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A review of the genus *Anacaena* Thomson, 1859 for the European part of Russia and adjacent regions (Coleoptera, Hydrophilidae)

Обзор рода *Anacaena* Thomson, 1859 европейской части России и сопредельных регионов (Coleoptera, Hydrophilidae)

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Key words: Coleoptera, Hydrophilidae, *Anacaena*.
Ключевые слова: Coleoptera, Hydrophilidae, *Anacaena*.

Abstract. A review of the *Anacaena* species (*A. limbata* (Fabricius, 1792), *A. lutescens* (Stephens, 1829), *A. taurica* Ryndevich, 2000, *A. globulus* (Paykull, 1798) and *A. rufipes* (Guillebeau, 1896)) of the European part of Russia and adjacent regions (Finland, Estonia, Lithuania, Latvia, Belarus, Poland, the Ukraine, Moldova, Kazakhstan, the Caucasus and West Siberia) is presented. Groups of species are proposed, and diagnostic characteristics of the species are described and illustrated.

Резюме. Приводится обзор рода *Anacaena* (*A. limbata* (Fabricius, 1792), *A. lutescens* (Stephens, 1829), *A. taurica* Ryndevich, 2000, *A. globulus* (Paykull, 1798) и *A. rufipes* (Guillebeau, 1896)) европейской части России и сопредельных регионов (Финляндии, Эстонии, Литвы, Латвии, Беларуси, Польши, Украины, Молдовы, Казахстана, Кавказа и Западной Сибири). Выделены группы видов, рассмотрены и проиллюстрированы их диагностические признаки.

Introduction

The genus *Anacaena* Thomson, 1859 is distributed worldwide and includes 55 species. The West Palaearctic species of *Anacaena* (*A. bipustulata* (Marsham, 1802), *A. globulus* (Paykull, 1798), *A. limbata* (Fabricius, 1792), *A. lutescens* (Stephens, 1829), *A. rufipes* (Guillebeau, 1896)) have been revised by A. van Berge Henegouwen [1986], but in the revision of European species, those inhabiting the territory of the former Soviet Union have not been examined. Some species have been described from Europe: *A. lohsei* van Berge Henegouwen et Hebauer from Italy and Switzerland [van Berge Henegouwen, Hebauer, 1989], *A. taurica* Ryndevich from the Ukraine, Georgia and Armenia [Ryndevich, 2000a] and *A. gaetanae* Bameul from Corsica [Bameul, 2001]. A review of the *Anacaena* species of European part of Russia and adjacent regions (Estonia, Latvia, Lithuania, Belarus, Poland, the Ukraine, Moldova, Kazakhstan, West Siberia and the Caucasus) is presented in the following paper.

Material and methods

Material was collected in the European part of Russia, Belarus and the Ukraine during 1988–2001. Additional material was borrowed from the following collections: Zoological Institute of Russian Academy of Sciences, St-Petersburg, Russia (ZISP); Zoological Museum of Moscow State University, Moscow, Russia (ZMUM); Zoological Museum of Belarus State University, Minsk, Belarus (ZMBU); Louisiana State University, Baton Rouge, USA (LUBR); Nezhin Pedagogical Institute, the Ukraine (CNPI); Dr A.O. Bienkovskiy (CAB); Dr M.D. Moroz (CMM); Dr I.A. Solodovnikov (CIS), and the author's collection (CSR). For the identification of *Anacaena* species, the following structures were studied: habitus, coloration, male genitalia, mesosternum (especially the carina), metendosternit, hair-line on underside of hind femur and secondary sexual characteristics in males.

Genus *Anacaena* Thomson, 1859

Body from oval to broadly oval, moderately to strongly convex (Fig. 1), but in some species the body is rather elongate and weakly convex; dorsal side without metallic lustre. Antennae mostly 9–segmented, rarely 7– or 8–segmented; apical segment of maxillary palps asymmetrical with inner face more straight; elytra near posterior half with only sutural stria, without punctate striae or distinct rows; prosternum almost flat or slightly

protruding medially, not carinate; mesosternum rather flat, slightly elevated medially, its posterior half with transverse carina, which usually with small tooth; legs 5–segmented; underside of hind femora with dense hydrofuge pubescence. Length 1.5–3.3 mm.

ANACAENA LIMBATA – GROUP

Body oval; head black, lateral margins of clypeus in front eyes yellowish, reddish yellow or reddish brown; mesosternum with distinct, acutely pointed transverse carina.

Anacaena limbata (Fabricius, 1792)
Figs 3, 13, 25–28, 37–38.

Sphaeridium limbatum Fabricius, 1792;
Hydrophilus foveolatus Haworth, 1807;
Hydrobius ochraceus Stephens, 1829: van Berge Henegouwen, 1986;
Anacaena carinata Thomson, 1870: Kiesenwetter, 1875; van Berge Henegouwen, 1986;
Anacaena limbata (Fabricius): Kiesenwetter, 1875; Yacobson, 1905–1913; Tenenbaum, 1931; Mazurowa, Mazur, 1939; Zaytsev, 1908a (part),1952 (part), Richmond, 1962; Medvedev, 1965; Nakane, 1966; Lohse, 1971; Matta, 1974; Burakowski et al., 1976; Arzamasov et al., 1980; Arnett, 1983; Matsui, Nakane, 1985; van Berge Henegouwen, 1986; Kodada, Majzlan, 1986 [1987]; Bellstedt, Merkl, 1987; Braun, 1987; Hansen, 1987a, 1987b, 1999; Georgiev, Rosnev, 1987; Larson, 1987; Smetana, 1988; Friday, 1988; van Berge Henegouwen, Hebauer, 1989; Krause, Zinke, 1989; Kubisz, Szwalko, 1991; Roughley, 1991; Silfverberg, 1992; Biesiadka, Kordylas, 1993; Kordylas, 1994; Řiha, Jelinek, 1993; Hebauer, 1994; Testa, Lago, 1994; Alexandrovich et al., 1996; Carr, 1997; Telnov et al., 1997; Mölle, 1998; Hebauer, Klausnitzer, 1998; Ryndevich, 1998, 1999a; Ryndevich, Shatrovskiy, 1995; Ryndevich, Moroz, 2000; Moroz, Ryndevich, 2000a; Solodovnikov, 1999; Bameul, 2001; Kireychuk, Shatrovskiy, 2001.

Material. FINLAND: Lapponia, J. Sahlberg, 1 ex. (ZISP). POLAND: Belostok, 14.05.1989, 1 ex. (CSR). BELARUS: Minsk reg., Stolbtzy distr., near Derechintzy, 2.07.1989, leg. Ryndevich S.K., 4 ex. (CSR), Starobin, reokren, 6.09.1996, leg. Moroz M.D., 4 ex. (CMM), Byelovezhskaya pushcha, leg. Aleksandrovich O.R., 6 ex. (CSR). THE UKRAINE: Chernigov reg., Nezhin, near Pedagogical Institute, light, 5.08.1994, leg. P.N. Sheshurak, 1 ex. (CNPI), same data, 9.08.1994, 2 ex. (CNPI), same data, 7.09.1994, 1 ex. (CNPI), same data, 9.09.1994, 5 ex. (CNPI, CRS), same data, 16.09.1994, 1 ex. (CNPI); Hmelnitsk reg., Shepetovka distr., near v. Pleshchin, 26.05.1990, leg. M.A. Dzhus, 1 ex. (CSR); Kamenets-Podolsk, 9.05.1908, leg. Yakubovskiy, [in Russian], 1 ex. (ZISP), same data, 5.03.1911, 1 ex. (ZISP), same data, 11.03.1911, 5 ex. (ZISP); same data, 28.04.1911, 1 ex. (ZISP); Kievsk. gub., 21.07.1904, [in Russian], 1 ex. (ZISP); Talnoe, Umansk. u., Kievsk. gub., 07.1914, [in Russian], 2 ex. (ZISP); Smela, Cherkas. u., Kievsk. gub., 2.05.1907, Miram, [in Russian], 2 ex. (ZISP); Kharkov, r. Nemychlya, 11.05.1989, leg. Shatrovskiy A.G., Ryndevich S.K., 5 ex. (CSR); Pol. Gros-Libental, Odessk. u., 13. VIII. 921 [in Russian], 1 ex. (ZISP) RUSSIA: Russia merid, 14.08.1882, 1 ex. (ZMUM); Bologoe, Novg. gub., 3.IV.03, [in Russian], 11 ex. (ZMUM); Lopuhinka Pergofsk. u., 10.VII.94, Bianki, [in Russian], 1 ex. (ZISP); Smolensk reg., near Vyazma, pool, 10.06.1993, leg. Ryndevich S.K., 2 ex. (CSR); Pskov reg., near Ostrov, pools, 26–30.08.1996, leg. Derunkov A.V., 3 ex. (CSR); A.V., Moscow reg., st. Konobeevo, 3.05.1998, leg. Nikitskiy, Petrov, 1 ex.; Moscow reg., st. Konobeevo, canal, 22.07.1999, leg. Nikitskiy, Petrov, 1 ex. (ZMUM); Urzhum, 21–23. III.901, nanosy r. Urzhumki, L. Krulikovich, [in Russian], 1 ex. (ZISP); same date, 24–25. III.901, 2 ex. (ZISP); Urzhum, 13–14. IV.902, musor r. Urzhumki, L. Krulikovich [in Russian], 1 ex. (ZISP); Gremyachka, Dank. u., Ryaz. g., P.P. Semenova, [in Russian], 14 ex. (ZISP), same data, VII.1901, 1 ex. (ZISP); Rostov reg., Chertkovo, 18.06.1998, leg. Danilevskiy M., 1 ex. (CSR). N Caucasus, near Teberda, pool, 1.05.1989, leg. Ryndevich S.K., 2 ex. (ZISP). ARMENIA: Dilizhan, Armenia, doroga v Karakmes, Rihter, 24.VII.36 [in Russian], 1 ex. (ZISP). KAZAKHSTAN: 20 km N Kustanay, 6.07.1998, leg. M.L. Danilevskiy, 1 ex. (CSR). EUROPA, 3395, 1 ex. (ZISP), FRANCE: Lilla (Galia), Coll. Kaffray, 1 ex. (ZISP). GERMANY: Hercynia, 1 ex. (ZISP). UNITED STATES OF AMERICA: California. CA. Napa County, Sage Cr. At Hwy. 128, 8 ml. W jct. Hwy. 121, 20–VI–1985, C.B. Barr, 2 ex.(LUBR, CRS).

Description. Body oval, moderately convex, dorsal side shiny, without microsculpture; punctation of dorsal side regular and dense, closer towards lateral sides of pronotum and elytra; head and labrum black, lateral margins of clypeus in front eyes yellowish, reddish-yellow or reddish-brown; antennae reddish or yellowish except brown club; maxillary palps reddish or yellowish except black or dark brown apical segment; pronotum brownish-yellow or reddish with medial or two adjacent black or brown spots; scutellum dark brown; elytra brown, reddish or brownish-yellow with small round brown and black spots and dots; ventral side black; mesosternum with distinct, acutely pointed transverse carina (Figs 25–28); legs usually reddish, femora brownish; hair-line on underside of hind femur distally rounded, non-pubescent portion confined to apical fifth (Fig. 3). Sexual dimorphism in last fore-tarsal male segment absent. Genitalia of male as in Fig. 13; metendosternit as in Figs 37–38. Length 2.0–2.9 mm.

Distribution. EUROPE: Spain, Ireland, Great Britain, France, the Netherlands, Belgium, Switzerland, Italy, Denmark, Germany, Austria, Poland, Czech Republic, Hungary, Yugoslavia (Serbia), Greece, Sweden, Finland, Latvia, Belarus, the Ukraine, Bulgaria, Russia (European part), Armenia. ASIA: Turkey, Israel, Syria, Kazakhstan. NORTHERN AMERICA (most records need confirmation): Canada (British Columbia, Alberta, Saskatchewan, Manitoba, Ontario, Quebec, Nova Scotia, Newfoundland), USA (California).

Notes. This species is recorded for the first time from Armenia, Kazakhstan and California (USA). Records of *A. limbata* from Japan [Nakane, 1954] relate to *A. asahinai* Sato [Matsui, Nakane, 1985].

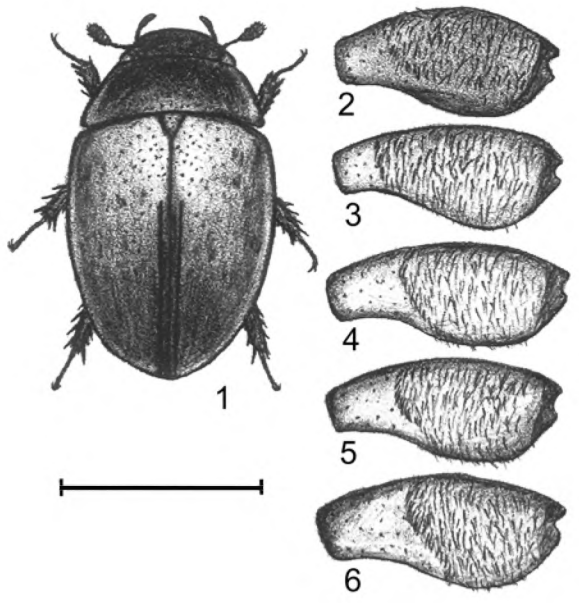
Habitats. *A. limbata* inhabits springs and pools.

ANACAENA LUTESCENS – GROUP

Body oval; head black; mesosternum with distinct, acutely pointed transverse carina.

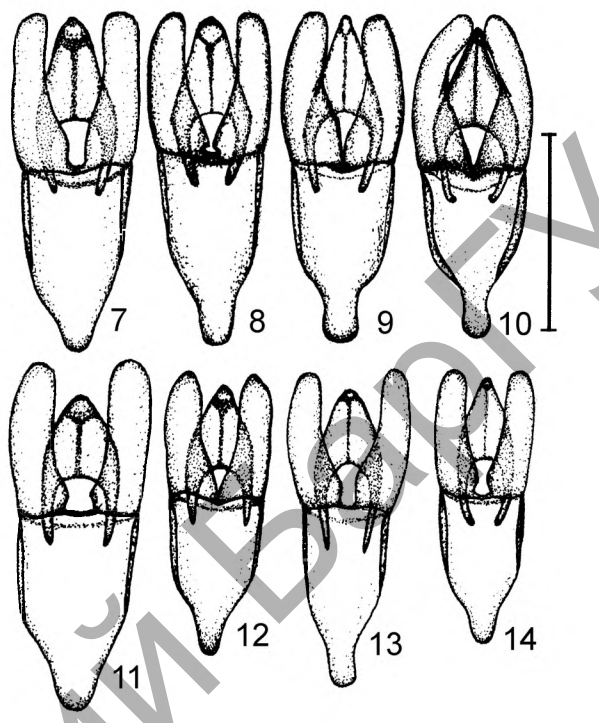
Anacaena lutescens (Stephens, 1829)
Figs 1, 4, 7–8, 18–24, 35–36, 40.

Hydrophilus minutus Marsham, 1802 (non Fabricius);
Hydrobius lutescens Stephens, 1829;
Hydrobius lutescens var. *ß sordes* Stephens, 1829;
Laccobius Marshami Stephens, 1839 (replaced name for *Hydrophilus minutus* sensu Marsham, 1802): van Berge Henegouwen, 1986 (not syn. of *limbata* Fabricius, as in Knisch, 1924);
Hydrobius (*Phylidrus*) *nitidus* Heer, 1841: van Berge Henegouwen, 1986 (not syn. of *limbata* Fabricius, as in Bedel, 1881);
Brachypalpus ambigius Rey, 1885;
Anacaena variabilis Sharp, 1870: van Berge Henegouwen, 1986 (not syn. of *limbata* (Fabricius, 1792) as in Kiesenwetter, 1875);
Anacaena immatura Abeille de Perrin, 1901: van Berge Henegouwen, 1986;



Figs 1–6. *Anacaena* spp., habitus (1), hind femur (2–6): 1, 4 — *A. lutescens*, from Baranovichy, Belarus; 2 — *A. bipustulata*, from the Netherlands; 3 — *A. limbata*, from Moscow oblast', Russia; 5 — *A. taurica*, from South Crimea, the Ukraine; 6 — *A. globulus*, from the Carpathians, the Ukraine. Scale bar: 1.7 mm (1); 0.5 mm (2–6).

Рис. 1–6. *Anacaena* spp., внешний вид (1), заднее бедро (2–6): 1, 4 — *A. lutescens*, из Баранович, Беларусь; 2 — *A. bipustulata*, из Нидерландов; 3 — *A. limbata*, из Московской области; 5 — *A. taurica*, из Южного Крыма, Украина; 6 — *A. globulus*, из Карпат, Украина. Масштабная линейка: 1,7 мм (1); 0,5 мм (2–6).



Figs 7–14. *Anacaena* spp., genitalia of male: 7–8 — *A. lutescens*: from Sicilia, Italy (7), from South Crimea, the Ukraine (8); 9–10 — *A. taurica*: from the Caucasus (9), from South Crimea (10); 11 — *A. globulus*, from Lvov oblast', the Carpathians, the Ukraine; 12 — *A. lohsei* from Italy; 13 — *A. limbata*, from Teberda, the Caucasus, Russia; 14 — *A. bipustulata*, from the Netherlands. Scale bar 0.25 mm.

Рис. 7–14. *Anacaena* spp., гениталии самца: 7–8 — *A. lutescens*: из Сицилии, Италия (7), из Южного Крыма (8); 9–10 — *A. taurica*: с Кавказа (9), из Южного Крыма (10); 11 — *A. globulus*, из Львовской области, Карпаты, Украина; 12 — *A. lohsei* из Италии; 13 — *A. limbata*, из Теберды, Кавказ, Россия; 14 — *A. bipustulata*, из Нидерландов. Масштабная линейка 0,25 мм.

Anacaena limbata sensu [Zaytsev, 1908a (part), 1908b, 1928, 1929], Zaytsev, 1952 (part) (non *limbata* (Fabricius, 1792));

Anacaena limbata var. nitida Sainte-Claire Deville, 1914;

Anacaena globulus sensu [Lindemann, 1871; Zaytsev, 1929], sensu Alexandrovich et al. 1996. (non *globulus* (Paykull, 1798));

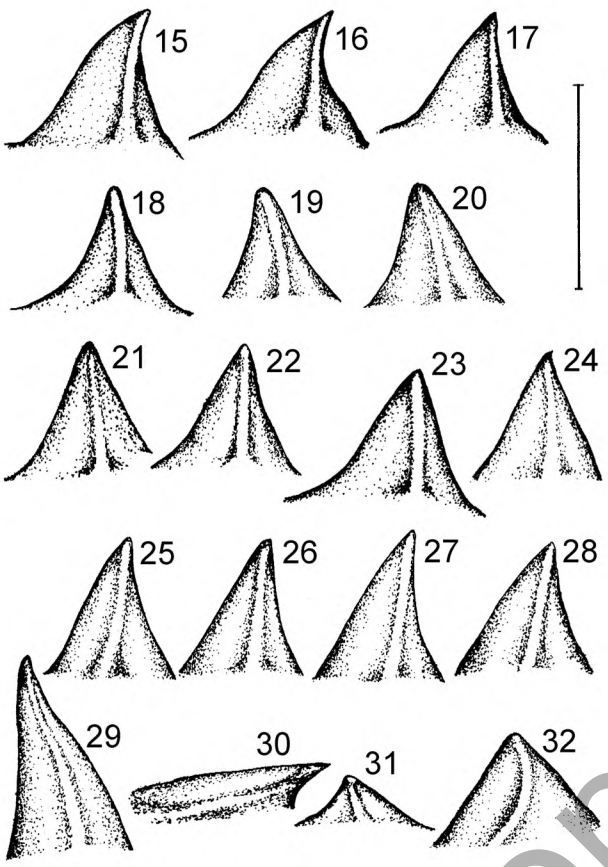
Anacaena glob/ul/us sensu Zaytsev, 1908b (non *globulus* (Paykull, 1798));

Anacaena lutescens (Stephens): Kinel, 1935; van Berge Henegouwen, 1986; van Berge Henegouwen, Hebauer, 1989; Hansen, 1987a, 1987b, 1999; Nilsson, 1987; Friday, 1988; Krause, Zinke, 1989; Borowiec, Kania, 1991; Borowiec et al., 1992; Shaarawi, Angus, 1992; Silfverberg, 1992; Biesiadka, Kordylas, 1993; Kordylas, 1994;?Testa, Lago, 1994; Ryndevich, S.K. 1994a, 1994b, 1997a, 1997b, 1998, 1999a, 1999b, 1999c, 2000a, 2000b, 2000c, 2001; Ryndevich, Shatrovskiy, 1995; Ryndevich, Moroz, 2000; Ribera, Aguilera, 1996; Alexandrovich et al., 1996; Moroz, Khmeleva, 1996; Moroz, Ryndevich, 2000a, 2000b; Carr, 1997; Mölle, 1998; Hebauer, Klausnitzer, 1998; Bratton, 1999; Lott, 1999; Solodovnikov, 1999; Kirk-Spriggs, Mann, 2000, Bameul, 2001; Vorst, Huijregts, 2001; Kireychuk, Shatrovskiy, 2001.

Material. FINLAND: Ruovezi, Fennia, J. Sahlberg, 1 ex. (ZISP); Lapponia, J. Sahlberg, 1 ex. (ZISP). ESTONIA: Shmetske, Estl.,11.06.1903, 16.06.1903 [in Russian], 2 ex. (ZISP); Ins. Runo Est., 22.07.32, leg. G. Sumacov, 2 ex. (ZISP); Jurjev (R) Est., 27.09.32, leg. G. Sumacov, 1 ex. (ZISP). LITHUANIA: Near Vilnius, pools, 18.07.1995, leg. Ryndevich A.G., 2 ex. (CSR). BELARUS: Vitebsk reg., Miory distr., lake Chernoe, 8.05.1995, 8.05.1997, leg. Solodovnikov I.A., Sushko G.G., 9 ex. (CIS, CSR); Vitebsk reg., Miory distr., near v. Zachereviye, lake Obsterno, 28.07.1995, 2 ex. (CSR); Braslav distr., near v. Buevshchina, lake Inovo, 26.07.1995, leg. Ryndevich S.K., 2 ex. (CSR); Vitebskaya obl., 10 km S. Ushachi, verhovoe boloto, 2.08.1996, leg. Solodovnikov I.A., [in Russian], 2 ex. (CIS); 18 km SE Ushachi, d. B. Doltsy, peresochshiy ruchey, 4.08.1984, [in Russian], 2 ex. (CIS); Vitebskaya obl., 30 km E Gorodka, d. Verechye, 1.05.1999, leg. Solodovnikov I.A., [in Russian], 5 ex. (CIS); S. Korolevo, Vitesk. u., 18.04.10, leg. Birulya, [in Russian], 20 ex.(ZISP); Vitebsk reg., Rossony distr., leg Lukashuk A.O., 1 ex. (CSR); Vitebsk reg., Lepel distr., res. Berezinskiy, near v. Domzheritzy, pools, 26.06.1998, leg. Ryndevich S.K., 101 ex. (ZMBU, CSR), same data, pond, 29.07.1993, 19 ex. (ZMBU, CSR), near v. Kvetcha, canal Sergutchskiy, 28.05.1998, leg. Ryndevich S.K., 3 ex. (CSR); near v. Kraytzy, pools, 28–30.05.1998, leg. Ryndevich S.K., 4 ex. (CSR); near v. Nivki, bog, 31.05.1995, leg. Ryndevich S.K., 2 ex. (CSR); lake Domzheritskoe, 31.05.1995, leg. Ryndevich S.K., 5 ex. (CSR); Vitebskaya obl., Lepelskiy r-n, Berezinskiy zap., Rozhnyanskoe boloto, 22.05.1992, leg. Lukashuk A.O., [in Russian], 2 ex. (CSR); Near Minsk, bog, 19.05.1989, leg. Ryndevich S.K., 1 ex. (CSR); Minsk reg., Myadel distr., near v. Naroch, bog, 9.06.1990, leg. Ryndevich S.K., 10 ex. (CSR); same data, pool, 9.06.1990, 7 ex. (CSR), near v. Urliki, forest pool, 2.07.1989, leg. Ryndevich S.K., 8 ex. (ZMBU, CSR); same data, 2.07.1990, 36 ex. (CSR); same data, bog, 30.06.1989, 3 ex. (CSR); same data, 12.06.1990, 33 ex. (ZMBU, CSR), lake Naroch, 13.06.1990,

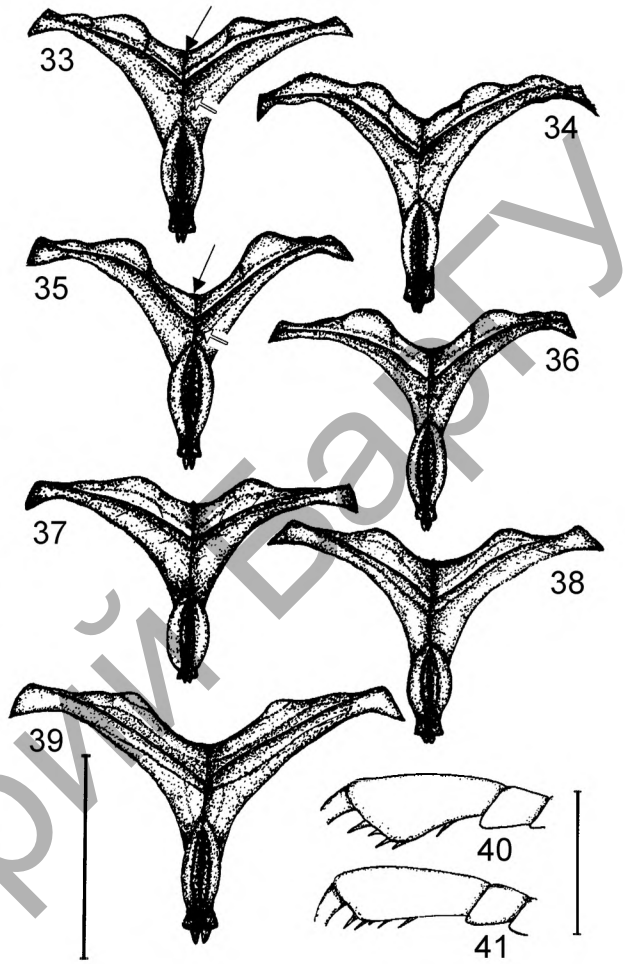
1 ex. (CSR), near v. Syrmezh, bog, 30.06.1989, leg. Ryndevich S.K., 1 ex. (CSR), pool near river Malinovka, 30.06.1989, leg. Ryndevich S.K., 6 ex.; Minsk reg., Vileyka distr., near v. Kovali, melioration canal, 7.07. 1988, leg. Ryndevich S.K., 3 ex. (CSR); Minsk reg., Vileyka distr., 2 km NE v. Budishchi, melioration canals, 7.07. 1988, leg. Ryndevich S.K., 3 ex. (ZMBU, CSR); same data, 20.07.1988, 15 ex. (ZMBU, CSR); Minskaya obl., Volozhinskiy r-n, Zamostyany, prud, 28.05.1993, 1 ex.; Volozhinskiy r-n, zavod reki Z. Berezina, 30.05.1993, leg. Shaverdo, [in Russian], 1 ex. (ZMBU); Minsk reg., near Stolbtzy, 19.09.1995, leg. Ryndevich S.K., 3 ex. (CSR); Minsk reg., Nesvizh distr., near Gorodeya, ponds, 30.07.1983, leg. Ryndevich S.K., 2 ex. (CSR); same data, 23.10.1988, 2 ex. (CSR); same data, 2.08.1989, 6 ex. (CSR); same data, 9.05.1996, 8 ex. (CSR); 3 km W Gorodeya, pools, 14.07.1989, 26.07.1989, leg. Ryndevich S.K., 52 ex. (CSR); Nesvizh distr., river Usha near v. Studyonki, 22.05.1990, leg. Ryndevich S.K., 2 ex. (CSR); S. Yazyl, Bobruysk. u., Minsk. gub., 26.06.10, leg. Mordvilko, [in Russian], 1 ex. (ZISP); Grodno reg., Novogrudok distr., near v. Skryshevo, melioration canal, 31.06.1994, leg Kavtsevich I., 1 ex. (CSR); Grodno reg., Novogrudok distr., near v. Valevka, rectify reservoir, 23.08.2001, 2 ex. (CSR); lake Svityaz, 22.08.2001, leg. Ryndevich S.K., 2 ex. (CSR); Brest, pools, 15.06.1985, 18 ex. (CSR); Brest reg., near Baranovichy, bog, 9.08.1989, leg. Ryndevich S.K., 5 ex. (ZMBU, CSR); same data, water storage reservoir, 28.05.1990, 7 ex. (CSR); same data, pond, 15.05.1993, 8 ex. (CSR); Brest reg., Baranovichy distr., near v. Krochin, bog, 29.04.1990, leg. Ryndevich S.K., 50 ex. (CSR); same data, 25.04.1996, 1 ex. (CSR), same data, river Shchara, 25.04.1996, 2 ex. (CSR); near v. Pogoreltzy, bog, 1.04.1990, leg. Ryndevich S.K., 3 ex. (CSR); near v. Litva, pond, 19.04.1996, leg. Ryndevich S.K., 4 ex. (CSR); near ch. Gelda, pond, leg. Ryndevich S.K., 6 ex. (CSR); near v. Vershok, river Issa, 27.07.1999, leg. Ryndevich S.K. 3 ex. (CSR); Brest reg., near Malorita, melioration canal, 22.07.1996, leg. Ryndevich S.K., 2 ex. (CSR); Brest reg., Belovezhskaya Pshcha, river P. Lesnaya, 29.07.1993, leg. M.D. Moroz, 1 ex. (CMM); Stolinskiy r-n, 22.05.1995, leg. Lukashuk A.O., [in Russian], 1 ex. (CSR); Mogilev reg., Osipovichi distr, v. Daraganovo, pond, 16.07.1987, leg. Ryndevich S.K., 2 ex. (CSR); Gomel reg., Zhitkovichi distr., national park «Pripiatskiy», near Hvoensk, pools, 20.06.1993, leg. Ryndevich S.K., 10 ex. (CSR) + 968 ex. from all regions of Belarus. THE UKRAINE: Hmelnitsk reg., Shepetovka distr., near v. Pleshchin, 27.05.1990, leg. M.A. Dzhus, 41 ex. (CSR); The Carpathians: Ivano-Frankovsk reg., near Yaremcha, stream, 2.05.1990, leg. Ryndevich S.K., 16 ex. (CSR); same data, pools, 30.07.1992, 4 ex. (CSR); Lvovskaya obl., Morshinskiy zakaznik, 19–25.09.1996, leg. Solodovnikov I.A., [in Russian], 2 ex. (CIS); The Crimea: Kizil. tal. [in Russian], Krim, 26.07.1908, leg. W. Pliginski, 1 ex. (ZISP), Sychat. dag., Krim, 18.06.1907, leg. Kiritshenko, *Anacaena limbata* det. Pliginskii, 1 ex. (ZISP); The Crimea, Gurzufskaya Yayla, near Partizanskoe, pool, 12.7.2000, leg. Ryndevich S.K., 5 ex. (CSR). MOLDOVA: Near Kishinev, 14.05.1988, leg. Melkomanovich D., 5 ex. (CSR). RUSSIA: THE EUROPEAN PART: Olgino, Petergofskiy u. 1.07.902, leg. Bianki, [in Russian], 1 ex. (ZISP); Peterb. gub., Serezhino, Yamburg., 18.08. 1895, leg. Bianki, [in Russian], 2 ex. (ZISP); Petropolis, 5 ex. (ZISP); Ostrovki na Neve, Shlisselb. u., leg.G. Yakobson, 6–28.06.1906, [in Russian], 5 ex. (ZISP), same data, 6.06.1896, 2 ex. (ZISP); Shuvalovo, Finlyandskoy zh. d. 22.05.1897, 12.07.1897, leg. Yakobson, [in Russian], 3 ex.; Der. Didelevo, Lenin. g. Volhov. u. 24.04.128, leg. I. Gudim, [in Russian], 5 ex. (ZISP); Torbino, Nikol. zh.d., Krest. u. Novg., 14.05.1908, 20.05.1908, leg. Filipiev, [in Russian], 15 ex. (ZISP); Novogorodsk. g., Valdaysk. u., 5.04.1908, 16.04.1908, leg. F. A. Zaytsev, *Anacaena limbata* F., Zaitzev det. [in Russian], 7 ex. (ZISP); Novg. g., Bologoe, 4.05.1904, [in Russian], 10 ex. (ZISP); Novg. g., Bologoe, prud, stahts., 7.05.1903–12.07.1903, *Anacaena limbata* F., Zaitzev det. [in Russian], 30 ex. (ZISP); Novg. g., Bologoe, 12.05–30.06.1903, Lubish, O.K., [in Russian], 11 ex. (ZISP); same data, oz. Zmeyka, 5.05.1903, Lubish, [in Russian], 5 ex. (ZISP); Novgor. u., r. Tigoda, 20.06.1903, leg. A. Semenov, [in Russian], 1 ex. (ZISP); same data, 12.04–6.05.1904, 3 ex. (ZISP); same data, 17–24.04.1905, 4 ex.(ZISP); Smolensk reg., near Vyazma, pools, 10.06.1993, leg. Ryndevich S.K., 8 ex. (CRS); Moskovskaya obl., Shevchenko, 7.09.1998, verch. boloto, leg. V.B. Semenov, [in Russian], 2 ex. (ZMUM); Brianskoe opytnoe lesnichestvo, 10.04.1908, Winogradoff-Nikitin, [in Russian], 23 ex. (ZISP); same data, 13.04. 1908, 1 ex. (ZISP); same data, 19.04. 1908, 1 ex. (ZISP); Moskovskaya obl., Toldomskiy r-n, okr. st. Meldino, niz. boloto, 24.04.1999, leg. Petrov, [in Russian], 4 ex. (ZMUM); okr. oz. Zol. Veshka, pools, 8.06.1999, leg. Petrov, [in Russian], 3 ex. (ZMUM); oz. Zol. Veshka, nanosy, 12.06.1999, leg. Petrov, [in Russian], 2 ex. (ZMUM); Voskresenskiy r-n, okr. st. Konobeevo, 22.07.1999, [in Russian], 3 ex.; Orechovo-Zuevskiy r-n, okr. Shevlyagino, 12.07.1999, leg. Nikitskiy, [in Russian], 3 ex. (ZMUM); same data, 08.09.1998, okr. st. Antsiferovo, 26.08.1998, leg. Nikitskiy, [in Russian], 2 ex. (ZMUM); same data 21.04.1998, leg. Nikitskiy, Semenov, 2 ex. (ZMUM); Moskva, nats. park «Losinyy Ostrov», 20.05–21.06.1997, leg. Kozlov, [in Russian], 3 ex. (ZMUM); Moskovskaya obl., Ramenskiy r-n, st. Chripon, 27.07.1998, leg. Nykitskiy, Petrov, [in Russian], 2 ex. (ZMUM), Moskovskaya obl., Otdych bl. Zhukovskogo, 17.08.1998, leg. Nikitskiy, 5 ex. (ZMUM); Moskovskaya obl., Ramenskiy r-n, st. Otdyh, ruchey, 18.06.1998, leg. Nykitskiy, Petrov, [in Russian], 2 ex. (ZMUM); Moskovskaya obl., 10 km W Zelenograd, kanavy, 30.05.1998, leg. Bienkovskiy, [in Russian], 8 ex. (CAB); Moskovskaya obl., 23 km zap. Zvenigorod, okr. oz. Glubokoe, 3.06–16.06.1994, leg. Bienkovskiy, [in Russian], 8 ex. (CAB); Glubokoe ozero, Mosk. gub., 3.06.1912, leg Plavilshchikov N., [in Russian], 1 ex. (ZMUM); Ligovo, 5.04.1904, [in Russian], 4 ex. (ZISP); same data, 5.1902, 2 ex. (ZISP); same data, 13.04.1906, 1 ex. (ZISP); same data, 29.04.1907, 2 ex. (ZISP), Ligovo, Baltiysk. zh.d., 4.08.1897, leg. Novotvortsev, [in Russian], 1 ex. (ZISP); Klin. u., Mosk. gub., Boblovo, pools and bog, 26.04.–30.06.1906, leg. D. Smirnov, [in Russian], 82 ex. (ZISP, CRS); Yarosl. u., Berditsyno, 2.08. 1895, leg. A.I. Yakovlev, [in Russian], 2 ex. (ZISP); same data, 24.04.1898, 2 ex. (ZISP); same data, 21–24.08.1902, 13 ex. (ZISP); same data, 6.04.1903, 5 ex. (ZISP); N. Kokouew, Iaroslawl, [in Russian], 4 ex. (ZISP); Voronezh, [in Russian], 1 ex. (ZISP); Riazan gub., Zarayskiy u., Rybakov, [in Russian], 1 ex. (ZISP); Riazan, 6 ex.; okr. Kalugi, 1.04.913, leg. Chernyshev, [in Russian], 2 ex. (ZISP); Sam./ Samara/, 4.05.1889, 1 ex (ZISP) + 210 ex. from different regions of the European part of Russia. THE ASIAN PART: St. Uktus bl. Ekaterinburga, Perms., 17.06.1910, leg. G. Yakobson, [in Russian], 1 ex. (ZISP); Altayskiy kray, Soloneshensk. r-n, g. Butachiha mezhdu selom Elinovo i Telezhino, 1700–2000m, 13–15.04.1988, leg. A. Kireychuk, [in Russian], 1 ex. (ZISP). Kemerovo reg., Novokuznetsk distr., NE Kuzedeevo, «Lipovyy ostrov», river Malyy Tesh, decomposing riverweed, 17.07.1994, leg. A.B. Ryvkin, 3 ex. (CRS), same date 21.08.1994, 12 ex.(CRS). GEORGIA: Bakuriani distr., Gori, 5500, 12.VI.13, 4 ex. (ZISP), Gori, 30.VI.16, 1 ex. (ZISP). KAZAKHSTAN: S. Topolevka, Dzhungarskiy Alatau, 8.05.1957, vodoem v poyme reki Terent., leg. I.M. Kerzhner, [in Russian], 2 ex. (ZISP). ARMENIA: Lac Gokea vic., Mus. Armen., Exp. Sevang 1923, 3 08.1923, 5 ex. (ZISP), same data, 12.08.1923, 6 ex. (ZISP); Daračičag vic, distr. Erivan, 24.VIII.12, 3 ex. (ZISP, CRS). FRANCE: Lilla (Gallia), 1 ex. (ZISP); France, Northern Vosges, 1,5 km S.-W. La Petite-Pierre, 28.04.1996, leg. M.A. Dzhus, 18 ex. (CSR); Sardinia, Sas Baddes, 2.06.1981, leg. M. Malicky, 2 ex. (CSR). ITALY: Calabria, Antonimina, leg. Paganetti, 6 ex. (ZISP, CRS); Sicilia, Nr 3–5.06.1985, leg. R. Gerecke, 1 ex. (CSR). GERMANY: Böhmen Funresns., Germania, 1 ex. (ZISP). AUSTRIA: Styria, Konig., 94, 2 ex. (ZISP). CZECH REPUBLIC: Moravia, leg. Reitter, 1 ex. (ZISP). SERBIA: Beograd, 1 ex. (ZISP).

Description. Body oval, moderately convex (Fig. 1); dorsal side shiny, without microsculpture; punctation of dorsal side uniform and dense, being denser towards the lateral sides of pronotum and elytra, head punctures varying in size; head and labrum black; antennae yellowish-brown; maxillary palps brown or yellowish-brown except black or dark-brown last segment; pronotum black with broad yellow lateral margins;



Figs 15–32. *Anacaena* spp., carina of mesosternum, right view: 15–17 — *A. taurica*: from South Crimea (15–16), from the Caucasus (17); 18–24 — *A. lutescens*: from Northern Vosges, France (18), from Moscow oblast', Russia (19), from South Crimea (20, 22), from Kemerovo oblast', Russia (21), from Baranovichy, Belarus (23–24); 25–28 — *A. limbata*: from Stolbtzy, Belarus (25), from Urzhum, Russia (26), from Dilizhan, Armenia (27), from Kustanay, Kazakhstan (28); 29 — *A. lohsei*, from Italy; 30 — *A. gaetanae*; 31 — *A. globulus*, from Lvov oblast', the Carpathians, the Ukraine; 32 — *A. bipustulata*, from the Netherlands. Scale bar 0.14 mm. 15–29, 31–32 — orig., 30 — after Bameul [2001].

Рис. 15–32. *Anacaena* spp., отросток среднегруди, вид справа: 15–17 — *A. taurica*: из Крыма (15–16), с Кавказа (17); 18–24 — *A. lutescens*: из Северных Вогез, Франция (18), из Московской области (19), из Крыма (20, 22), из Кемеровской области, Россия (21), из Барановичей, Беларусь (23–24); 25–28 — *A. limbata*: из Столбцов, Беларусь (25), из Уржума, Россия (26), из Дилижана, Армения (27), из Кустаная, Казахстан (28); 29 — *A. lohsei*, из Италии; 30 — *A. gaetanae*; 31 — *A. globulus*, из Львовской области, Карпаты, Украина; 32 — *A. bipustulata*, из Нидерландов. Масштабная линейка 0,14 мм.. 15–29, 31–32 — ориг., 30 — по [Bameul, 2001].



Figs 33–41. *Anacaena* spp., metendosternit (33–39), last fore-tarsal segment of male (40–41): 33–34, 41 — *A. taurica*: from South Crimea (33), from the Caucasus (34), from Sicilia, Italy (41); 35–36, 40 — *A. lutescens*: from Baranovichy, Belarus (35); from Northern Vosges, France (36); 37–38 — *A. limbata*: from Stolbtzy, Belarus (37), from Dilizhan, Armenia (38); 39 — *A. globulus*, from Lvov oblast', the Carpathians, the Ukraine. The area of the crax shown with white arrows and the carve between branches of metendosternit shown with black arrows in the figures. Scale bars: 0.5 mm (33–39), 0.1 mm (40–41).

Рис. 33–41. *Anacaena* spp., метэндостернит (33–39), последний членик передних лапок самца (40–41): 33–34, 41 — *A. taurica*: из Южного Крыма (33), с Кавказа (34), из Сицилии, Италия (41); 35–36, 40 — *A. lutescens*: из Барановичей, Беларусь (35); из Северных Вогез, Франция (36); 37–38 — *A. limbata*: из Столбцов, Беларусь (37), из Дилижана, Армения; 39 — *A. globulus*, из Львовской области, Карпаты, Украина. Область кракса показана белыми стрелками, впадина между ветвями метэндостернита — чёрными стрелками. Масштабные линейки: 0,5 мм (33–39); 0,1 мм (40–41).

scutellum brownish, brownish-red or black; elytra brown, reddish-brown or brownish-yellow with small round brown and black spots and dots; in some specimens elytra black with reddish-brown lateral sides; ventral side black; mesosternum with distinct, acutely pointed transverse carina (Figs 18–24); the carina tooth of mesosternum looks up; legs reddish or brownish, in some specimens femora black or dark brown; hairline on underside of hind femur oblique, reaches hind margin (Fig. 4). Secondary sexual characteristics in male present in last fore-tarsal segment, which is inflated distally and bears a few strong spines on its inferior side (Fig. 40). Genitalia of male as in Figs 7–8; metendosternit as in Figs 35–36. Length 2.3–3.1 mm.

Comments. This species has variable characteristics depending on the area of its distribution (Figs 18–24).

A. lutescens differs from other species in its black head, structure of carina of mesosternum and male genitalia. It is similar to *A. lohsei* and *A. gaetanae* in male genitalia, but it differs from these species by the structure of mesosternum and the elytra coloration. Metendosternite of *A. lutescens* between branches in comparison with other species of *Anacaena* is deeply impressed. Some young, not almost completely sclerotized specimens have carina of mesosternum with a small soft tooth bent behind (Fig. 24); furthermore, this carina in adults acquires a specific shape of *A. lutescens*; the functional importance of this morphological structure is not quite clear yet, but it is probably used during feeding or in sexual contacts.

Populations of *A. lutescens* of the European part of Russia and adjacent regions are partenogenetic. The bisexual populations occur only in the mountains of the South Crimea. Probably, the Caucasian population is also bisexual.

Distribution. EUROPE: Portugal, Spain, Great Britain, France, the Netherlands, Belgium, Luxembourg, Switzerland, Italy, Malta, Denmark, Germany, Austria, Poland, Czech Republic, Serbia, Greece, Norway, Sweden, Finland, Estonia, Latvia, Lithuania, Belarus, the Ukraine (includes the Crimea and the Carpathians), Moldova, Russia (European part, the North Caucasus), Georgia, Armenia. ASIA: Russia (the Ural, south and center of West Siberia), Kazakhstan. AFRICA: Morocco, Algeria, Egypt. ?NORTHERN AMERICA: Canada, USA (all records need confirmation).

Notes. This species is recorded for the first time from Serbia, Moldova, Georgia, Armenia, Asian Russia and Kazakhstan. Records of *A. globu/lu/s* [Zaytsev, 1908] and *A. globulus* [Lindemann, 1871; Zaytsev, 1929] from Russia and *A. limbata* [Zaytsev, 1915, 1928, 1929, 1952 (part)] from Russia and Georgia belong to *A. lutescens.*

Habitats. *A. lutescens* inhabits a range of water bodies: streams, springs, rivers, old river-beds, lakes, bogs, pools, ponds, storage reservoirs and canals.

Anacaena taurica Ryndevich, 2000
Figs 5, 9–10, 15–17, 33–34, 41.

Anacaena limbata sensu Zaytsev, 1952, (part) (non *limbata* (Fabricius, 1792));

Anacaena globulus Paykull, 1798 sensu Zaytsev, 1952 (non *globulus* (Paykull, 1798));

Anacaena taurica Ryndevich, 2000a.

Material. Type material: Holotype (male) the Ukraine, the Crimea, Gurzuf, pond Lapot, 0.4 m deep, 12.07.1999, leg. Ryndevich S.K. (ZISP); paratypes (see desription). THE UKRAINE: Crimea, near Gurzuf, pond, 5.07.2000, leg. Ryndevich, S.K., 2 ex. (CRS), same data, 11.07.2000, 5 ex. (CRS), same data, streams, 3–5.07.2000, 11 ex. (CRS), Gurzufskaya Yayla, near Partizanskoe, pools, 12.7.2000, leg. Ryndevich, S.K., 17 ex. (CRS), mount. Ay-Iliya-Syrym, pools on place of stream, 12.07.2001, leg. Ryndevich, S.K., 5 ex. (CRS). RUSSIA: Krasnodar. Kr., Ubinskoe lesn., 15–16.VII.1986, leg. Nikitskiy, [in Russian], 1 ex. (ZMUM), same data, 1–2.VII.1986, 2 ex. (ZMUM, CRS); Krasnodar. Kr., Severskiy r-n, st. Ubinskaya, 30.VI.1988, leg. Nikitskiy [in Russian], 1 ex. (ZMUM). N. Caucasus, near Teberda, creek of mountain stream, 30.04.1989, leg. Ryndevich S.K., 4 ex. (ZISP, CRS). GEORGIA: Ahankalinskiy u., Tifl., 1 ex. (ZISP).

Description. Body oval, moderately convex; dorsal side shiny, without microsculpture; punctation of dorsal side regular and dense, closer towards the lateral sides of the pronotum and elytra, head punctures of varying diameter; head and labrum black; antennae yellowish-brown, maxillary palps brown or yellowish-brown except black or dark brown apical segment; pronotum black with lateral sides broadly yellow; scutellum brownish; elytra brown or brownish-yellow with small black or brown spots and uniform dense punctation; ventral side black; mesosternum with distinct, acutely pointed transverse carina (Figs 15–17); sharp tooth of carina always turned back; legs reddish or brownish; in some specimens femora black or dark brown; hairline of hind femur underside oblique (Fig. 5), reaches hind margin. Secondary sexual characteristics in male absent, last foretarsal segment of males of *A. taurica* not inflated distally (Fig. 41). Genitalia of male as in Figs 9–10; metendosternite as in Figs 33–34. Length 2.3–2.9 mm.

Comments. *A. taurica* is closely related to *A. lutescens,* particularly in terms of its habit, but the male of *A. taurica* is easily distinguishable by the shape of its genitalia, with sharper apex to penis, and absence of secondary sexual characteristics. Both species have some minor distinctions in the structure of the carina of mesosternum: the sharp tooth of the carina of *A. taurica* is always turned back and less prominent behind the apex (Figs 15–17). This characteristic can be clearly seen in all specimens form the Crimea, but is variable in some Caucasian specimens. There are some minor distinctions between *A. taurica* and *A. lutescens* in the structure of the metendosternite: *A. taurica* has a wider and spacious area of metendosternite crax (Figs 33–34) in comparison with *A. lutescens* (Figs 35–36). The male genitalia of *A. taurica* look like those of *A. bipustulata* (Fig. 14), but the hairline on the underside of the hind femur (Fig. 2) differs as well as other characteristics of habit. The tooth of the carina of *A. taurica* is a fairly similar to that of *A. gaetanae* (Fig. 30). *A. taurica* differs from *A. lohsei* and *A. gaetanae* in the structure of the male genitalia (Fig. 12), in the structure of the mesosternum (Fig. 29) and coloration of the beetle covers. *A. taurica* differs from *A. limbata* by having a completely black head and sharp difference in the hairline on the underside of the hind femur.

Distribution. EUROPE: Ukraine (mountains of South Crimea), Russia (mountains of Northern Caucasus), Georgia, Armenia.

Notes. This species is recorded for the first time from Russia (Northern Caucasus). Records of *A. globulus* (in ZISP, determined as *Creniphilus globulus* Payk.) from the Caucasus [Zaytsev, 1952] belong to *A. taurica.*

Habitats. *A. taurica* inhabits mountain streams, pools and ponds.

Anacaena globulus – group

Body broadly oval; head black, lateral margins of clypeus in front eyes reddish-brown; mesosternum with slightly raised median clear transverse callosity or flat, with very clear transverse callosity.

Anacaena globulus (Paykull, 1798)
Figs 6, 11, 31, 39.

Hydrophilus globulus Paykull, 1798 (Official Specific Name No.1702, cf. ICZN, 1960: 281);

Hydrobius glabricollis Schaufuss, 1896: van Berge Henegouwen, 1986 (not syn. of *bipustulata* as in Zaitsev, 1908a);

Anacaena globula (Paykull): Shatrovskiy, 1988; Kireychuk, Shatrovskiy, 2001;

Anacaena globula var. nitidor Kuwert, 1890: van Berge Henegouwen, 1986;

Anacaena globulus elliptica Sainte-Claire Deville, 1914: van Berge Henegouwen, 1986;

Anacaena globulus (Paykull): Yacobson, 1905–1913; Zaitzev, 1908a; Karpinski, 1949; Klefbeck, Sjöberg, 1960; Medvedev, 1965; Lohse, 1971; Burakowski et al., 1976; van Berge Henegouwen, 1986; van Berge Henegouwen, Hebauer, 1989; Kodada, Majzlan, 1986 [1987]; Hansen, 1987a, 1987b, 1999; Braun, 1987; Nilsson, 1987; Krause, Zinke, 1989; Silfverberg, 1992; Říha, Jelinek, 1993; Hebauer, 1994; Kordylas, 1994; Ribera, Aguilera, 1996; Carr, 1997; ?Telnov et al., 1997; Mölle, 1998; Hebauer, Klausnitzer, 1998; Bameul, 2001; Kireychuk, Shatrovskiy, 2001.

Material. THE UKRAINE: Ukraina, Lvov. obl., Morshinskiy zak., 19.09.1996, leg. I.A. Solodovnikov [in Russian], 6 ex.; same data, 21.09.1996, 2 ex.(CIS); same data, 25.09.1996, 4 ex. (CSR). SPAIN: Spain. Perinei, 23.VII.1900, 1 ex. FRANCE: France, Northern Vosges, 1.5 km SW La Petite-Pierre, 28.04.1996, leg. M. Dzhus, 3 ex.; Med. vecid., C.U. Kaffray, 1 ex. GERMANY: Hercynia, k. Solskogo, 1 ex.

Description. Body broadly oval, convex; dorsal side shiny without microsculpture; punctation of dorsal side dense, closer towards lateral sides of pronotum and elytra, head punctures vary in diameter; elytra with sparse and fine punctation; head and labrum black, lateral margins of clypeus in front of eyes reddish-brown; antennae yellow except brown club, maxillary palps yellow except black or totally dark brown last segment or its apical half; pronotum dark brown, lateral sides of pronotum with wide, anterior side with narrow yellowish band; scutellum brownish; elytra dark brown or brown with lateral sides and apex broadly yellowish or brownish-yellow; in some specimens elytra totally brownish-yellow; ventral side black; mesosternum with slightly raised median clear transverse callosity (Fig. 31); legs reddish or brownish; in some specimens femora black or dark brown; hind femur hairline S-shaped, non-pubescent portion confined to apical third (Fig. 6). Secondary sexual characteristics in male absent. Genitalia of male as in Fig. 11, metendosternit as in Fig. 39. Length 2.3–2.9 mm.

Distribution. EUROPE: Portugal, Spain, Andorra, Ireland, Great Britain, France, the Netherlands, Belgium, Luxembourg, Italy, Denmark, Germany, Austria, Poland, Czech Republic, Norwegian, Sweden, Finland, ?Estonia (all records need confirmation), the Ukraine (the Carpathians). AFRICA: Morocco, Algeria.

Habitats. *A. globulus* inhabits streams, rivers, pools and ponds.

Anacaena rufipes (Guillebeau, 1896)
Figs 42–43.

Paracymus rufipes Guillebeau, 1896 (specific rank confirmed by van Berge Henegouwen, 1986);

Anacaena globulus ssp. *glabricollis* Orchymont, 1940 (misinterpret. of *Hydrobius glabricollis* Schaufuss): van Berge Henegouwen, 1986;

Anacaena jordanensis Burmeister, 1985: van Berge Henegouwen, 1986;

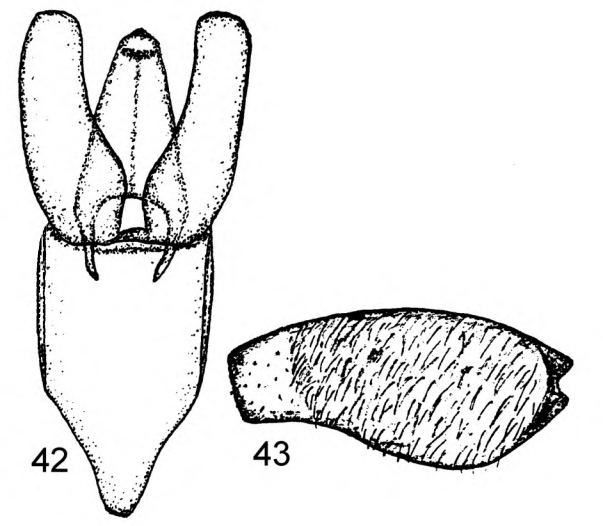
Anacaena rufipes (Guillebeau): Orchymont, 1925; van Berge Henegouwen, 1986; van Berge Henegouwen, Hebauer, 1989; Hebauer, 1994; Hebauer, Klausnitzer, 1998; Bameul, 2001; Kireychuk, Shatrovskiy, 2001.

Material. Greece, 1 ex (ZISP).

Description. Body broadly oval, convex; dorsal side shiny without microsculpture; punctation of dorsal side dense; head punctures vary in diameter; punctation of pronotum and basal half of elytra fine and sparse; in apical half denser; elytra with longitudinal rows near lateral sides and apical half; head and labrum black, lateral margins of clypeus in front eyes reddish brown; antennae yellow except yellowish-brown club, maxillary palps yellow except dark brown apical half of last segment; pronotum dark brown, lateral sides of pronotum with wide, anterior side with narrow yellowish band; scutellum dark brown; elytra dark brown, lateral side and apex yellowish-brown; ventral side black; mesosternum almost flat, with very slightly raised median clear transverse callosity; legs reddish-brown; hair-line on underside of hind femur distally rounded, non-pubescent portion confined to apical fifth (Fig. 43). Sexual dimorphism in shape of last fore-tarsal segment in male absent. Genitalia of male as in Fig. 42. Length 2.1–3.3 mm.

Distribution. EUROPE: Italy, Bosnia-Herzegovina, Greece, «Caucasian coast of Black Sea». ASIA: Turkey, Israel, Lebanon, Syria.

Habitats. *A. rufipes* inhabits streams, springs, river, bogs, pools, canals and ponds.



Figs 42-43. *A. rufipes* (Guillebeau) from Greece: 42 — genitalia of male; 43 — hind femur (43).

Рис. 42-43. *A. rufipes* (Guillebeau) из Греции: 42 — гениталии самца; 43 — заднее бедро.

KEY TO EUROPEAN SPECIES OF *ANACAENA* THOMSON

1(4) Mesosternum flat, or slightly raised medially, without transverse carina (Fig. 31); body broadly oval.
2(3) Hair-line rounded distally, non-pubescent portion confined to apical fifth (Fig. 43); genitalia of male as in Fig. 42. ..... ***A. rufipes*** (Guillebeau)
3(2) Hair-line on underside of hind femur S–shaped distally, non-pubescent portion confined to apical third (Fig. 6); genitalia of male as in Fig. 11. ....***A. globulus*** (Paykull)
4(1) Mesosternum with distinct, acutely pointed transverse carina (Figs 15–30, 32); body oval (Fig. 1).
5(6) Hairline on underside of hind femur rounded distally (Fig. 3); male genitalia as in Fig. 13. .... ***A. limbata*** (Fabricius)
6(5) Hairline oblique (Figs 2, 4–5).
7(8) Hairline not reaching hind margin (Fig. 2); head in front of eyes, pronotum except central and adjacent black or brown spots, elytra yellow or brownish-yellow; genitalia of male as in Fig. 14. ..... ***A. bipustulata*** (Marsham)
8(7) Hairline reaching hind margin (Figs 4–5); head black, pronotum black except lateral brownish-yellow sides; elytra black, brown, reddish-brown or brownish-yellow, with lateral reddish-brown or yellowish sides, and small round brown and black spots and dots.
9(12) Elytra black-brown, reddish-brown or brownish-yellow.
10(11) Tooth of carina of mesosternum directed upwards; carina more prominent in the back part at the apex (Figs 18–24); metendosternit has narrower area of crax (Figs 35–36); last fore-tarsal segment of males inflated distally (Fig. 40); apex of penis not pointed (Figs 7–8). .... ***A. lutescens*** (Stephens)
11(10) Sharp tooth of carina directed backwards; carina less prominent in the back part at the apex (Figs 15–17); metendosternit. with wide and strong area of crax (Figs 33–34); last fore-tarsal segment of males not inflated distally (Fig. 41); apex of penis pointed (Figs 9–10). ... .***A. taurica*** Ryndevich
12(9) Elytra black.
13(14) Small species, reaching 2.1–2.32 mm in length; mesosternal carina with short sharp tooth bent behind (Fig. 30). *A. gaetanae* Bameul
14(13) Large species, reaching 2.7–2.96 mm in length; mesosternal carina with long sharp tooth (Fig. 29); genitalia of male as in Fig. 12. .... ***A. lohsei*** van Berge Henegouwen et Hebauer

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1(4) Среднегрудь плоская, без поперечного киля, или слабо приподнята посередине (рис. 31). Тело широкоовальное.
2(3) Волосяная линия на нижней стороне заднего бедра округлена на вершине, часть вершины бедра, не покрытая волосками, составляет 1/5 от общей длины бедра (рис. 43). Гениталии самца см. рис. 42 . ...***A. rufipes*** (Guillebeau)
3(2) Волосяная линия на нижней стороне заднего бедра S–образная по краю, часть вершины бедра, не покрытая волосками, составляет 1/3 (рис. 6). Гениталии самца см. рис. 11. .....***A. globulus*** (Paykull)
4(1) Среднегрудь с чётким, заострённым поперечным отростком (рис. 15–30, 32). Тело овальное (рис. 1).
5(6) Волосяная линия на нижней стороне задних бёдер округлена на вершине (рис. 3). Гениталии самца см. рис. 13. ..... ***A. limbata*** (Fabricius)
6(5) Волосяная линия скошена по краю (рис. 2, 4–5).
7(8) Волосяная линия на нижней стороне заднего бедра не достигает заднего края бедра (рис. 2). Голова впереди глаз, переднеспинка, за исключением центрального и боковых чёрных или коричневых пятен, надкрылья жёлтые или коричневато-жёлтые. Гениталии самца см. рис. 14. ..... ***A. bipustulata*** (Marsham)
8(7) Волосяная линия на нижней стороне заднего бедра достигает заднего края бедра (рис. 4–5). Голова чёрная, переднеспинка чёрная, за исключением коричневато-жёлтых боковых краев. Надкрылья чёрные, коричневые, красновато-коричневые или коричневато-жёлтые, с красновато-коричневыми или коричневато-жёлтыми боковыми сторонами и маленькими округлыми коричневыми или чёрными пятнами и точками.
9(12) Общая окраска надкрылий чёрно-коричневая, красновато-коричневая или коричневато-жёлтая.
10(11) Зуб отростка среднегруди отогнут вперёд. Отросток более мощный в задней части у вершины (рис. 18–24). Метэндостернит имеет более узкую область кракса (рис. 35–36). Последний членик передних лапок самца расширен на вершине (рис. 40). Вершина пениса не заострена (рис. 7–8). .... ***A. lutescens*** (Stephens)
11(10) Зуб отростка среднегруди отогнут назад. Отросток менее мощный в задней части у вершины (рис. 15–17). Метэндостернит имеет более широкую и мощную область кракса (рис. 33–34). Последний членик передних лапок самца не расширен на вершине (рис. 41). Вершина пениса чётко заострена (рис. 9–10). ....***A. taurica*** Ryndevich
12(9) Общая окраска надкрылий чёрная.
13(14) Мелкий вид, длиной 2,1–2,32 мм. Отросток среднегруди с коротким острым зубом (рис. 30). .... ***A. gaetanae*** Bameul
14(13) Крупный вид, длиной 2,7–2,96 мм. Отросток среднегруди с длинным острым зубом (рис. 29). Гениталии самца см. рис. 12. .... ***A. lohsei*** van Berge Henegouwen et Hebauer

More detailed morphological characteristics of *A. bipustulata, A. lohsei*, *A. gaetanae* are provided in van Berge Henegouwen [1986], van Berge Henegouwen, Hebauer [1989] and Bameul, [2001].

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