

New records of Cryptophagidae and Erotylidae (Coleoptera: Clavicornia) from the Caucasus: northern and eastern faunal elements, and faunistic notes for the Oriental and Australian regions

Новые находки Cryptophagidae и Erotylidae (Coleoptera: Clavicornia, Clavicornia) Кавказа: северные и восточные элементы фауны, а также фаунистические заметки для Ориентального и Австралийского регионов

G.Yu. Lyubarsky
Г.Ю. Любарский

НИ Зоологический музей, Московский государственный университет, ул. Герцена 2, Москва 125009 Россия. E-mail: lgeorgy@rambler.ru.

Zoological Museum, Moscow State University, Gerzen Str. 2, Moscow 125009 Russia.

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Key words: Coleoptera, Cryptophagidae, Erotylidae, fauna, Caucasus, zoogeography.

Abstract. The list of species collected in North Ossetia by S.K. Alekseev in 2016 is presented. Several species turned out to be new for the Caucasus, for the fauna of N Ossetia, or for the fauna of Russia. Some of these species have previously been recorded from areas located significantly further north or east. *Cryptophilus quadrisignatus*, previously noted only in the Far East, in China and Japan, is recorded from the Caucasus and Thailand. *Atomaria cribrella* is recorded for the first time for Russia. *Cryptophagus obsoletus*, *Atomaria badia*, *A. longicornis*, and *A. pulchra* are recorded for the first time in the Caucasus, and *A. ornata* for the first time in Eastern Europe. 11 species are attributed new distribution ranges, including 6 new for the fauna of the Caucasus, 2 new for the fauna of N Ossetia, 1 new for the fauna of Russia, 1 new for the fauna of Eastern Europe, 3 new for the Oriental region, and 1 new for the Australian region.

Резюме. Представлен список видов, собранных С.К. Алексеевым в 2016 г. в Северной Осетии. Указаны новые виды для фауны Северной Осетии, для фауны Кавказа и фауны России. Некоторые виды прежде отмечались лишь значительно севернее и восточнее. Так, *Cryptophilus quadrisignatus* прежде отмечался только с Дальнего Востока, из Китая и Японии, теперь он также отмечен с Кавказа и Таиланда. *Atomaria cribrella* впервые указывается для России. *Cryptophagus obsoletus*, *Atomaria badia*, *A. longicornis*, *A. pulchra* впервые отмечены для Кавказа, *A. ornata* впервые указана для Восточной Европы. Для 11 видов указаны новые регионы распространения, приведено 6 новых видов для фауны Кавказа, 2 новых вида для фауны Северной Осетии, 1 новый вид для фауны России, 1 новый вид для фауны Восточной Европы, 3 новых вида для Ориентального региона и 1 новый вид для Австралийского региона.

Introduction

When studying the collections of Cryptophagidae and Erotylidae from North Ossetia in 2016, species previously known from much more eastern regions, namely from Siberia and Primorye, were found. These findings are very interesting. In addition to these collections, data are also given on the finds of several other rare species in the Caucasus. The subject of this study are primarily the collections of S.K. Alekseev from North Ossetia, conducted in 2016. The collections were done using the Barber traps in the vicinity of the town of Alagir and the Tsey Gorge. The article also considers some interesting findings from some other collections.

List of species

Cryptophagidae Kirby, 1826

The fauna of the Cryptophagidae of Caucasus was recently described in the Palaearctic catalog [Johnson et al., 2007], supplemented by several other works [Lyubarsky, 2008; Lyubarsky et al., 2015]. In the study of entomological collections for recent years, new findings have been discovered.

List of species collected by S.K. Alekseev in 2016 in N Ossetia: *Caenoscelis sibirica* Reitter, 1889, *C. subdeplanata* Brisout de Barneville, 1882, *Cryptophagus confusus* Bruce, 1934, *C. denticulatus* Heer, 1841, *C. labilis* Erichson, 1846, *C. obsoletus* Reitter, 1879, *C. punctipennis* Brisout de Barneville, 1863, *C. reflexus* Rey, 1889, *C. scutellatus* Newman, 1834, *Atomaria affinis* (R.F. Sahlberg, 1834), *A. alpina* Heer, 1841, *A. atrata* Reitter, 1875, *A. atricapilla* Stephens, 1830, *A. attila* Reitter, 1878, *A. badia* Erichson, 1846,

A. cribrella Reitter, 1888, *A. elongatula* Erichson, 1846, *A. fasciata* Kolenati, 1846, *A. lewisi* Reitter, 1877, *A. longicornis* Thomson, 1863, *A. nigripennis* (Kugelann, 1794), *A. nigrirostris* Stephens, 1830, *A. pulchra* Erichson, 1846, *A. rubricollis* Brisout de Barneville, 1863, *A. subangulata* J.Sahlberg, 1926, *A. testacea* Stephens, 1830, *A. umbrina* (Gyllenhal, 1827), *A. wollastoni* Sharp, 1867.

The material is deposited in Zoological Museum of Moscow State University (ZMMU).

Caenoscelis Thomson 1863

Caenoscelis subdeplanata

Brisout de Barneville, 1882

Material. Russia, N Ossetia: Southern surroundings of the town of Alagir, N 43°00'59", E 44°13'27", beech forest edge, h - 650 m, 4–21.04.2016, leg. Alexeev S.K., Komarov Yu. — 2 spec.; upper Tsey Gorge, N 42°47'06", E 43°53'54", beech forest with blueberries, h - 1950 m, 05–06.2016, leg. Alexeev S.K., Komarov Yu.; Southern surroundings of the town of Alagir, N 43°00'59", E 44°13'27", beech forest edge, h - 650 m, 2–8.07.2016, leg. Alexeev S.K., Komarov Yu.

Notes. Previously [Lyubarsky, 2008], known from the collections in Russian Caucasus (Krasnodarskii Krai), and Georgia (Bakuriani).

Distribution. W, N, C, E Europe, Caucasus, Asia Middle, East Siberia, Far East, Nearctic region. New to Ossetia.

Caenoscelis sibirica Reitter, 1889

Material. Russia, N Ossetia: Southern surroundings of the town of Alagir, N 43°00'59", E 44°13'27", beech forest edge, h - 650 m, 1–28.03.2016, leg. Alexeev S.K., Komarov Yu.

Notes. Previously [Lyubarsky, 2008], known from the findings in Russian Caucasus (Krasnodar Region), and N Ossetia (Mozdok area).

Distribution. W, N, C, E Europe, Caucasus, Far East, Mongolia, Japan, North Korea.

Cryptophagus Herbst, 1792

Cryptophagus obsoletus Reitter, 1879

Material. Russia, N Ossetia: Southern surroundings of the town of Alagir, N 43°00'59", E 44°13'27", beech forest edge, h - 650 m, 1–28.03.2016, leg. Alexeev S.K., Komarov Yu. — female.

Notes. This species is listed [Johnson et al., 2007] for northern, western, and central Europe, East Siberia, Far East, Mongolia, Japan, northern China, Nearctic region.

Previously [Lyubarsky, 2008], *C. obsoletus* was recorded from Komi Republic, St. Petersburg Region, Yaroslavl Region, Moscow Region, Kaluga Region, Chuvashia, Bryansk Region, Samara Region, Lipetsk Region, Ufa Region, Kalmykia. When studying the fauna of the Caucasus pertaining to the genus *Cryptophagus* [Lyubarsky et al., 2015], this species was not found.

Distribution. W, N, C, E Europe, Caucasus, East Siberia, Far East, Mongolia, N China, Japan, Nearctic region. New to Caucasus.

Atomaria Stephens, 1829

Atomaria atrata Reitter, 1875

Material. Russia, N Ossetia: Southern surroundings of the town of Alagir, N 43°00'59", E 44°13'27", beech forest edge, h - 650 m, 2–8.07.2016, leg. Komarov Yu.E. (3 spec.); Tsey Gorge, Khukali, N 42°48'11", E 43°59'05", grass pine forest, h - 1890 m, 3.05.2016, leg. Alexeev S.K.; Tsey Gorge, N 42°47'43", E 43°58'2", forest of beech, hornbeam and maple, h - 1400, 4.05.2016, leg. Alexeev S.K. — 2 spec.

Notes. This species is listed [Johnson et al., 2007] for Europe, Far East, Mongolia, Japan, Nearctic region. Previ-

ously [Lyubarsky, 2008], *A. atrata* was recorded in Russian South territory (Krasnodar Region, N Ossetia), Armenia, and East Siberia.

Distribution. Europe, Caucasus, East Siberia, Far East, Mongolia, Japan, Nearctic region.

Atomaria badia Erichson, 1846

Material. Russia, N Ossetia: Tsey Gorge, N 42°47'06", E 43°53'54", beech forest with blueberries, h - 1950 m, 06–07.2016, leg. Alexeev S.K. — 3 spec.

Notes. This species is listed [Johnson et al., 2007] for western, northern, central and eastern Europe.

Distribution. W, N, C, E Europe, Caucasus. New to Caucasus.

Atomaria cephenoides Reitter 1888

Material. Abkhasia rd.: Ritza-Avadhara, h - 1300 m, 7–9.05.2012, leg. Kurbatov S.A.; Russia: Sochi area, 30 km near Adler, lower reaches of the river Chvizhapse, 04–05.2013, leg. Kurbatov S.A.

Notes. This rare species is listed [Johnson et al., 2007] for South Russian territories, Armenia, Georgia, Turkey.

Distribution. South Russian territories, Armenia, Georgia, partially recognized state of Abkhasia, Turkey.

Atomaria cribrella Reitter, 1888

Material. Russia, N Ossetia: lower Tsey Gorge, N 42°47'43", E 43°58'22", forest of beech, hornbeam and maple, h - 1400, 5–6.2016, leg. Alexeev S.K., 8 spec.; upper Tsey Gorge, N 42°47'06", E 43°53'54", beech forest with blueberries, h - 1950, 2–8.07.2016, leg. Alexeev S.K.; lower Tsey Gorge, N 42°47'43", E 43°58'22", forest of beech, hornbeam and maple, h - 1490 m, 2–7.07.2016, leg. Alexeev S.K.; upper Tsey Gorge, N 42°47'06", E 43°53'54", beech forest with blueberries, h - 1950, 05–06.2016, leg. Alexeev S.K. — 2 spec.; upper Tsey Gorge, N 42°47'06", E 43°53'54", beech forest with blueberries, h - 1950, 08–09.2016, leg. Alexeev S.K.; lower Tsey Gorge, N 42°47'56", E 43°58'26", forest of pine, hornbeam and azalea (Ericaceae), h - 1490 m, 05–06.2016, leg. Alexeev S.K. — 2 spec.

Notes. This rare species is listed [Johnson et al., 2007] only for Georgia.

Distribution. South territory of Russia, Georgia. New to Russia.

Atomaria longicornis Thomson, 1863

Material. Russia, N Ossetia: Southern surroundings of the town of Alagir, N 43°00'59", E 44°13'27", beech forest edge, h - 650 m, 1–28.03.2016, leg. Alexeev S.K., Komarov Yu.

Notes. This species is listed [Johnson et al., 2007] for Europe, East Siberia, Far East, and Japan.

Distribution. Europe, Caucasus, East Siberia, Far East, Japan. New to Caucasus.

Atomaria ornata Heer, 1841

Material. Russia: Smolensk Region, Demidovsky District, near Baklanovo, litter under forest, 2.05.2010, leg. Semenov V.B.

Notes. This species is listed [Johnson et al., 2007] for western, northern, central, and southern Europe, Nearctic region.

Distribution. W, N, C, S, E Europe, Nearctic region. New to E. Europe.

Atomaria pulchra Erichson, 1846

Material. Russia, N Ossetia: Tsey Gorge, N 42°47'06", E 43°53'54", beech forest with blueberries, h - 1950 m, 5–6.2016, leg. Alexeev S.K.

Notes. This species is listed [Johnson et al., 2007] for Europe and Afghanistan.

Distribution. Europe, Caucasus, Afghanistan. New to Caucasus.

Atomaria subangulata Sahlberg, 1926

Material. Russia, N Ossetia: Tsey Gorge, Khukali, N 42°48'11", E 43°59'05", grass pine forest, h - 1890 m, 05-06.2016, leg. Alexeev S.K.; Tsey Gorge, N 42°47'56", E 43°58'26", forest of pine, hornbeam and azalea (Ericaceae), h - 1490 m, 05-06.2016, leg. Alexeev S.K.; Tsey Gorge, N 42°47'56", E 43°58'26", forest of pine, hornbeam and azalea (Ericaceae), h - 1490 m, 2-8.07.2016, leg. Alexeev S.K. — 2 spec.; Tsey Gorge, Khukali, N 42°48'11", E 43°59'05", grass pine forest, h - 1890 m, 3.05.2016, leg. Alexeev S.K. — 2 spec.; Tsey Gorge, Khukali, N 42°48'11", E 43°59'05", grass pine forest, h - 1890 m, 14.05.2016, leg. Alexeev S.K. **Smolenskaya Oblast**, Demidovsky District, near Poboische, Kirovka, Boroviki village, and lake Sanino, car trap, 17.06.2016, leg. O. Semionenkov; **Kaluzbskaya Oblast**, Kirovsky District, 2 km NW Berezhi village, mixed forest, swamp, 04-05.2016, leg. Alexeev S.K. — 4 spec.

Notes. This species is listed [Johnson et al., 2007] for northern, central and eastern Europe, East Siberia and Nearctic region. Previously [Lyubarsky, 2008], *A. subangulata* was also listed for Belarus, Russian South territory (Adygeya, N Ossetia, Zaramag) and West Siberia (S Urals).

Distribution. N, C, E Europe, Caucasus, West Siberia, East Siberia, Nearctic region.

Atomaria wollastoni Sharp, 1867

Material. Russia, N Ossetia: Tsey Gorge, Khukali, N 42°48'11", E 43°59'05", grass pine forest, h - 1890 m, 3.05.2016, leg. Alexeev S.K. — 2 spec.

Notes. This species is listed [Johnson et al., 2007] for western, northern, and central Europe, Nearctic region. Previously [Lyubarsky, 2008], *A. wollastoni* was also listed for Belarus, Russian South territory (Krasnodar Region), Armenia, Russian East Siberia, Far East.

Distribution. W, N, C, E Europe, Caucasus, East Siberia, Far East, Nearctic region. New to Ossetia.

Erotylidae Latreille, 1802

After the Palearctic catalog [Wegrzynowicz, 2007], a description of a new species from the Far East [Lyubarsky, 2010] was published, as well as a revision of European species of *Cryptophilus* (Esser, 2016), where the differences in the genitals and external appearance of Palearctic species are indicated. It is established that three species are distributed in Europe, *Cryptophilus simplex* (Wollaston, 1857), *C. propinquus* Reitter, 1874, and *C. obliteratus* Reitter, 1874.

In the study of several collections, and the collections from North Ossetia for 2016, new findings were discovered.

Cryptophilus Reitter, 1874

Cryptophilus obliteratus Reitter, 1874

Material. Russian Far East: Vladivostok, 1.08.1937, leg. I. Telishev — 1 spec.; Ussurijsky State Reserve, 29.06.1979, leg. Mikhechev, Nikitsky — 1 spec.; Sakhalin, Nevelskij, Kuznetzovo, 12.11.1949, leg. V. Stepanov — 1 spec. **China:** Sichuan, Xiling Mt., h - 1400-2200 m, 30.07-4.08.1996, leg. Kurbatov S.A. — 3 spec.

Notes. This species is listed [Wegrzynowicz, 2007] for Europe, Russian Far East, China, Japan.

Distribution. W, C Europe, Russian Far East, China, Japan.

Remarks. Some species of *Cryptophilus* are very widespread, see *Cryptophilus simplex* (Wollaston, 1857) [Wegrzynowicz, 2007; Lyubarsky, 2013; Esser, 2016]. The

species can be differentiated by the characters as follows: The size is larger, 2.5 mm. Anterior margin of pronotum slightly sinuate, without cut. Lateral border of pronotum strongly rounded. Paramere with a small number of long chaetae on the top (3-4).

Cryptophilus propinquus Reitter, 1874

Material. Palearctic region: **Turkmenistan**, Karabekaulski District, Lambe, 23.05.1978, leg. A. Kompantsev — 1 spec.; **Afghanistan**, Oruzgan, Gezab, h - 1400 m, 12.06.1970, leg. Kabakov — 1 spec. **Oriental region:** **Malaysia**, NO Sarawak, Lambir Hills NP, h - 100 m, 11-13.10.2001, leg. S. Kurbatov — 1 spec.; **Vietnam**, ca. 60 km NNW of Hanoi, Mt. Bavi, 10.04.1986, leg. L. Medvedev — 4 spec.

Notes. This species is listed in the latest review [Esser, 2016] for Germany, India, Italy, Japan, Turkey, and previously [Wegrzynowicz, 2007] for Japan, Thailand. New to Turkmenistan, Afghanistan, Vietnam, Malaysia.

Distribution. C, S Europe, Turkey, Turkmenistan, Afghanistan, Japan, India, Thailand, Vietnam, Malaysia.

Remarks. Anterior margin of pronotum slightly sinuate, without cut. The size is smaller, 2 mm. Lateral border of pronotum strongly rounded. Paramere with a small number of long chaetae on the top (2-3). Elytra without black spot.

Cryptophilus quadrisignatus Motschulsky, 1860

Material. Palearctic region: Russia, N Ossetia: Southern surroundings of the town of Alagir, N 43°00'59", E 44°13'27", beech forest edge, h - 650 m, 4-21.04.2016, leg. Alexeev S.K., Komarov Yu. — 2 spec.; **Russian Far East:** Kunasiri Is.: leg. Nechaev — 1 spec.; Kunasiri Is., 13.06.1952, leg. K. Voskresensky — 1 spec.; Morskoy State Reserve, Stenina Is., 2.06.1999, leg. P.B. Klimov — 3 spec.; Ussurijsky State Reserve, 7-11.05.1967, leg. A. Tichomirova — 1 spec.; Kedrovaya Pad State Reserve, 12.07.1989, leg. N. Nikitsky — 1 spec.; Lazovsky State Reserve, 21-23.05.2009, leg. S. Kurbatov — 1 spec.; idem, 23-31.05.2009, leg. S. Kurbatov — 1 spec.; idem, 26.08-03.09.2006, leg. V. Shokhrin, Yu. Sundukov — 1 spec.; Sakhalin Is., leg. K. Tamanuki — 1 spec. **China:** **Prov. Shaanxi**, Xian, Mt. Huashan, 100 km E Sian, h - 500-1700 m, 8-11.05.1994, leg. S. Kurbatov — 4 spec.; **C. Sichuan**, Xiling, h - 1400-2200 m, 30.07-04.08.1996, leg. S. Kurbatov — 1 spec.; **SW Jiangxi**, nr. Jinggangshan, h - 900 m, 26.05-1.06.1998, leg. S. Kurbatov — 1 spec. **Oriental region:** **Thailand**, MaeHongSon, Pai, on light, h - 500 m, 15-24.12.2010, leg. Tomkovitch K.P.

Notes. This species is listed [Wegrzynowicz, 2007] for Russian Far East, China: Shaanxi, Japan.

Distribution. Caucasus, Russian Far East, China: Shaanxi, Sichuan, Jiangxi, Japan, Oriental region: Thailand. New to Caucasus and Thailand, new to China: Sichuan, Jiangxi.

Remarks. From other species *C. quadrisignatus* is distinguished by a strong emargination on the anterior margin of the pronotum. Elytra with black spot.

Cryptophilus simplex (Wollaston, 1857)

Material. Palearctic region: **Azerbaijan:** **Lenkoran District**, Alexeevka, 10.07.1978, leg. Mikhechev, Nikitsky — 1 spec.; idem, 20.07.1978 leg. Mikhechev, Nikitsky — 1 spec.; **Georgia:** **Sukbumi District**, Kashtak, 20-30.08.1977, leg. V. Belov — 1 spec.; **Armenia**, Kofanski District, And, 11.10.1987, leg. S. Saluk — 1 spec.; **Russia:** Lasarevskoe, 7.1951, leg. Nikulin — 1 spec.; **Afghanistan:** Kumartal, Jalalabad, h - 500 m, 30.03.1953, leg. J. Klapperich — 1 spec.; Laghman Samakat, h - 2000 m, 18.04.1972, leg. Kabakov — 1 spec.; **Turkmenistan:** Kara-Kala, env. Parchaj, 1-16.07.1997, leg. J. Miatleuski — 3 spec. **Oriental region:** **Indonesia:** **Komodo Is.**, 22.08.1962, leg. I. Darevsky — 1 spec.; **Thailand:** Ban Kaeng, Krachan, 30-31.07.1996, leg. M. Mostovski — 3 spec.; **India**, Gujarat,

Junadagh Gimar Mt., 20–31.10.2012, leg. K. Tomkovich — 1 spec.; Uttar Pradesh, Rishikesh, 2–4.07.1989, leg. A. Riedel — 2 spec.; **Vietnam**: nr. Ha-Noi, 45 km, aeroport, 14–15.04.2009, leg. A. Lastukhin — 1 spec.; **Myanmar**: E Mansalay, env. Maymye, h - 700–900 m, 12–13.02.1996, leg. S. Kurbatov — 11 spec. **Australian region**: **Australia**: N of Sydney, Pearl Beach at Broken Bay, 7.03.1997, leg. D. Scherbakov — 2 spec.; Tonga, 11.07.1980, leg. A. Zakharov — 1♀.

Notes. This species is listed [Esser, 2016] for: Canaria, Madeira, France, Greece, Italy, Portugal, Spain, Morocco, Turkey. The catalogue [Wegrzynowicz, 2007] treats the species as having a cosmopolitan distribution.

New to Caucasus (Russia, Georgia, Armenia, Azerbaijan), Turkmenistan, Afghanistan, India, Vietnam, Thailand, Myanmar, Indonesia, Mascarene Is., Australia, Tonga.

Distribution. Palaearctic region: Canary, Madeira, France, Greece, Italy, Portugal, Spain, Morocco, Turkey, Caucasus (Russia, Georgia, Azerbaijan, Armenia), Turkmenistan, Afghanistan. Oriental region: India, Vietnam, Thailand, Myanmar, Indonesia (Komodo Is.), Mascarene Is. [Lyubarsky, 2013]. Australian region: Australia, Tonga.

Remarks. Anterior margin of pronotum slightly sinuate, not emarginate. Lateral border of pronotum slightly rounded. Paramere with a large number of long chaetae on the top (6–11). Elytra without black spot.

Conclusion

Thorough collection of S.K. Alekseev, conducted in 2016, made it possible to establish the presence in the Caucasus (at least in the North Caucasus), of many species that were previously recorded from areas much further north or east, for example, from E. Siberia and Primorye. Due to these findings, the areals of many species became less disjunctive, and the gaps in the indications of the spread in Europe and Eastern Siberia with Primorye and with America closed. Most of the species considered are distributed throughout Europe except the south, in central Russia, in the Ciscaucasia and the Caucasus, further east there are finds in the southern Urals or in Central Asia, and then these spe-

cies are common in eastern Siberia, in Russian Primorye, many of them also in Mongolia, northern China, Japan, as well as in North America.

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