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Review of species of the genus *Cercyon* Leach, 1817 of Russia
and adjacent regions. I. Subgenus *Cercyon* (s. str.) Leach,
1817. *Cercyon lateralis* — group (Coleoptera: Hydrophilidae)

Przegląd gatunków rodzaju *Cercyon* Leach, 1817 Rosji oraz regionów sąsiednich.
I. Podrodzina *Cercyon* (s. str.) Leach, 1817. *Cercyon lateralis* —
grupa (Coleoptera: Hydrophilidae)

SUMMARY

Morphological diagnoses, distribution and environmental preferences of species of *Cercyon lateralis* — group *C. lateralis* (Marshall, 1802), *C. ustus* Sharp, 1874, *C. inquinatus* Wollaston, 1854 of the subgenus *Cercyon* (s. str.) of Russia and adjacent regions are presented. Lectotype and paralectotypes of *C. ustus* Sharp are designated. *Cercyon rhombicus* Jia, 1995 is placed in synonymy with *C. inquinatus*.

STRESZCZENIE

W artykule przedstawione są diagnozy morfologiczne, dane dotyczące rozpowszechnienia oraz preferowane miejsca zamieszkania gatunków żuków *Cercyon lateralis* — grupy *C. lateralis* (Marshall, 1802), *C. ustus* Sharp, 1874, *C. inquinatus* Wollaston, 1854, z podrodzaju *Cercyon* (s. str.) w Rosji oraz w regionach sąsiednich. Został określony lektotyp i paralectotypy *C. ustus* Sharp. *Cercyon rhombicus* Jia, 1995 jest połączony synonimicznie z *C. inquinatus*.

Key words: entomology, taxonomy, Coleoptera: Hydrophilidae, *Cercyon*, Russia.

INTRODUCTION

The genus *Cercyon* Leach comprises 258 species and is of world-wide distribution. Seventy species inhabit the territory of Palearctic, 41 recorded species out of them were from Russia (11, 14, 45, 48, 51, 56).

Species of this genus have the body from oval to broadly oval, from moderate to strongly convex, rarely with pronotum more convex than elytra. Antennae is 9-segmented. Pronotum is the widest at base, moderately narrowed anteriorly, evenly convex. Elytra is with 10 fine punctate striae or rows (sometimes last row reduce). Epipleura of elytra normally weakly oblique or almost horizontal, narrow, reaching metacoxae. Pseudoepipleura is weakly oblique, narrow or rather narrow throughout. Sometimes epipleura and pseudoepipleura are rather strongly oblique and widest. Prosternum is rather well developed, strongly tectiform and carinate medially. Elevated middle portion of mesosternum is elongate oval. Metasternum is with pentagon in the middle. Males have a sucking-disc shaped appendage on maxilla.

The genus comprises 11 subgenera. The subgenus *Cercyon* (s. str) is the most numerous (197 species), 37 recorded species out of them were from Russia (11, 14, 45, 48, 51, 56). The characteristic features of it are body from oval to broadly oval, dorsal convexity not interrupted between pronotum and elytra, flat epipleura of elytra horizontal, mesosternal elevation forming an elongate oval to subparallel tablet and contacting metasternum in a single point.

This article is the first all-embracing paper on *Cercyon* for Russia. It presents thorough consideration of the species registered in the territory under study and the adjacent regions and whose placement in Russia is quite possible.

MATERIAL AND METHODS

As the material basis for this article there were used the results of our investigations in Russia, Belarus, the Ukraine within the period 1989–2002 and studying the materials on *Cercyon* of collections of Zoological Institute of: the Russian Academy of Sciences, St. Petersburg, Russia (ZISP), Zoological Museum of Moscow State University, Moscow, Russia (ZMUM), The Natural History Museum, London, the United Kingdom (NHML), Zoological Museum of Belarus State University, Minsk, Belarus (ZMBU), Belarus State Pedagogical University, Minsk, Belarus (BSPU), Louisiana State University, Baton Rouge, USA (LUBR), Dr A. O. Bienkovskiy (CAB), Dr. I. A. Solodovnikov (CIS) and the author's collection (CSR).

The possibility of identification of the species of *Cercyon* according to peculiarities of habitus, colour, genitalia of a male, structure of mesosternum and metasternum have been studied. We used such characters for division to species-group as the: form of the body; view of clypeus; presence of elytral microsculpture; view of striae and intervals of elytra; colour of maxillary palpi; colour of head and pronotum; colour of elytra; index of elevated middle portion of mesosternum; presence of femoral lines; size (conditionally).

RESULTS AND DISCUSSION

Cercyon lateralis — the group includes species with the body from oval to broadly oval, linear clypeus, dark head and pronotum, pale maxillary palpi, elytra

from brownish-black to reddish-brown without microsculpture, striae of elytra shallow or distinctly impressed apically, narrow or very narrow elevated middle portion of mesosternum, metasternum without femoral lines, length 2–3.1 mm. Specimens inhabit different decomposing organic matters.

Morphological diagnoses, distribution and environmental preferences of species of the *Cercyon lateralis* group are presented below.

Cercyon (s. str.) *lateralis* (Marsham, 1802)

Dermestes lateralis Marsham, 1802.

Cercyon laierale (Marsham): (31).

Sphaeridium rufum Sturm, 1826. *Cercyon rufum* (Sturm), Sturm, 1843.

Cercyon incrematus Notman, 1920.

Cercyon lateralis (Marsham): (1–17, 20, 22–28, 34, 38–44, 46, 47, 49–54, 56–58, 60–64, 67) (distribution and environmental preferences).

Description. Body oval. Dorsal side weakly convex, shiny, without microsculpture, with fine and dense punctation. The species has very variable colour. Head and pronotum black to brown-black. Antennae and maxillary palpi from pale yellow to yellow-red, club of antennae darker. Pronotum with broad paler margin on lateral sides (Fig. 1.1). Sometimes pronotum with slim reddish margin on anterior and basal sides. Angles of pronotum broadly rounded. Scutellum small. Colour of elytra dark brown to yellow-brown or yellow-reddish, elytral suture dark. Lateral margin and apex of elytra yellow-brown. Spot on apex of elytra large (Fig. 1.4). Lateral ray of the spot almost reaches humeral. Humeral tuberculous weak, reddish or reddish-brown. Young specimens have brownish-yellow elytra with dark suture. Elytra with nine shallow punctate striae and one rudimentary punctate row (sometimes row reduce). Punctation of elytra dense and regular. Ventral side black or dark brown. Suprapleural part of prosternum, elytral epipleura reddish-yellow. Abdomen reddish-yellow to yellowish. Posterior abdomen segments reddish. Elevated middle portion of mesosternum very narrow (index length: width 4.9–5.1) (Fig. 1.7). Metasternum without femoral lines. Legs yellow-reddish, tarsi paler. Male genitalia shown in Figs 2.7–2.9. Length 2.3–3.1 mm.

Material examined:

Paleartic: Lithuania. Near Vilnius, 18.07.1995, leg. Ryndevich A. G., 1 specimen (CSR). Poland. Near Warsaw, 12.06.1995, 2 specimens (CRS). Belarus. 3 km S-E Vitebsk, 4.05.1993, 2 specimens, same date, in fungus *Phallus impudicus*, 31.07.1990, leg. I. A. Solodovnikov, 1 specimen (CIS); Surazh, 27.07.1989, 1 specimen (CIS); Vitebsk reg., near Braslav, cow dung, 26.07. 1995, leg. Ryndevich S. K., 4 specimens (CSR); Vitebsk reg., Lepel distr., res. Berezin-

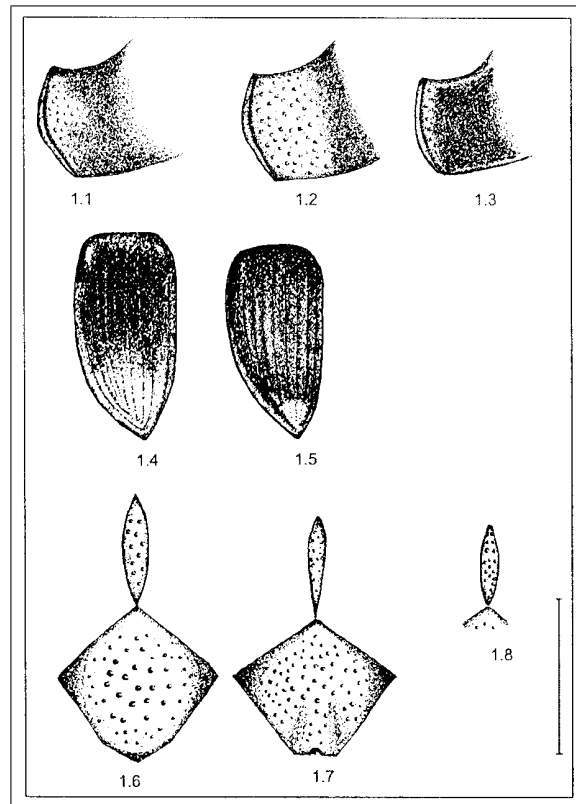


Fig. 1. Pronotum, elytra and elevated middle portion of mesosternum with metasternum pentagon of *Cercyon*. Pronotum: 1.1 — *C. lateralis*; 1.2 — *C. ustus*; 1.3 — *C. inquinatus*. Elytra: 1.4 — *C. lateralis*; 1.5 — *C. inquinatus*. Elevated middle portion of mesosternum with metasternum pentagon: 1.6 — *C. ustus*; 1.7 — *C. lateralis*; 1.8 — *C. inquinatus*. Scale for figures 1.6–1.8 — 0.5 mm

skiy, near v. Domzheritzzy, on light, 10.05.1989, leg. Ryndevich S. K., 1 specimen (CSR); same date, in dung, 3.06.1994, 3 specimens (CSR); same date, in dung, 5.06.1994, 50 specimens (CSR); same date, in dung, 1.07.1997, 90 specimens (CSR); Vitebsk reg., Lepel distr., near v. Nivki, 27.04.1994, leg. Lukashuk A. O. 3 specimens (CSR); Rozhnyanskoe lesnichestvo, cow dung, 13.09.1983, leg. Lukashuk A. O. 1 specimen (CSR); Rossony distr., v. Yuhovichi, 17.08.1989, leg. Saluk S. V., 1 specimen (CSR); Dubrovno distr., v. Buraya, 23.05.1991, 6 specimens (ZMBU, CRS); Near Minsk, cow dung, 18.06.1989, leg. Ryndevich S. K., 5 specimens (ZMBU, CRS); Minsk distr., near v. Volovina, nest of song trust, 22.05.1988, leg. Pisanenko A. D., 7 specimens (ZMBU, CRS); Minsk reg., Nesvizh distr., near Gorodeya, dung, 21.05.1989, 16.06.1989, leg. Ryndevich S. K., 12 specimens (ZMBU, CSR); same data, in decomposed onion,

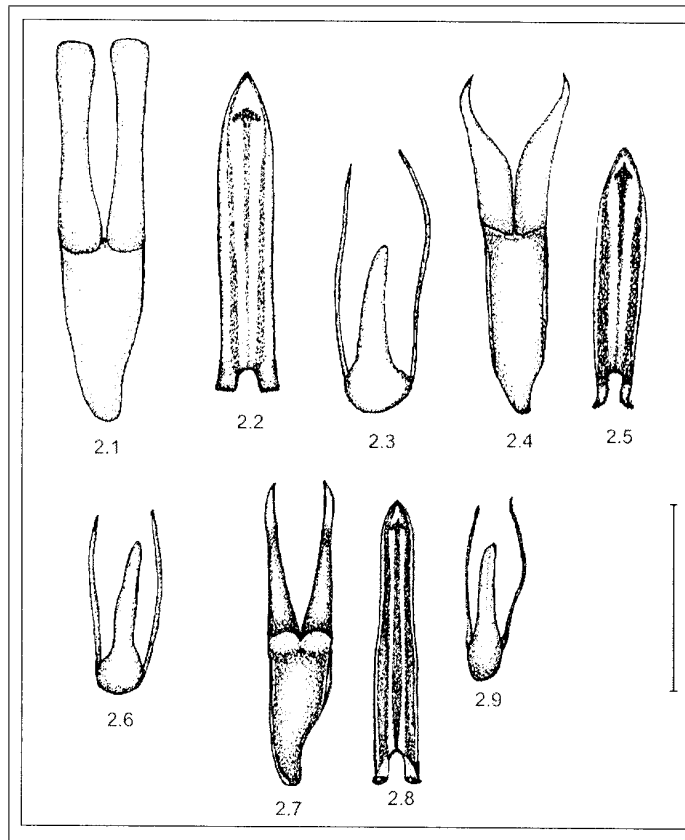


Fig. 2. Male genitalia of *Cercyon*: 2.1, 2.2, 2.3 — *C. ustus*; 2.4, 2.5, 2.6 — *C. inquinatus*; 2.7, 2.8, 2.9 — *C. lateralis*; 2.1, 2.4, 2.7 — tegmen with parameres; 2.2, 2.5, 2.8 — penis; 2.3, 2.6, 2.9 — genital segment. Scale for figures 2.1–2.9 — 0.5 mm

25.05, 1989, leg. Ryndevich S. K., 1 specimen (CRS); Minsk reg., Vileyka distr., near v. Budishchy, under nest of honey buzzard, 28.07.1988, leg. Pisanenko A. D., 3 specimens (ZMBU, CRS); Brest reg., Baranovichy distr., near Polonka, cow dung, 20.07.2001, leg. Ryndevich S. K., 4 specimens (CSR); Baranovichy distr., near v. Vershok, deer dung, 15.07. 2000, leg. Ryndevich S. K., 1 specimen (CSR); Belovezhskaya pushcha, 16.06.1991, leg. O. R. Aleksandrovich, 1 specimen; same date 20.08.1991, 2 specimens (BSPU); Belovezhskaya pushcha, Kamenyuki, dung, 6.06.1994, 5 specimens (BSPU); Rechitsa distr., v. Gorval, 26.05.1989, leg. O. R. Aleksandrovich, 2 specimens (BSPU); Mogilev reg., Bobruysk distr., Damanovo, 25.05.1990, 18 specimens (BSPU); Gomel reg., Zhitkovichy distr., national park „Pripiatskiy”, near Hvoensk, horse and cow dung, 15.06.1994, leg. Ryndevich S. K., 4 specimens (CSR); same date, 14.06.2001, 67 specimens (CSR)+114 specimens from different regions of Belarus. Russia.

Boblovo, Klin. u. Mosk. g., 16.06.1906, D. Smirnov, 18 specimens (in Russian) (ZMUM); Russia, Moscow reg., st. Konobeevo, 16.05.1997, leg. Semenov, 1 specimen (ZMUM); Moscow reg., 23 km W Zvenigorod, 11.5.1998, leg. Orlova, Bienkovskiy, 4 specimens (CAB); Boblovo, Klin. u., Mosk. g., 16.04.1906, D. Smirnov, 18 specimens (in Russian) (ZISP); Mosk. obl., Prioksko-terras. zap., 23–29.05.1995, leg. N. Nikitskiy, 1 specimen (ZMUM); Kolomenskiy r-n, okr. d. Konev Bor, 22.05.1997, leg. Nikitskiy & Semenov, 14 specimens (ZMUM); Moskov. obl., Ramenskiy r-n, st. Otdych, navoz, 13.06.1997, leg. Nikitskiy & Semenov, 2 specimens (ZMUM); Moskva, natz. park „Losinyy ostrov”, 27.07.1997, Kozlov, 1 specimen (in Russian) (ZMUM); Moskov reg., st. Otdykh near Zhukovskiy, on the corpse of crow, 1.08.1998, leg. Nikitskiy, 1 specimen (ZMUM); Varepta on Ob’, 30.8.1930, Telishev, 1 specimen (ZMUM). Karelia., Louchskiy r-n, Nilma, ovechiy navoz (sheep dang), 14.06.1990, leg. Bienkovskiy, 1 specimen (CAB); Karelia, bereg r. Svir, 29.06.1993, leg. M. Orlova, A. Bienkovskiy, 1 specimen (in Russian) (CAB); Irgizla, Orenburg. g., 1.2.07.99, Yacobson & Shmidt, 1 specimen (ZISP); N. Caucasus, near Teberda, cow dung, 30.04.1989, leg. Ryndevich S. K., 24 specimens (CRS); The Caucasus, Caucas. Res., m. Bambak, dung of *Bison bonasus*, h=1900 m, 11.08.1993, leg. I. A. Solodovnikov, 1 specimen (CIS); Russia, Krasnodarskiy Kray, Krasnaya Polyana, near Agishkho, 7.06.1984, 1 specimen (ZISP); Cauc. occ., Krasnaya Polyana, Dr. Lgocki VIII, 1 specimen (ZISP); Krasnodarskiy Kray, Severskiy r-n, Ubinskoe lesnichestvo, 4. VI.1986, leg. N. Nikitskiy, 1 specimen (in Russian) (ZMUM). West Siberia, Kemerovo reg., Novokuznetsk distr., S v. Kuzideevo, „Lipovyy Ostrov”, dung, 24.07.1994, leg. A. B. Ryvkin, 2 specimens (CSR); Tomskaya obl., okr. p. Aksenovo, pomet surkov, V. K. Zinchenko, 20.05.1997, 1 specimen (ZISP); Novosibirsk, Akademgorodok, dolina reki Zaryanka (valley of river Zaryanka), koroviy navoz (cow dang), V. V. Dubatolov, 6.06.1983, 4 specimens (ZISP); Okr. Novosibirska, g. Krasnoobsk, 19.07.1994, E. Efremova, O. Bonina, 1 specimen (ZISP); Altay, r. Bukhturma, ustye r. Sarym-Sakty, h=600 m, v navoze (in dang), (leg.) P. Dudko, V. Zinchenko, 1.08.1997, 2 specimens (in Russian) (ZISP); (Siberia, near Irkutsk) Lonka, 23.06.1912, S. Rodionoff, 2 specimens (ZISP); Russian Far East, near Blagoveshchensk, 5.06.1991, 1 specimen (CRS); Khabarovsk Kray, Selichino, 2.08.1990, leg. Lukashuk, 2 specimens (CRS) + 89 specimens from different regions Russia. The Ukraine. The Carpathians: Ivano-Frankovsk reg., near Yaremcha, cow dung, 30.07.1992, leg. Ryndevich S. K., 14 specimens (CSR); The Ukraine, the Crimea, near Gurzuf, horse dung, 5.07.2000, leg. Ryndevich S. K., 2 specimens (CSR), same date, 10.07.2000, 15 specimens (CSR); Gurzufskaya Yayla, near Partizanskoe, cow dung, 12.07.2000, leg. Ryndevich S. K., 1 specimen (CSR); mount. Ay-Iliya-Syrym, horse dung, 12.07.2001, leg. Ryndevich S. K., 12 specimens (CRS).

Georgia. Bobovkati, distr Batum, 20.03.13, coll. F. A. Zaitzev, 1 specimen (ZISP). Azerbaijan. Talysh, Lerik, 14.05.1986, leg. S. V. Saluk, 2 specimens (CRS). Nearctic: USA. (Arkansas) USA: AR. Yell. Co. 4,0 mi S. Blue Mt. Lake Decid. berl., Carlton and Robinson, 19 Dec. 1991, 1 specimen (LUBR); (Louisiana) LA: Baton Rouge Par., Baton Rouge, 15.06.1988, D. A. Rider, MV & Blkt, 1 specimen (LUBR); IN, Monroe Country Bloomington BLT, VI. 20.87, F. N. Young, 1 specimen (LUBR); IND, Monroe Co. Bloomington, 10.07.87, BLT, F. N. Young, 1 specimen (LUBR).

Distribution. Palearctic: Armenia, Austria, Azerbaijan, Belarus, Britain, Croatia, Czech Republic, Denmark, Estonia, Finland, France, Georgia, Germany, Hungary, Italy, Latvia, Lithuania, the Netherlands, Norway, Poland, Portugal, Russia (Kaliningrad reg., European part, the Northern Caucasus, Western and Eastern Siberia, Far East), Serbia, Sweden, Switzerland, the Ukraine (includes the Crimea and the Carpathians). Nearctic: Canada (Alberta, British Columbia, New Brunswick, Newfoundland, Northwest Territories, Nova Scotia, Ontario, Quebec), U. S. A. (Arkansas, California, Connecticut, District of Columbia, Illinois, Indiana, Iowa, Kansas, Kentucky, Louisiana, Maryland, Massachusetts, Michigan, Minnesota, New Hampshire, New Jersey, New Mexico, New York, Ohio, Oregon, Pennsylvania, Rhode Island, South Dakota, Tennessee, Virginia, Washington, West Virginia, Wisconsin).

Environmental preferences. The species occurs in dung of horse, cow, aurochs (*Bison bonasus* Linnaeus), deer (*Cervus elaphus* Linnaeus) and other mammals, rotting plants, rotting fungus (*Phallus impudicus* (Linnaeus) Pers., *Piptoporus betulinus* (Bull.: Fr.) Karst., *Polyporus squamosus* Huds.: Fr. and other) and different decaying organic matters. Specimens of *C. lateralis* were collected in the nest of song trust (*Turdus philomelos* C. L. Brehm) and under the nest of honey buzzard (*Pernis apivorus* (Linnaeus)).

Cercyon (s. str.) *ustus* Sharp, 1874

Cercyon ustus Sharp, 1874: (11, 20, 21, 32, 33, 55, 56, 64, 67) (distribution).

Description. Body oval. Dorsal side weakly convex, shiny, without microsculpture. Head black with fine and dense punctation. Antennae and maxillary palpi brownish-yellow or yellow. Lateral sides of pronotum weakly rounded. Colour of pronotum reddish-brown. The center of pronotum (from 1/3 to 1/2 of pronotum width) occupies a dark brown or black spot from the front edge to the base with vague boundaries (Fig. 1.2). Punctation of pronotum as that of head. Elytra reddish-brown or yellowish-brown with nine shallow punctate striae and one rudimentary punctate row. Intervals of elytra with dense and regular punctation, slightly finer than that on head and pronotum.

tum. Posterior part (1/3 of length of elytra) of elytral suture dark. Ventral side brown. Prosternum, abdomen and legs reddish-yellow or brownish-yellow. Some specimens have brownish-yellow centre of elevated middle portion of mesosternum and apex of abdomen segments. Elevated middle portion of mesosternum narrow (index length: width 3.7–4) (Fig. 1.6). Metasternum without femoral lines. Metasternum pentagon with clear punctation, center of pentagon with more big punctation. Male genitalia shown in Figs 2.1–2.3. Length 2.6–2.9 mm.

Comments. Species similar to *C. lateralis*. It differs from *C. lateralis* in colour of pronotum (has broad pale lateral margin), elevated middle portion of mesosternum and punctation of metasternum pentagon (has more big and rare punctation).

Material examined (all from NHML):

Palaearctic: Japan. Lectotype, male: *Cercyon ustus*, Nagasaki, 22.04.81, Lewis (Card 1, Sharp's writing). Sharp Coll. 1905–313 (Label 1 of NHML). Lectotypus *Cercyon ustus* Sharp, design. Ryndevich S. K., 2002 (Label 2, red). Paralectotypes. Male and female: Paratype (Label 1 — white disc with yellow margin). *Cercyon ustus*, Nagasaki, 23.03.81, Lewis (Label 2, Sharp's writing). Paralectotypus *Cercyon ustus* Sharp, design. Ryndevich S. K., 2002 (Label 3, red). Female: Nagasaki, 13.02.–21.04.81 (Label 1). Japan, G. Lewis. 1910–320 (Label 2). Paralectotypus *Cercyon ustus* Sharp, design. Ryndevich S. K., 2002 (Label 3, red). Male, immature: Japan (Label 1 — yellow oval disc). Sharp Coll. 1905–313 (Label 2 of NHML). *Cercyon ustus* Ind. Typ. D. S. (Label 3, Sharp's writing). Paralectotypus *Cercyon ustus* Sharp, design. Ryndevich S. K., 2002 (Label 4, red).

Notes. Lectotype and paralectotypes of *C. ustus* Sharp are designated there. Female from NHML (information by M. Barclay) are also paralectotype: Japan (Label 1 — yellow oval disc), Sharp Coll. 1905–313 (Label 2 of NHML), *Cercyon ustus* TYPE D. S. (Label 3, Sharp's writing). Lectotype (female) *Cercyon ustus* Sharp, des. Shatrovsky 1987 (Label 4, red). I do not study this specimen.

Distribution. Palaearctic: Japan. Probably this species can be found in the Russian Far East. Oriental: Taiwan.

Environmental preferences. Unknown, probably species inhabit in decaying organic matters as other species of the group.

Cercyon (s. str.) *inquinatus* Wollaston, 1854

Cercyon inquinatum Wollaston, 1854: (65, 66).

Cercyon knischi J. Müller, 1924: (35).

Cercyon gebieni Knish, 1925: (21).

Cercyon faeceus J. Balfour-Browne, 1954.

Cercyon austriacus Vogt, 1974.

Cercyon rhombicus Jia, 1995 (18) syn. nov.

Cercyon inquinatus Wollaston: (5, 7, 11, 20, 21, 35–37, 59, 64, 67) (distribution and environmental preferences).

Description. Body broadly oval. Dorsal side rather strongly convex, shiny, without microsculpture, with fine and dense punctation, with very fine, sparse, decumbent pubescens. Total colour of dorsal side from dark brown to brownish-black. Clypeus, anterior and lateral margins of pronotum (not very narrow) (Fig. 1.3), very narrow posterior of pronotum, subhumeral protuberances, suture and lateral margins of elytra reddish to reddish-brown. Spot near apex of elytra reddish-yellow to brownish-yellow (Fig. 1.5). Anterior part of head and pronotum often somewhat paler, except for darkened middle part of pronotum. Sometimes middle part of pronotum paler. Head with fine moderately dense punctation gradually becoming much finer towards apical margin of clypeus. Pronotum subarcuately narrowed in front. Punctation of pronotum slightly finer than that on head. Scutellum small. Elytra with nine shallow punctate striae and one very shallow punctate lateral striae or clear row. Striae distinctly impressed apically (except apex), slightly impressed on the base of elytra. Strial punctures fine, but becoming much coarser laterally, in 6–9 striae. Intervals of elytra hardly convex near base and slightly convex near apex. Punctation of elytra dense and regular. Ventral side brownish to reddish-brown. Middle part of meso- and metasternum darker, brown to dark brown. Elytral epipleura reddish-yellow to brownish-yellow. Legs reddish-yellow to brownish-yellow, tarsi paler. Elevated middle portion of mesosternum narrow (index length: width 4.0) (Fig. 1.8). Metasternum without femoral lines. Male genitalia shown in Figs 2.4–2.6. Length 2.0–2.7 mm.

Comments. Species similar to *C. lateralis*. It differs from *C. lateralis* in hardly convex intervals of elytra, colour of elytra and elevated middle portion of mesosternum.

Notes. F. Jia (18) described *Cercyon rhombicus* from Guangzhou (Guandong, China). I have not seen this species, but the original description and figure of male genitalia of *C. rhombicus* fully correspond to the characteristics of *C. inquinatus*. I believe that *C. rhombicus* should be placed in the synonyms with *C. inquinatus*.

Material examined:

Nearctic: USA (Arkansas) USA: AR. Montg. Co. N. Edge Albert Pike Rec. Area, Decid. berl., Carlton and Robinson, 24 Aug. 1991, 1 specimen (CRS); USA: AR. Montg. Co. E. of Crystal Rec. Area at FS 177K, Decid. berl., Carlton and Robinson, 4 May, 1992, 1 specimen (LUBR).

Distribution. Palearctic: Austria, Azores, Canary Islands, Croatia, Italy, Japan, Madeira. Probably this species can be found in the Russian Far East. Nearctic: USA (Arkansas, Illinois). Neotropical: Brazil. Afrotropical: Mascarene Islands. Oriental: China (Guangdong), Indonesia (Java). Australian: New Caledonia.

Environmental preferences. The species occurs in decomposing seaweed, debris at the edges of ponds, rotting leaf litter, rotting fruits, cave guano, dung and other decaying organic matters.

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