

Introduction

The Holarctic genus *Lathrobium* Gravenhorst, 1802 (Coleoptera: Staphylinidae: Paederinae) is one of the most speciose genera of the subfamily Paederinae, comprising over 650 species, and is by far the most species-rich genus in the Palaearctic region, with approximately 600 species (Assing 2017; 2018; 2019).

The fauna of the genus *Lathrobium* in Russia has not been comprehensively revised, but it is known to include more than 50 species (Shavrin 2014; Ryabukhin 2015; 2018). At least five species of the genus are known from the Middle Urals (Ermakov et al. 2017; Sazhnev, Kozminykh 2023).

Materials and methods

Two specimens of *Lathrobium dilutum* Erichson, 1839 were collected using pitfall traps. Thirty traps were set in a garden plot in Perm City (Perm Krai, Middle Urals) with an exposure period from 24 to 29 July 2021; the specimens were collected on the final date. The pitfall traps consisted of 200 ml plastic cups (7 cm diameter, 10 cm height), filled with a 10 % sodium chloride solution as a fixative, and were arranged in a line spaced 1.5–2 m apart.

The aedeagus was cleared in lactic acid for several days. After removing excess membranes and tissues with dissecting needles, it was transferred to a clean portion of lactic acid for photography.

Photographs were taken with an Olympus DP23 6Mpx digital camera mounted on an Olympus CX43 compound microscope. Image stacking was performed using Zerene Stacker 1.04 software, and the final plates were composed using Inkscape.

The specimen is deposited in the collection of the Papanin Institute for Biology of Inland Waters, Russian Academy of Sciences, Borok, Yaroslavl Region, Russia (IBIW).

Results and discussion

Lathrobium (Lathrobium) dilutum Erichson, 1839 (Fig.)

Material examined: 1♂, 1♀, Russia: Perm Krai, Perm City, Malye Reki vill. (58.14948° N 56.46233° E), garden, pitfall traps, 24–29.07.2021 V.O. Kozminykh leg.

This finding represents the first record of this species in the Urals and the easternmost known locality for *Lathrobium dilutum* in Europe.

In Europe, *Lathrobium dilutum* is known from Austria, Belgium, Belarus, Czech Republic, Denmark, Estonia, Finland, France, Great Britain, Germany Hungary, Italy, Latvia, Lithuania, the Netherlands, Norway, Poland, Romania, Slovakia, Slovenia, and Sweden (Alexandrovitch et al. 1996; Schülke, Smetana 2015), as well as Russia. Within European Russia, this species had previously been recorded only from Moscow (Zakharov et al. 1989) and Kaluga (Semionenkov et al. 2015) Oblasts. The record of *Lathrobium dilutum* from Perm Krai extends its known distribution range eastward by more than 1,000 km.

Lathrobium dilutum is an extremely rare and localized species, typically inhabiting mole and rodent burrows (a botrobiont) in coastal biotopes, and less frequently found in vegetation debris along shorelines (Solodovnikov et al. 2021). The species is included in the Red List of Germany (Ries et al. 2021).

Together with *Lathrobium dilutum*, the following beetle species (59 species from 10 families, totally 426 exemplars, excluding Brentidae and Curculionidae) were collected: *Amara aenea* (DeGeer, 1774), *A. bifrons* (Gyllenhal, 1810), *A. communis* (Panzer, 1797), *A. familiaris* (Duftschmid, 1812), *A. montivaga* Sturm, 1825, *A. nitida* Sturm, 1825, *Anisodactylus binotatus* (Fabricius, 1787), *Badister bullatus* (Schrank, 1798), *Bembidion lampros* (Herbst, 1784), *B. quadrimaculatum* (Linnaeus, 1761), *B. properans* (Stephens, 1829), *Calathus erratus* (C.R. Sahlberg, 1827), *Harpalus affinis* (Schrank, 1781), *H. xanthopus winkleri* Schauburger, 1923, *H. rufipes* (De Geer, 1774), *Leistus ferrugineus* (Linnaeus, 1758), *L. terminatus* (Hellwig in Panzer, 1793), *Microlestes minutulus* (Goeze, 1777), *Notiophilus aquaticus* (Linnaeus, 1758), *N. palustris* (Duftschmid, 1812), *Ophonus laticollis* Mannerheim, 1825, *Pterostichus melanarius* (Illiger, 1798), *P. niger* (Schaller, 1783), *Syntomus truncatellus* (Linnaeus, 1761), *Synuchus vivalis* (Illiger, 1798)



Fig. Male of *Lathrobium dilutum* Erichson, 1839: A — habitus, dorsal view; B–C — aedeagus, ventral (B) and lateral (C) view

Рис. Самец *Lathrobium dilutum* Erichson, 1839: A — габитус, вид сверху; B–C — эдеагус, вид снизу (B) и сбоку (C)

(Carabidae, 181 exs., 25 species); *Cercyon lateralis* (Marsham, 1802), *Cryptopleurum subtile* Sharp, 1884, *Megasternum concinnum* (Marsham, 1802) (Hydrophilidae, 3 exs., 3 species); *Leiodes obesa* (Schmidt, 1841), *Ptomaphagus sericatus* (Chaudoir, 1845) (Leiodidae, 68 exs., 2 species); *Aleochara binotata* Kraatz, 1856, *Dinaraea angustula* (Gyllenhal, 1810), *Drusilla canaliculata* (Fabricius, 1787), *Ilyobates bennetti* Donisthorpe, 1914, *Pella limbatus* (Paykull, 1789), *Anotylus nitidulus* (Gravenhorst, 1802), *A. rugosus* (Fabricius, 1775), *Oxyporus rufus* (Linnaeus, 1758), *Rugilus rufipes* Germar, 1836, *Ontholestes murinus* (Linnaeus, 1758), *Philonthus albipes* (Gravenhorst, 1802), *Phosphuga atrata* (Linnaeus, 1758), *Silpha tristis* Illiger, 1798, *Stenus clavicornis* (Scopoli, 1763), *S. nanus* Stephens, 1833, *Tachyporus solutus* Erichson, 1839 (Staphylinidae, 107 exs., 16

species); *Stephostethus angusticollis* (Gyllenhal, 1827) (Latridiidae, 3 exs., 1 species); *Agriotes obscurus* (Linnaeus, 1758) (Elateridae, 1 ex., 1 species); *Olibrus bimaculatus* Küster, 1848 (Phalacridae, 1 ex., 1 species); *Chrysanthia viridissima* (Linnaeus, 1758) (Oedemeridae, 1 ex., 1 species). *Lagria hirta* (Linnaeus, 1758) (Tenebrionidae, 1 ex., 1 species); *Aphthona lutescens* (Gyllenhal, 1813), *Batophila rubi* (Paykull, 1799), *Chaetocnema hortensis* (Geoffroy, 1785), *Ch. sahlbergii* (Gyllenhal, 1827), *Longitarsus brunneus* (Duftschmid, 1825), *L. pratensis* (Panzer, 1784), *Neocrepidodera brevicollis* (Daniel, 1904), and *Phyllotreta armoraciae* (Koch, 1803) (Chrysomelidae, 60 exs., 8 species).

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