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New records of aquatic and riparian beetles (Coleoptera) for the fauna of the Vologda Oblast (Russia)

Новые находки водных и прибрежных жесткокрылых (Coleoptera) для фауны Вологодской области (Россия)

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KEY WORDS: Dytiscidae, Helophoridae, Hydrophilidae, Hydraenidae, Elmidae, Limnichidae, European Russia.

КЛЮЧЕВЫЕ СЛОВА: Dytiscidae, Helophoridae, Hydrophilidae, Hydraenidae, Elmidae, Limnichidae, Европейская часть России.

ABSTRACT. Thirty species of aquatic and riparian beetles (Coleoptera) from six families: Gyrinidae (1 species), Dytiscidae (14), Helophoridae (2), Hydrophilidae (5), Hydraenidae (7), and Limnichidae (1) are recorded for the Vologda Oblast for the first time. *Ochthebius foveolatus* and *O. flavipes* are recorded for North European Territory of Russia for the first time. Record of *Gyrinus pullatus* from Vologda Oblast is the southernmost in European part of Russia. The presence of *Enochrus bicolor* and *Riolus nitens* in the Vologda Oblast is confirmed by new findings.

РЕЗЮМЕ. Для Вологодской области впервые приводится 30 видов водных и прибрежных жесткокрылых (Coleoptera) из 6 семейств: Gyrinidae (1 вид), Dytiscidae (14), Helophoridae (2), Hydrophilidae (5), Hydraenidae (7), и Limnichidae (1). *Ochthebius foveolatus* и *O. flavipes* впервые приводятся для севера Европейской части России. Находка *Gyrinus pullatus* из Вологодской области — самая южная для Европейской части России. Обитание *Enochrus bicolor* и *Riolus nitens* на территории Вологодской области подтверждено новыми находками.

Introduction

The present paper continues our previous research of aquatic and riparian beetles of the Vologda Oblast [Prokin et al., 2016; Sazhnev et al., 2019a, b, 2020; Philippov et al., 2021]. In 2020–2021 aquatic and riparian beetles (Coleoptera) were collected in 16 municipal districts of the Vologda Oblast (north-eastern European Russia). A part of them is recorded for the Vologda Oblast for the first time, what determined the necessity of this publication.

Material and methods

The study is mostly based on the material collected in the Vologda Oblast from May to September 2020–2021 in more than 80 localities in different types of macrohabitats: lowland rivers and streams, mires, lakes and puddles etc. (Figs 1–6).

Different methods were used for material sampling: sweeping with the Balfour-Brown aquatic net, collecting of individuals with aquarium nets in shallow water bodies, "trampling" of *Sphagnum* beds, splashing of the shores of water bodies; and using a thermophotoeclector for substrate samples, with 15 days exposure time [Golub et al., 2021; Philippov et al., 2017].

For estimation of potential of hydrogen (pH) and total dissolved solids concentration (TDS, ppm) was used a digital water quality tester EZ9908. The mire groundwater level was measured with a ruler (from the mire surface).

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

The materials were examined using a Micromed MC-5-ZOOM LED and Leica M165C stereomicroscopes. The photographs of habitus were taken by A.S. Sazhnev with the Canon EOS 4000D camera and Laowa 2.5 mm F 2.8 Ultra-Macro 2.5–5.0X objective or with the Leica

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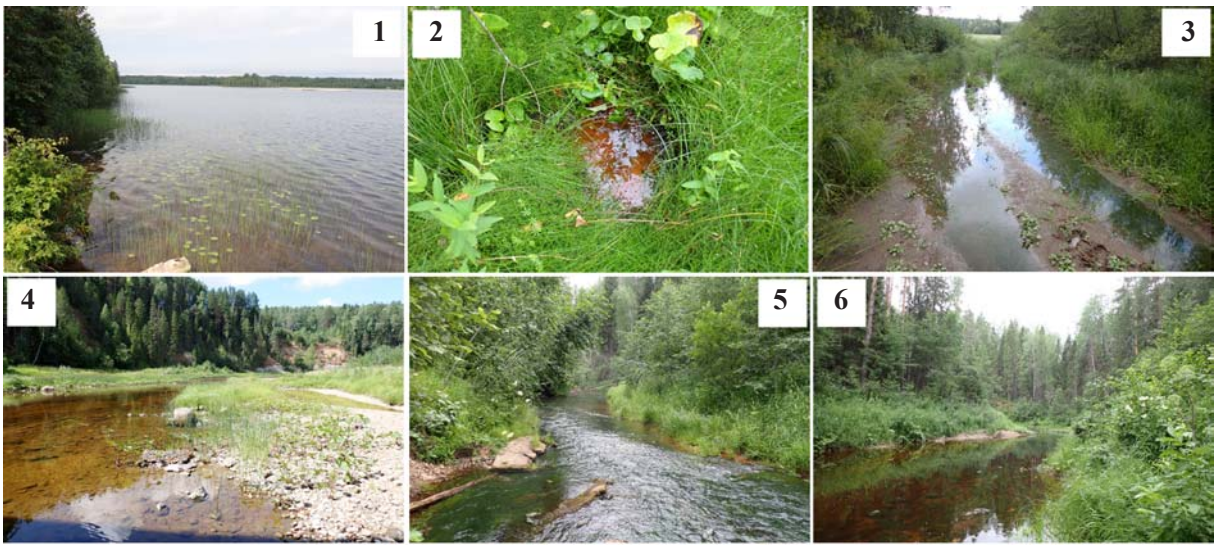


Figs 1–6. Habitats of aquatic and riparian beetles in the Vologda Oblast: 1 — Pertozero Lake (*Gyrinus pullatus*); 2 — Buzul´nikovoe mire, spring puddle (*Ilybius wasastjernae*); 3 — surroundings Bokrylovo vill., puddle on the road (*Limnebius crinifer*, *Ochthebius flavipes*); 4 — Strel´na River (*Ochthebius foveolatus*); 5 — Bol´shaya Salanga River (*Ilybius crassus*, *Helophorus discrepans*, *H. flavipes*, *Laccobius colon*, *Ochthebius alpinus*, *O. remotus*); 6 — Bol´shaya Bobrovka River (*Riolus nitens*). Photographs 1–4 by D.A. Philippov; 5, 6 — by A.S. Komarova.

Рис. 1–6. Местообитания водных и прибрежных жесткокрылых в Вологодской области: 1 — Озеро Пертозеро (*Gyrinus pullatus*); 2 — Бузульниковое болото, весенняя лужа (*Ilybius wasastjernae*); 3 — окрестности д. Бокрылово, лужа на дороге (*Limnebius crinifer*, *Ochthebius flavipes*); 4 — р. Стрельна (*Ochthebius foveolatus*); 5 — р. Большая Саланга (*Ilybius crassus*, *Helophorus discrepans*, *H. flavipes*, *Laccobius colon*, *Ochthebius alpinus*, *O. remotus*); 6 — р. Большая Бобровка (*Riolus nitens*). Фотографии 1–4 — Д.А. Филиппов; 5, 6 — А.С. Комарова.

MC170 HD (12MPs) digital microscope camera using the extended focus technology (Helicon Focus 7.7.4).

The abbreviations of the collectors names are accepted in the text: AK — A.S. Komarova, DP — D.A. Philippov. Russian names for different types of inhabited localities are translated as: city or town for “gorod”, rural locality for “selo”, settlement for “posyolok”, and village (abbreviation — vill.) for “derevnya”.

In addition to true water beetles ecological group, the list includes riparian beetles (Limnichidae) sensu M.A. Jäch [1998]. The sequence of the higher taxa and subdivisions of Russia are based on the Catalogue of Palaearctic Coleoptera [Fikáèek et al., 2015a–b; Jäch, 2015; Hernando, Ribera, 2016; Jäch, Kodada, 2016; Hájek, 2017].

Thirty species (marked *) are recorded for the Vologda Oblast for the first time. The list of species is presented below.

Results

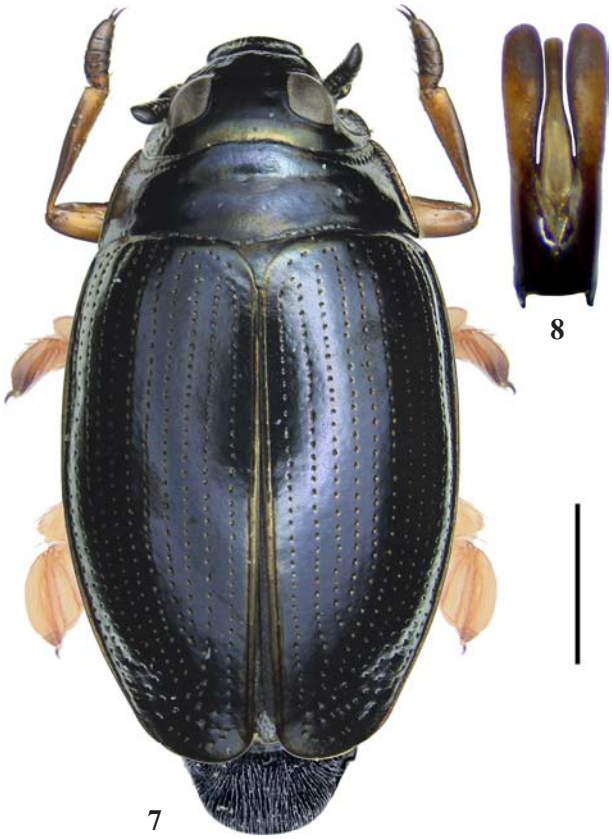
List of species

Family Gyrinidae Latreille, 1810

**Gyrinus* (*Gyrinus*) *pullatus* Zaitsev, 1908
Figs 7–8.

MATERIAL. ***Vozhegodsky distr.:*** 3 km N of Myshchinskaya vill., Pertozero Lake, 60°42´12˝N 39°36´11˝E, littoral (depth 0.1–0.3 m, sandy-rocky bottom), 10.VII.2020; 1 ex. DP.

NOTE. This record is the southernmost in European part of Russia. Previously this species was recorded for European Russia from the Republic of Karelia (Silfverberg, 2004; Dyadichko, 2013).



Figs 7–8. *Gyrinus pullatus*: 7 — habitus, 8 — aedeagus, dorsal view. Scale bar: 1.0 mm.

Рис. 7–8. *Gyrinus pullatus*: 7 — габитус, 8 — эдеагус, сверху. Масштаб: 1.0 мм.

Family Dytiscidae Leach, 1815

**Agabus* (*Acatodes*) *pseudoclypealis* Scholz, 1933

MATERIAL. ***Sokolsky distr.***: 2.1 km SE of Gorbovo vill., Votcha River, 59°36′51″N 41°16′00″E, ripal (sandy bottom, pH=8.4, TDS=57 ppm), 13.VII.2020; 1 ex., AK, DP.; ***Tarnogsky distr.***: Tarnogsky Gorodok rural locality, Kirova str., 60°30′04″N 43°34′04″E, artificial pool in a plastic container (depth 0.3 m) in a backyard, 16.VII.2020, 1 ex., AK, DP; 0.6 km SW of Kvashninskaya vill., 60°29′03″N 43°05′50″E, stream (sandy bottom, depth 0.1 m, pH=7.7), 19.VI.2020, 2 exs., AK, DP. ***Verkhovazhsky distr.***: 5 km SW of Smetanino rural locality, 60°36′41″N 41°45′32″E, pools (clay bottom, depth 0.01–0.1 m), 29.VI.2020, 1 ex., DP.

**Agabus* (*Gaurodytes*) *guttatus* (Paykull, 1798)

MATERIAL. ***Kharovsky distr.***: 0.6 km NW of Martynovskaya vill.; 59°49′13.5″N 40°00′55.5″E, stream (sandy-rocky bottom, depth 0.1 m, pH=7.6, TDS=177 ppm), 21.VIII.2020, 1 ex., DP, AK. ***Kichmengsko-Gorodetsky distr.:*** 3.8 km N of Podgorka vill., 60°05′18″N 45°53′38″E, stream (sandy bottom, pH=7.8), 15.VII.2020; 3 exs., AK, DP. **3)** ***Nyuksensky distr.:*** 3 km E of Levash settlement, Naren'ga River, 60°31′19″N 44°56′31″E, ripal (depth 0.1 m, pH=8.2), 16.VII.2020, 5 exs., AK, DP. ***Vytegorsky distr.:*** 4 km SE of Sperovo vill., Tagazhma River, 60°52′52.0″N 36°35′18.5″E, spring puddles along the edge of the river bed (depth 0.1 m, silty bottom, pH=7.1, TDS=163 ppm), 1.IX.2020, 1 ex., DP, AK; 1.4 km E of Konetskaya vill, Piyavochnoe aapa mire, 60°46′57″N 36°50′37″E, flarks (depth 0.05–0.15 m, peaty bottom, pH=6.5–6.8, TDS=12 ppm), 3.IX.2020, 2 exs., AK, DP; 7 km SE of Depo settlement, Kolaruchey spring, 60°53′14″N 36°57′32″E, (depth 0.1 m, sandy-rocky bottom, TDS=160 ppm), 3.IX.2020, 1 ex., DP, AK.

**Ilybius crassus* C.G. Thomson, 1856

MATERIAL. ***Kichmengsko-Gorodetsky distr.:*** 2.8 km NE of Grigorovo vill., Chiryadka River, 59°49′29″N 45°34′36″E, (rocky bottom, depth 0.2–0.5 m, pH=7.7, TDS=95 ppm), 15.VII.2020, 1 ex., DP, AK. ***Nyuksensky distr.:*** 3 km E of Levash settlement, Naren'ga River, 60°31′19″N 44°56′31″E, ripal (depth 0.1 m, pH=8.2), 16.VI.2020, 1 ex., AK, DP. ***Sokolsky distr.:*** 4.5 km NE of Markovskoe vill., Alekseevskoe-1 raised bog, 59°27′11″N 40°31′05″E, secondary hollow-pools (pH=4.7, TDS=10 ppm), 11.V.2020, 1 ex., AK, DP. ***Tarnogsky distr.:*** Tarnogsky Gorodok rural locality, Kirova str.; 60°30′04″N 43°34′04″E, artificial pool in a plastic container (depth 0.3 m) in a backyard, 16.VI.2020, 4 exs., DP, AK; 2.6 km N of Sergievskaya vill., Bol'shaya Salanga River, 60°16′02″N 43°55′48″E, ripal (depth 0.3–0.7 m, current velocity 0.01–0.2 m/s, pH=7.9, sandy-rocky bottom), 17.VII.2020, 1 ex., AK; 0.5 km W of Pyatovskaya vill., Uloshka River, 60°25′33″N 43°38′51″E, ripal (depth 0.1 m, pH=6.3), 18.VII.2020, 1 ex., AK, DP; 1 km W of Nikolaevskaya vill., 60°29′38″N 43°31′58″E, puddle on the road (depth 0.01–0.1 m, sandy bottom), 19.VII.2020, 1 ex., DP, AK; 1.1 km W of Naumovskaya vill., Pocha River, 60°41′44″N 43°05′48″E, in the riverbed (depth 0.1–0.5 m, current velocity 0.01–0.1 m/s, pH=7.8, sandy-rocky bottom with silt), 20.VII.2020, 1 ex., DP, AK. ***Velikoustyugsky distr.:*** 4 km SE of Verkhnyaya Toz'ma vill., Bol'shaya Toz'ma River, 60°33′07″N 45°14′57″E, ripal (sandy-rocky bottom, pH=7.8), 16.VII.2020, 1 ex., AK, DP. ***Verkhovazhsky distr.:*** 5 km SW of Smetanino rural locality, 60°36′41″N 41°45′32″E, power line, puddles (clay bottom, depth 0.01–0.1 m), 29.VII.2020, 1 ex., DP.

**Ilybius similis* Thomson, 1856

MATERIAL. ***Nyuksensky distr.:*** 3 km E of Levash settlement, Naren'ga River, 60°31′19″N 44°56′31″E, (depth 0.1 m, pH=8.2), 16.VII.2020, 1 ex., AK, DP.

**Ilybius subaeneus* Erichson, 1837

MATERIAL. ***Tarnogsky distr.:*** 1 km W of Nikolaevskaya vill.; 60°29′38″N 43°31′58″E, puddle on the road (depth 0.01–0.1 m, sandy bottom), 19.VII.2020, 1 ex., DP, AK. ***Vologda city:*** Chernyshevskogo str., 59°14′53″N 39°53′55″E, at the light, 12.VIII.2021, 1 ex., DP, AK.

**Ilybius wasastjernae* C.R. Sahlberg, 1824

MATERIAL. ***Verkhovazhsky distr.:*** 1.9 km S of Dyakonovskaya vill., Buzul'nikovoe mire, 60°41′27″N 42°35′15″E, forested spring fen, spring puddles (depth 0.1 m, peaty bottom, pH=7.6, TDS=390 ppm), 30.VII.2020, 1 ex., DP.

**Rhantus notaticollis* (Aubé, 1837)

MATERIAL. ***Vologodsky distr.:*** 0.4 km SW of Esyunino vill., 59°38′54.5″N 39°17′27.0″E, puddle in the roadside (depth 0.01–0.1 m, clay bottom), 19.VIII.2020, 1 ex., DP, AK.

**Oreodytes septentrionalis* (Gyllenhal, 1826)

MATERIAL. ***Velikoustyugsky distr.:*** 4 km SE of Verkhnyaya Toz'ma vill., Bol'shaya Toz'ma River, 60°33′07″N 45°14′57″E, ripal (depth 0.1 m, sandy-rocky bottom, pH=7.8), 16.VII.2020, 1 ex., AK, DP.

**Hydroporus discretus* Fairmaire et Brisout, 1859

MATERIAL. ***Tarnogsky distr.:*** 2.6 km N of Sergievskaya vill.: Bol'shaya Salanga River, 60°16′02″N 43°55′48″E, ripal and on the sandbar (depth 0.3–0.7 m, current velocity 0.01–0.2 m/s, pH=7.9, sandy-rocky bottom), 17.VII.2020, 1 ex., DP, AK ***Ust-Kubinsky distr.:*** 0.3 km SW of Kuznetsovo vill., 59°43′17.5″N 39°48′21.0″E, puddle in the roadside of a dirt road (depth 0.1–0.2 m, clay bottom, pH=8.0, TDS=195 ppm), 21.VIII.2020, 4 exs., DP, AK. ***Vytegorsky distr.:*** 6.1 km NE of Pankratovo vill., Indomanka River, 60°48′20″N 38°03′59″E, puddle in the roadside of a dirt road (depth 0.1–0.3 m, clay bottom, pH=7.4, TDS=76 ppm), 1.IX.2020, 10 exs., DP, AK. 1.4 km E of Konetskaya vill, Piyavochnoe aapa mire, 60°46′57″N 36°50′37″E, flarks (depth 0.05–0.15 m, peaty bottom, pH=6.5–6.8, TDS=12 ppm), 3.IX.2020, 11 exs., AK, DP.

**Hydroporus memnonius* Nicolai, 1822

MATERIAL. ***Velikoustyugsky distr.:*** 4 km SE of Verkhnyaya Toz'ma vill., Bol'shaya Toz'ma River, 60°33′07″N 45°14′57″E, ripal (depth 0.1 m, sandy-rocky bottom, pH=7.8), 16.VII.2020, 1 ex., AK, DP.

**Hydroporus nigrita* (Fabricius, 1792)

MATERIAL. ***Kharovsky distr.:*** western part of Kharovsk town, 59°57′15″N 40°09′50″E, river (depth 0.2 m, sandy-rocky bottom, pH=7.4, TDS=230 ppm), 21.VIII.2020, 1 ex., DP, AK. ***Velikoustyugsky distr.:*** 4 km SE of Verkhnyaya Toz'ma vill., Bol'shaya Toz'ma River, 60°33′07″N 45°14′57″E, ripal (depth 0.1 m, sandy-rocky bottom, pH=7.8), 16.VII.2020, 2 exs., AK, DP. ***Verkhovazhsky distr.:*** 5 km SW of Smetanino rural locality, 60°36′41″N 41°45′32″E, power line, puddles (clay bottom, depth 0.01–0.1 m), 29.VII.2020, 2 exs., DP.

**Hydroporus planus* (Fabricius, 1781)

MATERIAL. ***Kharovsky distr.:*** western part of Kharovsk town, 59°57′15.5″N 40°09′51.0″E, puddle in the roadside of an asphalt road (depth 0.1 m, clay-silty bottom, pH=8.2, TDS=240 ppm), 21.VIII.2020, 1 ex., DP, AK.

**Graptodytes granularis* (Linnaeus, 1767)

MATERIAL. ***Syamzhensky distr.:*** 0.2 km SE of Vasilyevskaya vill., Yakhren'ga River, 60°12′50″N 41°18′58″E, river (depth 0.1–0.2 m, rocky bottom, pH=7.4, TDS=62 ppm), 30.VIII.2020, 1 ex., DP, AK. ***Ust-Kubinsky distr.:*** 0.3 km SW of Kuznetsovo vill., 59°43′17.5″N 39°48′21.0″E, puddle in the roadside of a dirt road (depth 0.1–0.2 m, clay bottom, pH=8.0, TDS=195 ppm), 21.VIII.2020, 1 ex., DP, AK.

**Laccophilus minutus* (Linnaeus, 1758)

MATERIAL. ***Gryazovetsky distr.:*** 0.8 km SE of Zimnyak vill., Lezha River, 59°05′44″N 40°24′12″E, ripal (depth 0.1–0.2 m, clay bottom, pH=7.4, TDS=240 ppm), 24.VIII.2020, 1 ex., DP, AK.

Family Helophoridae Leach, 1815

*Helophorus (Rhopalohelophorus) discrepans Rey, 1885

MATERIAL. ***Gryazovetsky distr.:*** 0.5 km SW of Fedorkovo vill., Lukhta River, 59°01′56″N 40°15′46″E, (depth 0.1–0.4 m, clay-silty bottom, pH=7.7, TDS=318 ppm), 23.VIII.2020, 1 ex., AK, DP. ***Syamzhensky distr.:*** 1.1 km SEE of Staraya vill., 59°56′02″N 41°15′15″E, puddle (depth 0.1–0.3 m, clay bottom, pH=7.3, TDS=31 ppm), 28.VIII.2020, 1 ex., DP. ***Tarnogsky distr.:*** 2.6 km N of Sergievskaya vill., Bol'shaya Salanga River, 60°16′02″N 43°55′48″E, ripal and on the sandbar (depth 0.3–0.7 m, current velocity 0.01–0.2 m/s, pH=7.9, sandy-rocky bottom), 17.VII.2020, 2 exs., DP, AK; 1 km W of Nikolaevskaya vill., 60°29′38″N 43°31′58″E, puddle (depth 0.01–0.1 m, sandy bottom), 19.VII.2020, 7 exs., DP, AK. ***Ust-Kubinsky distr.:*** 1 km SE of Bokrylovo vill., 59°41′40.0″N 39°51′36.5″E, puddle (depth 0.1 m, clay-silty bottom, pH=9.7, TDS=85 ppm), 21.VIII.2020, 25 exs., DP, AK.

*Helophorus (Rhopalohelophorus) flavipes (Fabricius, 1792)

MATERIAL. ***Gryazovetsky distr.:*** 0.5 km SW of Fedorkovo vill., Lukhta River, 59°01′56″N 40°15′46″E, river (depth 0.1–0.4 m, clay-silty bottom, pH=7.7, TDS=318 ppm), 23.VIII.2020, 11 exs., AK, DP. ***Tarnogsky distr.:*** 2.6 km N of Sergievskaya vill., Bol'shaya Salanga River, 60°16′02″N 43°55′48″E, ripal and on the sandbar (depth 0.3–0.7 m, current velocity 0.01–0.2 m/s, pH=7.9, sandy-rocky bottom), 17.VII.2020, 1 ex., DP, AK; 0.4 km W of Pyatovskaya vill., 60°25′32″N 43°38′55″E, sown field edge, puddles, 18.VII.2020, 1 ex., AK, DP; 0.5 km W of Pyatovskaya vill., Uloshka River, 60°25′33″N 43°38′51″E, stream (depth 0.1 m, pH=6.3), 18.VII.2020, 1 ex., AK, DP; 4 km SE of Krasnoe rural locality, near Aksenovskaya abandoned built-up area, Uftyuga River, 60°29′44″N 43°17′28″E, shore of the river (depth 0.1–0.5 m, current velocity 0.01–0.1 m/s, pH=7.7, clay bottom), 18.VII.2020, 1 ex., DP, AK; same place; river backwater (depth 0.1–0.2 m, current velocity 0.01 m/s, pH=7.7, silty bottom), 18.VII.2020, 1 ex., DP, AK; 0.6 km SW of Kvashninskaya vill., 60°29′03″N 43°05′50″E, stream (sandy bottom, depth 0.1 m, pH=7.7), 19.VII.2020, 2 exs., AK, DP; 1.1 km W of Naumovskaya vill., Pocha River, 60°41′44″N 43°05′48″E, in the riverbed (depth 0.1–0.5 m, current velocity 0.01–0.1 m/s, pH=7.8, sandy-rocky bottom with silt), 20.VII.2020, 1 ex., DP, AK. ***Velikoustyugsky distr.:*** 4 km SE of Verkhnyaya Toz'ma vill., Bol'shaya Toz'ma River, 60°33′07″N 45°14′57″E, ripal (sandy-rocky bottom, pH=7.8), 16.VII.2020, 1 ex., AK, DP. ***Verkhovazhsky distr.:*** 5 km SW of Smetanino rural locality, 60°36′41″N 41°45′32″E, power line, puddles (clay bottom, depth 0.01–0.1 m), 29.VII.2020, 1 ex., DP.

Family Hydrophilidae Latreille, 1802

Enochrus (Lumetus) bicolor (Fabricius, 1792)

MATERIAL. ***Vozhegodsky distr.:*** env. Gridino vill., Vozhega River, ripal with sandy bottom, 31.VII.2016, 1 ex., D. Vtorushin.

NOTES. This species was recorded for the Vologda Oblast without locality information [Litovkin et al., 2021].

*Hydrobius rottenbergii Gerhardt, 1872 (Fig. 9)

MATERIAL. ***Verkhovazhsky distr.:*** 5 km SW of Smetanino rural locality, 60°36′41″N 41°45′32″E, power line, puddles (clay bottom, depth 0.01–0.1 m), 29.VII.2020, 1 ex., DP; Artemyevskaya (Koskovo) vill., near a sawmill; 60°44′25″N 41°37′06″E, spring outlets on the slope, spring puddles surrounded by grass-moss vegetation, 30.VII.2020, 1 ex., DP.

*Laccobius (Laccobius) colon (Stephens, 1829)

MATERIAL. ***Tarnogsky distr.:*** 2.6 km N of Sergievskaya vill., Bol'shaya Salanga River, 60°16′02″N 43°55′48″E, ripal and on the sandbar (depth 0.3–0.7 m, current velocity 0.01–0.2 m/s, pH=7.9, sandy-rocky bottom), 17.VII.2020, 1 ex., DP, AK.

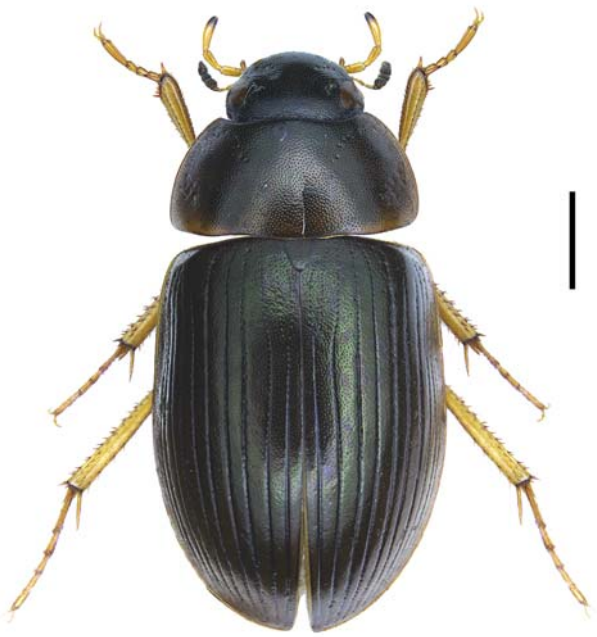


Fig. 9. *Hydrobius rottenbergii*. Scale bar: 1.0 mm.
Рис. 9. *Hydrobius rottenbergii*. Масштаб: 1.0 мм.

*Cercyon (Cercyon) marinus C.G. Thomson, 1853

MATERIAL. ***Gryazovetsky distr.:*** 0.6 km SE of Zimnyak vill., 59°05′47.5″N 40°24′13.5″E, puddle on the road at the edge of the field (depth 0.1 m, clay bottom, pH=7.6, TDS=68 ppm), 24.VIII.2020, 1 ex., DP, AK.

*Cercyon (Cercyon) tristis (Illiger, 1801)

MATERIAL. ***Babushkinsky distr.:*** 6.5 km NW of Yurmanga settlement, Ivachikha River, 59°48′48″N 43°00′58″E, ripal (sandy-rocky bottom, pH=8.2, TDS=83 ppm), 14.VII.2020, 1 ex., DP, AK. ***Gryazovetsky distr.:*** 0.5 km SW of Fedorkovo vill., Lukhta River, 59°01′56″N 40°15′46″E, ripal (depth 0.1–0.4 m, clay-silty bottom, pH=7.7, TDS=318 ppm), 23.VIII.2020, 1 ex., AK, DP.

*Cercyon (Cercyon) unipunctatus (Linnaeus, 1758)

MATERIAL. ***Gryazovetsky distr.:*** 0.6 km SE of Zimnyak vill., 59°05′47.5″N 40°24′13.5″E, puddle on the road at the edge of the field (depth 0.1 m, clay bottom, pH=7.6, TDS=68 ppm), 24.VIII.2020, 15 exs., DP, AK.

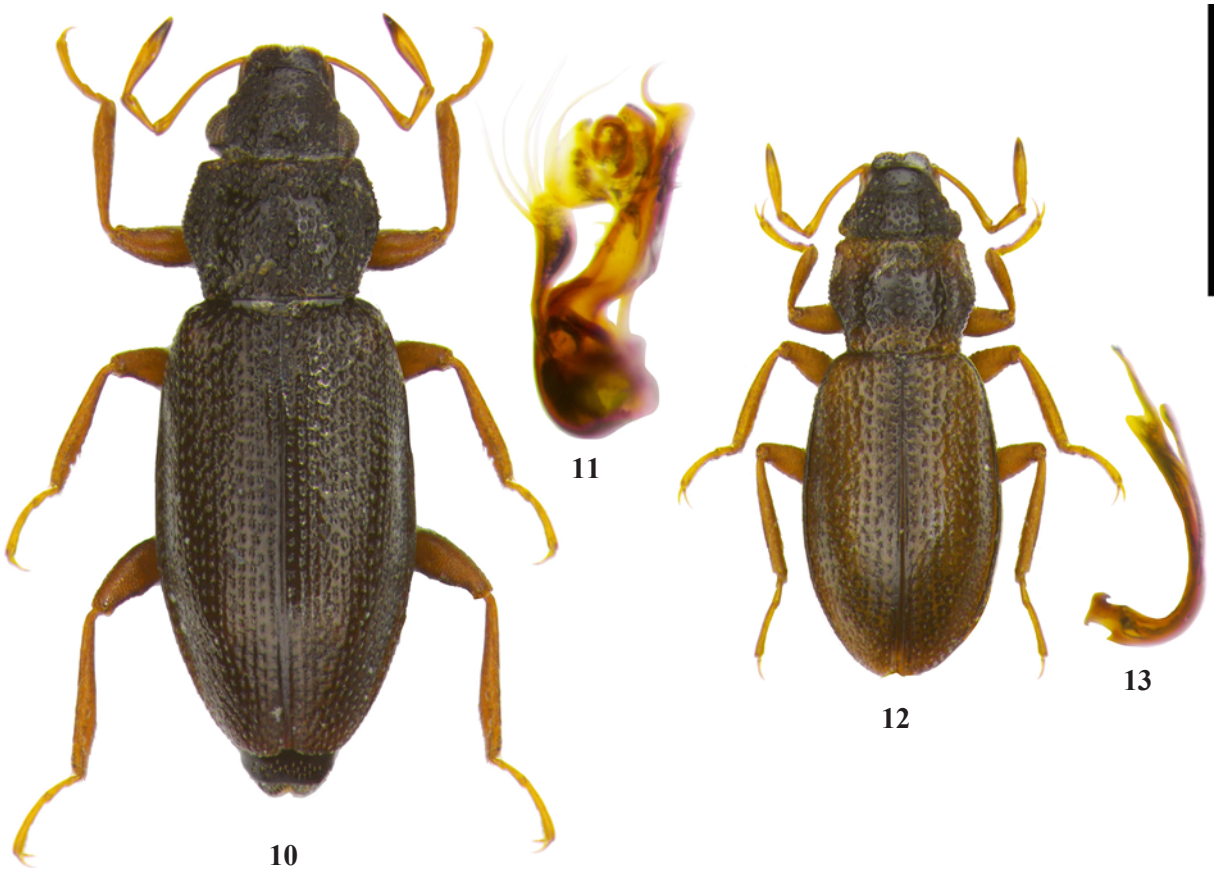
Family Hydraenidae Mulsant, 1844

*Hydraena (Hydraena) britteni Joy, 1807
Figs 10–11.

MATERIAL. ***Velikoustyugsky distr.:*** 4 km SE of Verkhnyaya Toz'ma vill., Bol'shaya Toz'ma River, 60°33′07″N 45°14′57″E, ripal (sandy-rocky bottom, pH=7.8), 16.VII.2020, 7 exs., AK, DP.

*Hydraena (Hydraena) pulchella Germar, 1824
Figs 12–13.

MATERIAL. ***Tarnogsky distr.:*** 4 km SE of Krasnoe rural locality, near Aksenovskaya abandoned built-up area, Uftyuga River, 60°29′44″N 43°17′28″E, in the riverbed near the water′s edge (depth 0.1–0.5 m, current velocity 0.01–0.1 m/s, pH=7.7, clay bottom), 18.VII.2020, 1 ex., DP, AK. ***Vozhegodsky distr.:*** 3 km W of Bukhara vill., Chuzhga River, 60°32′53″N 39°43′09″E, shore of the river (depth 0.1–0.5 m, current velocity 0.01–0.3 m/s, pH=8.3, TDS=62 ppm, sandy-rocky bottom), 9.VII.2020, 1 ex., DP.



Figs 10–13. *Hydraena* spp.: 10–11 — *Hydraena britteni*; 12–13 — *H. pulchella*; 10, 12 — habitus; 11, 13 — aedeagus, lateral view. Scale bar: for 10, 12 — 1.0 mm; for 11, 13 — 0.3 mm.

Рис. 10–13. *Hydraena* spp.: 10–11 — *Hydraena britteni*; 12–13 — *H. pulchella*; 10, 12 — габитус; 11, 13 — эдеагус, сбоку. Масштаб: для рис. 10, 12 — 1.0 мм; для рис. 11, 13 — 0.3 мм.

**Limnebius* (*Limnebius*) *crinifer* Rey, 1885
Figs 22–23.

MATERIAL. ***Gryazovetsky distr.:*** 0.3 km S of Bol´shoe Denis´evo vill., Kom´ya River, 59°02´45″N 40°18´19″E, river (depth 0.1–0.4 m, clay-silty bottom, pH=7.6, TDS=205 ppm), 23.VIII.2020; 20 exs., DP, AK; 0.5 km SW of Fedorkovo vill., Lukhta River, 59°01´56″N 40°15´46″E, river (depth 0.1–0.4 m, clay-silty bottom, pH=7.7, TDS=318 ppm), 23.VIII.2020, 14 exs., AK, DP; 0.8 km SE of Zimnyak vill., Lezha River, 59°05´44″N 40°24´12″E, ripal (depth 0.1–0.2 m, clay bottom, pH=7.4, TDS=240 ppm), 24.VIII.2020, 4 exs., DP, AK; 0.6 km SE of Zimnyak vill., 59°05´47.5″N 40°24´13.5″E, puddle on the road at the edge of the field (depth 0.1 m, clay bottom, pH=7.6, TDS=68 ppm), 24.VIII.2020, 1 ex., DP, AK. ***Mezhdurechensky distr.:*** 2.3 km NE of Markovskoe vill., tributary of Shejbukhta River, 59°16´42″N 40°52´55″E, stream (depth 0.1 m, clay-rocky bottom, pH=8.0, TDS=306 ppm), 24.VIII.2020, 3 exs., DP, AK; ***Ust-Kubinsky distr.:*** Porokhovo vill., 59°39´21″N 39°50´25″E, puddles on the road on the bank of the river (depth 0.05 m, clay bottom, pH=7.9, TDS=266 ppm), 21.VIII.2020, 9 exs., DP, AK; 0.3 km SE of Bokrylovo vill., Kubena River, 59°42´00″N 39°51´21″E, beds of macrophytes (depth 0.3–0.6 m, clay bottom, pH=7.8, TDS=146 ppm), 21.VIII.2020, 1 ex., DP, AK; 1 km SE of Bokrylovo vill., 59°41´40.0″N 39°51´36.5″E, watered track on the road at the edge of the field (depth 0.2–0.3 m, clay-silty bottom, pH=9.7, TDS=85 ppm), 21.VIII.2020, 11 exs., DP, AK; same place; puddle on the road at the edge of the field (depth 0.1 m, clay-silty bottom, pH=9.7, TDS=85 ppm), 21.VIII.2020, 4 exs., DP, AK. ***Sheksninsky distr.:*** 1.3 km SW of Zhajno vill., 59°11´15″N 38°40´19″E, roadside ditch (depth 0.01–0.1 m, clay bottom), 18.VIII.2020, 1 ex., DP, AK. ***Syamzhensky distr.:*** 0.2 km SE of Vasilyevskaya vill., Yakhren'ga River, 60°12´50″N 41°18´58″E, river (depth 0.1–0.2 m, rocky bottom, pH=7.4, TDS=62 ppm), 30.VIII.2020, 1 ex., DP, AK.

**Ochthebius* (*Asiobates*) *alpinus* (Ieniºtea, 1979)
Figs 14–15.

MATERIAL. ***Gryazovetsky distr.:*** 0.5 km N of Ul´yanovka vill., Komyola River, 59°02´40″N 40°11´21″E, river (depth 0.1–0.6 m, sandy-rocky bottom, pH=7.6, TDS=131 ppm), 23.VIII.2020, 4 exs., AK, DP. ***Tarnogsky distr.:*** 2.6 km N of Sergievskaya vill., Bol'shaya Salanga River, 60°16´02″N 43°55´48″E, ripal and on the sandbar (depth 0.3–0.7 m, current velocity 0.01–0.2 m/s, pH=7.9, sandy-rocky bottom), 17.VII.2020, 1 ex., DP, AK.

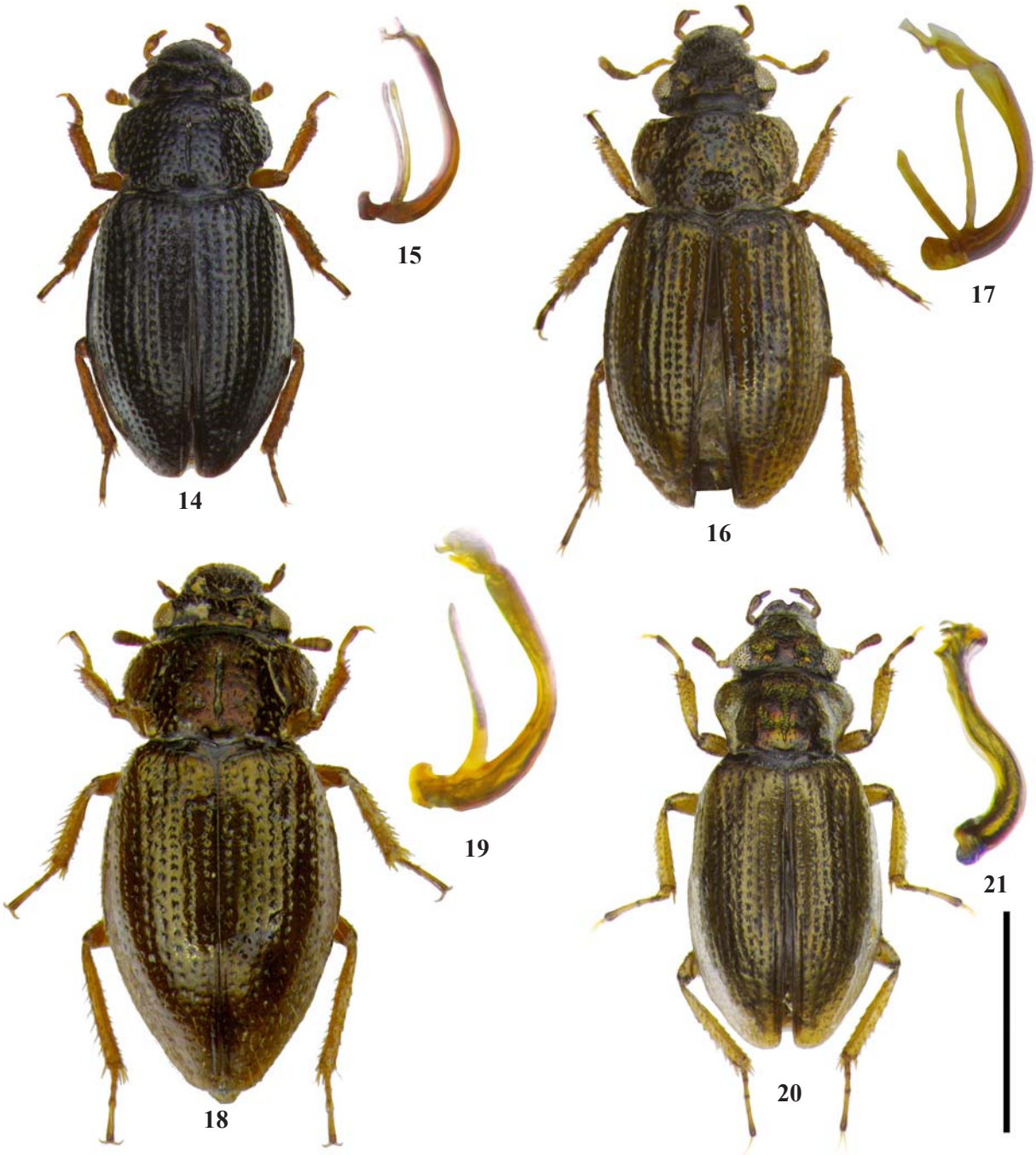
**Ochthebius* (*Asiobates*) *flavipes* Dalla Torre, 1877
Figs 15–17.

MATERIAL. ***Gryazovetsky distr.:*** 0.6 km SE of Zimnyak vill., 59°05´47.5″N 40°24´13.5″E, puddle on the road at the edge of the field (depth 0.1 m, clay bottom, pH=7.6, TDS=68 ppm), 24.VIII.2020, 1 ex., DP, AK. ***Ust-Kubinsky distr.:*** 1 km SE of Bokrylovo vill., 59°41´40.0″N 39°51´36.5″E, puddle on the road at the edge of the field (depth 0.1 m, clay-silty bottom, pH=9.7, TDS=85 ppm), 21.VIII.2020, 1 ex., DP, AK.

NOTE. This record is the first from the North European Territory of Russia. Previously this species was recorded for European Russia from Central Territory (Moscow, Lipetsk, Ul´yanovsk and Samara Oblasts) [Prokin et al., 2015; Prokin, Nikitsky, 2016; Mazurov et al., 2020].

*Ochthebius (*Asiobates*) *remotus* Reitter, 1885
Figs 18–19.

MATERIAL. ***Gryazovetsky distr.:*** 0.5 km N of Ul´yanovka vill., Komyola River, 59°02´40˝N 40°11´21˝E, ripal (depth 0.1–0.6 m, sandy-rocky bottom, pH=7.6, TDS=131 ppm), 23.VIII.2020; 51 exs., AK, DP. 0.3 km S of Bol´shoe Denis´evo vill., Kom´ya River, 59°02´45˝N 40°18´19˝E, ripal (depth 0.1–0.4 m, clay-silty bottom, pH=7.6, TDS=205 ppm); 23.VIII.2020, 42 exs., DP, AK. ***Tarnogsky distr.:*** 2.6 km N of Sergievskaya vill., Bol'shaya Salanga River, 60°16´02˝N 43°55´48˝E, ripal and on the sandbar (depth 0.3–0.7 m, current velocity 0.01–0.2 m/s, pH=7.9, sandy-rocky bottom), 17.VII.2020, 2 exs., DP, AK; 4 km SE of Krasnoe rural locality, near Aksenovskaya abandoned built-up area, Uftyuga River, 60°29´44˝N 43°17´28˝E, river backwater (depth 0.1–0.2 m, current velocity 0.01 m/s, pH=7.7, clay bottom), 18.VII.2020, 1 ex., DP, AK; same place; in the riverbed near the water´s edge (depth 0.1–0.5 m, current velocity 0.01–0.1 m/s, pH=7.7, clay bottom), 18.VII.2020, 6 exs., DP, AK; 1 km W of Nikolaevskaya vill., Sheben´ga River, 60°29´36˝N 43°31´57˝E, ripal and on the sandbar



Figs 14–21. *Ochthebius* spp.: 14–15 — *Ochthebius alpinus*; 16–17 — *O. flavipes*; 18–19 — *O. remotus*; 20–21 — *O. foveolatus*; 14, 16, 18, 20 — habitus; 15, 17, 19, 21 — aedeagus, lateral view. Scale bar: for 14, 16, 18, 20 — 1.0 mm; for 15, 17, 19, 21 — 0.3 mm.

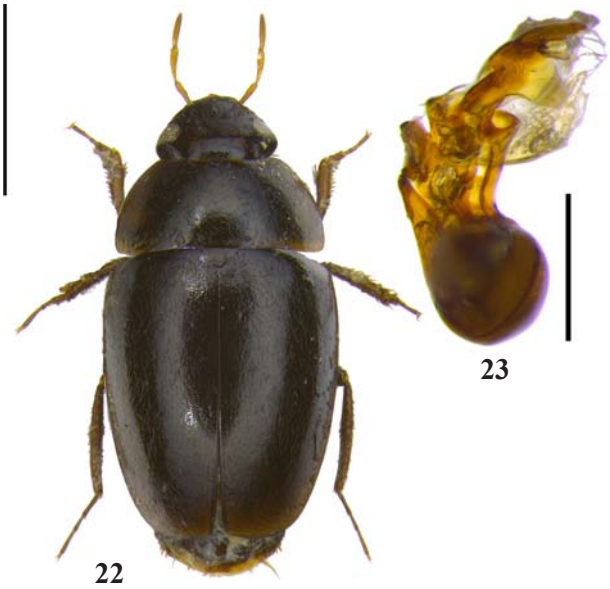
Рис. 14–21. *Ochthebius* spp.: 14–15 — *Ochthebius alpinus*; 16–17 — *O. flavipes*; 18–19 — *O. remotus*; 20–21 — *O. foveolatus*; 14, 16, 18, 20 — габитус; 15, 17, 19, 21 — эдеагус, сбоку. Масштаб: для рис. 14, 16, 18, 20 — 1.0 мм; для рис. 15, 17, 19, 21 — 0.3 мм.

(depth 0.1–0.5 m, current velocity 0.01–0.1 m/s, pH=7.5, sandy bottom), 19.VII.2020, 1 ex., DP, AK. ***Sheksninsky distr.:*** 1.5 km N of Bratkovo rural locality, Chyobsara River, 59°09′04″N 38°47′54″E, ripal (depth 0.01–0.1 m; sandy-silty bottom, pH=8.2, TDS=248 ppm), 18.VIII.2020, 1 ex., AK, DP. ***Ust-Kubinsky distr.:*** Porokhovo vill., 59°39′21″N 39°50′25″E, puddles on the road on the bank of the river (depth 0.05 m, clay bottom, pH=7.9, TDS=266 ppm), 21.VIII.2020, 1 ex., DP, AK. ***Velikoustyugsky distr.:*** 1 km NE of Mikhninskaya vill., Sharden′ga River, 60°26′39″N 46°18′56″E, ripal (sandy-silty bottom, pH=8.4, TDS=94 ppm), 15.VII.2020, 9 exs., AK, DP.

**Ochthebius* (*Ochthebius*) *foveolatus* Germar, 1824
Figs 20–21.

MATERIAL. ***Velikoustyugsky distr.:*** near Studenoe vill., Strel′na River, 60°34′51″N 45°32′35″E, ripal (rocky bottom, depth 0.1–0.4 m, pH=8.8), 16.VII.2020, 4 exs., DP, AK.

NOTE. This record is the first from the North European Territory of Russia. Previously this species was recorded for Russia from Central European Territory (Samara Oblast) [Prokin et al., 2015].



Figs. 22–23. *Limnebius crinifer*: 22 — habitus, 23 — aedeagus, lateral view. Scale bar: for 22 — 1.0 mm; for 23 — 0.3 mm.

Рис. 22–23. *Limnebius crinifer*: 22 — габитус, 23 — эдеагус, сбоку. Мастаб: для 22 — 1.0 мм; для 23 — 0.3 мм.

Family Elmidae Curtis, 1830

Riolus nitens (P.W.J. Müller, 1817)
Fig. 24.

MATERIAL. ***Nyuksensky distr.:*** 4.7 km S of Bobrovskoe vill., Bol'shaya Bobrovka River, 60°26′21″N 44°47′52″E, ripal (depth 0.1–0.4 m, current velocity 0.01–0.1 m/s, pH=8.5, sandy-rocky bottom), 16.VII.2020, 1 ex., DP, AK. ***Tarnogsky distr.:*** 4 km SE of Krasnoe rural locality, near Aksenovskaya abandoned built-up area, Uftyuga River, 60°29′44″N 43°17′28″E, in the riverbed near the water′s edge (depth 0.1–0.5 m, current velocity 0.01–0.1 m/s, pH=7.7, clay bottom), 18.VII.2020, 1 ex., DP, AK.

NOTE. This rare species was recorded for the Vologda Oblast without locality information [Dumnich et al., 2008]. Our record confirms the presence of the species in the Vologda Oblast. *Riolus nitens* included in Red Data Book of Republic of Karelia [Kuznetsov, 2020] as Data Deficient (DD) taxon.

Fig. 24. *Riolus nitens*. Scale bar: 1.0 mm.

Рис. 24. *Riolus nitens*. Масштаб: 1.0 мм.

Family Limnichidae Erichson, 1846

**Limnichus sericeus* (Duftschmidt, 1825)
Figs 25–26.

MATERIAL. ***Tarnogsky distr.:*** 1 km W of Nikolaevskaya vill., Sheben′ga River, 60°29′36″N 43°31′57″E, ripal and on the sandbar (depth 0.1–0.5 m, flow speed 0.01–0.1 m/s, pH=7.5, sandy bottom), 19.VII.2020, 3 exs., DP, AK.

Figs 25–26. *Limnichus sericeus*: 25 — habitus, 26 — aedeagus, dorsal view. Scale bar: 1.0 mm.

Рис. 25–26. *Limnichus sericeus*: 25 — габитус, 26 — эдеагус, сверху. Масштаб: 1.0 мм.

Conclusions

As a result of our study, species *Ochthebius foveolatus* and *O. flavipes* are recorded for the North European Territory of Russia for the first time. In total, 30 species of aquatic and riparian beetles from six families, Gyrinidae (1 species), Dytiscidae (14), Helophoridae (2), Hydrophilidae (5), Hydraenidae (7), and Limnichidae (1) are recorded for the Vologda Oblast for the first time. The presence of *Riolus nitens* and *Enochrus bicolor* in the Vologda Oblast is confirmed by new records. Species *Gyrinus pullatus* is recorded from southernmost known locality in European part of Russia. Currently, 222 species (including phytophilous not predominantly aquatic species of Chrysomelidae and Curculionidae) of aquatic (177 species), riparian (8) and amphibiotic (37) beetles are registered for the Vologda Oblast: Gyrinidae — 8 species, Haliplidae — 9, Noteridae — 1, Dytiscidae — 77, Helophoridae — 12, Georissidae — 1, Hydrochidae — 3, Spercheidae — 1, Hydrophilidae — 37, Hydraenidae — 16, Scirtidae — 11, Elmidae — 7, Dryopidae — 6, Limnichidae — 2, Heteroceridae — 5, Chrysomelidae — 23 and Curculionidae — 3.

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