

Review of species of the genus *Cercyon* Leach, 1817 of Russia and adjacent regions. IV. The subgenera *Paracycreon* Orchymont, 1942 and *Dicyrtocercyon* Ganglbauer, 1904 (Coleoptera: Hydrophilidae)

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Ryndevich, S.K. 2008. Review of species of the genus *Cercyon* Leach, 1817 of Russia and adjacent regions. IV. The subgenera *Paracycreon* Orchymont, 1942 and *Dicyrtocercyon* Ganglbauer, 1904 (Coleoptera: Hydrophilidae). *Zoosystematica Rossica*, **17**(2): 89-97.

Morphological diagnoses, distribution and environmental preferences of species of the subgenera *Paracycreon* Orchymont, 1942 and *Dicyrtocercyon* Ganglbauer, 1904 from Russia and adjacent regions are presented. *Cercyon* (*Paracycreon*) *noctuabundus* Shatrovskiy is recorded from the Oriental Region for the first time.

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Introduction

The genus *Cercyon* Leach comprises 255 species, has the world-wide distribution, and is subdivided into 11 subgenera. This is the fourth contribution in the series of papers on the genus *Cercyon* of Russia and adjacent regions. My previous papers on the *Cercyon* of Russia and the adjacent regions (Ryndevich, 2004a, 2007b, 2007c) concern species of the *Clinocercyon* and *Conocercyon*, species of the *C. dux* group, *C. lateralis* group, *C. olivrus* group and *C. rotundulus* group, all of the subgenus *Cercyon*. The territory under the study includes a significant part of the Central and East Palaearctic within the former Soviet Union and the adjacent countries of Europe and Asia.

The subgenus *Paracycreon* Orchymont, 1942 includes 13 species from the Palaearctic (2 species), Afrotropical (5), Oriental (6), Australian (1) and Pacific (1) regions (Hansen, 1999; Hebauer, 2000, 2001, 2002). To my opinion, *Cercyon* (*Cercyon*) *tropisternus* Wu & Pu, 1995 and *C. (Cercyon)* *linearis* Wu & Pu, 1995 (Hansen, 1999) belong to the subgenus *Paracycreon*, because, according to the original descriptions (Jia et al., 1995), they have pre-episternal elevation sharply carinate longitudinally and structure of male genitalia (apices of parameres are bent outwards) typical of this subgenus. In addition, apices of parameres of *C. tropisternus* bear 3-4 short hairs like in species of *Paracycreon*. Unfortunately, the original descriptions are very short and the type material of these species is not available now.

Two species of *Paracycreon* are known from Russia. Sharp (1873) described *C. laminatus*

from Japan. This species was introduced to the West and Central Palaearctic and Hawaii. Further research resulted in a description of a new species, *C. (P.) noctuabundus* from the Russian Far East (Shatrovskiy, 1992).

The subgenus *Dicyrtocercyon* Ganglbauer, 1904 includes only one species, *C. ustulatus* (Preyssler, 1790), described from Czechia and distributed in the Palaearctic and Nearctic regions.

Material and methods

The paper is based on the material from the Zoological Institute of the Russian Academy of Sciences, St. Petersburg, Russia (ZIN); the Natural History Museum, London, UK (BMNH); Zoological Museum of the Moscow State University, Moscow, Russia (ZMUM); and private collections of I.A. Solodovnikov (CIS), D.S. Lundyshev (CDL), A.O. Bienkowski (CAB), P.N. Sheshurak (CPS), A.G. Koval (CAK), and the author (CSR).

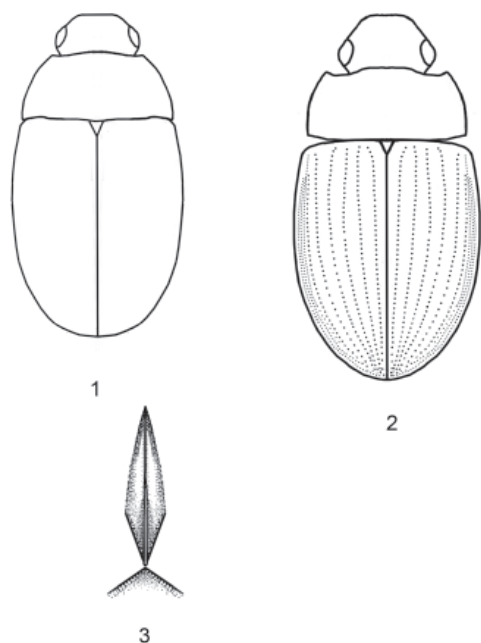
Material was examined using a Leica MZ 12,5 stereomicroscope and MBS-10 stereomicroscope.

The possibility of identification of *Cercyon* species by characters of the habitus, colour, male genitalia, structure of mesoventrite and metaven-trite has been studied. The criteria according to which the species were united into groups were discussed earlier (Ryndevich, 2004a).

Subgenus *Paracycreon* Orchymont, 1942

Type species *Cercyon hova* Regimbart, 1903.

The characteristic features of the subgenus are as follows: body oval to broadly oval, dorsal



Figs 1-3. *Cercyon*. 1, *C. noctuabundus*; 2, 3, *C. laminatus*. 1, 2, habitus; 3, pre-episternal elevation.

convexity not interrupted between pronotum and elytra, pre-episternal elevation sharply carinate longitudinally (Fig. 3), contacting metasternum in a single point, epipleura of elytra flat, horizontal, metasternum not forming ridge and not delimiting small anterolateral portion of metaventrite.

At present, the subgenus *Paracycreon* includes the following species: *Cercyon* (*P.*) *alternatus* Balfour-Browne, 1948; *C. (P.) coprinus* Balfour-Browne, 1958; *C. (P.) decemstriatus* Orchymont, 1937; *C. (P.) hova* Regimbart, 1903; *C. (P.) laminatus* Sharp, 1873; *C. (P.) mocquersyi* Orchymont, 1942; *C. (P.) morosus* Knisch, 1925; *C. (P.) noctuabundus* Shatrovskiy, 1992; *C. (P.) subso-lanus* Balfour-Browne, 1939; *C. (P.) vicinaloides* Orchymont, 1925; *C. (P.) maculosus* Hebauer, 2002; *C. (P.) pilosellus* Hebauer, 2000; *C. (P.) linifer* Hebauer, 2001; *C. (P.) tropisternus* Wu & Pu, 1995; and *C. (P.) linearis* Wu & Pu, 1995.

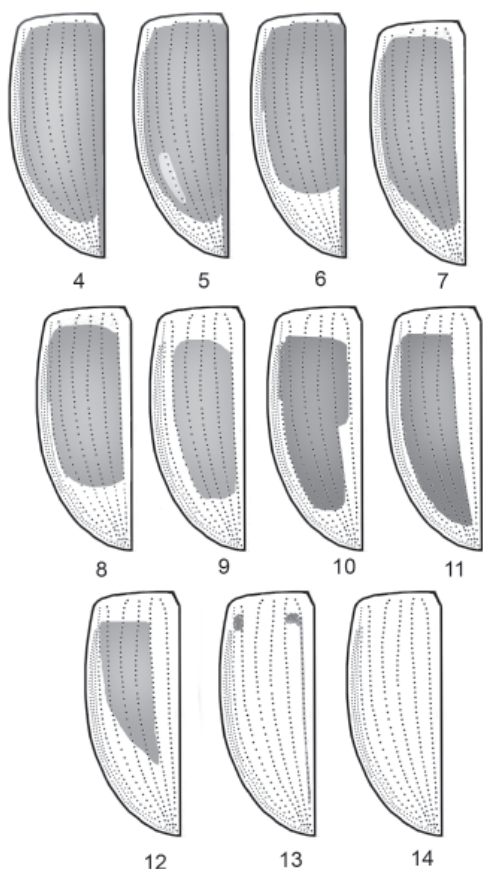
***Cercyon* (*Paracycreon*) *laminatus* Sharp, 1873**

Cercyon laminatus Sharp, 1873: 66.

Cercyon sharpi Harold, 1878: 68.

Cercyon laminatus: Zaitsev, 1908; Winkler, 1926.

Cercyon (*Paracycreon*) *laminatus*: Satô, 1961; Derenne, 1962; Vogt, 1968; Huijbregts, 1982; Bellstedt & Merkl, 1987; Foster, 1987; Lucht, 1987; Krause & Zinke, 1989; Shatrovskiy, 1989; Kubisz & Szwalko, 1991; Hebauer, 1994, 1995, 1997; Hebauer & Ryndevich, 2005; Audisio & al., 1995; Hansen, 1995, 1999; Ribera & al., 1996,



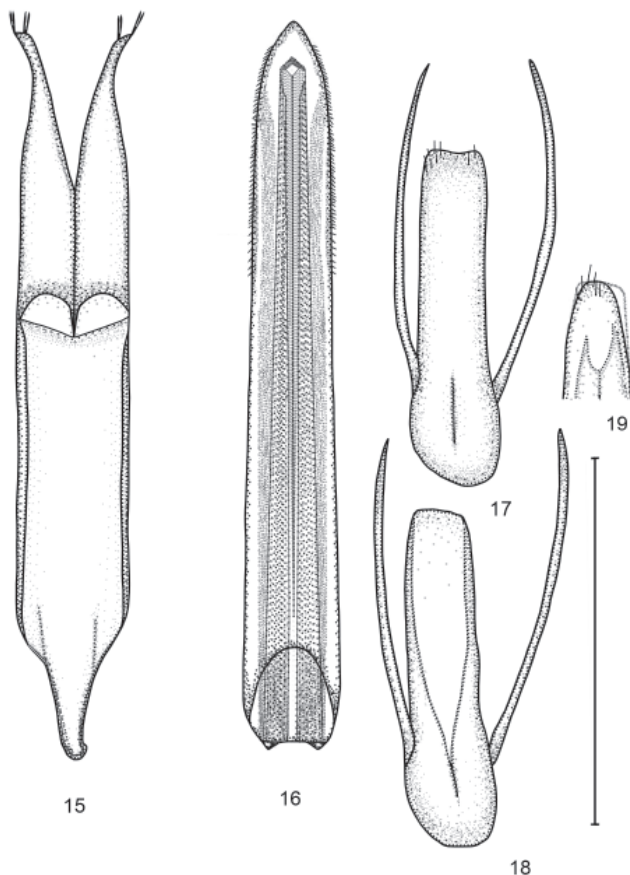
Figs 4-14. *Cercyon laminatus*, colour pattern of elytra.

1997; Marjanyan, 1997; Bilton, 1998; Ryndevich, 1998, 2000, 2004b, 2004c, 2005, 2007a, 2007d; Hansen, 1999, 2004; Ryndevich & Lundyshev, 2005; Ryndevich & Moroz, 2000; Ryndevich & Tsinkevich, 2004.

Material examined. **Moldova.** 1 spec, Kishinev (= Chisinau), 6 August 1989 (CSR). **Belarus.** 1 spec, Vitebsk, 23 May 1997, leg. I. Solodovnikov (CIS); 5 specs, Verkhnedvinskii Distr., NW of Lake Osveya, 20 July 1995, leg. I. Solodovnikov (CIS); 50 specs, Minsk Prov., Pukhovichi Distr., Kopeynoe, UV-light, 27 July 1997, leg. O. Prishchepchik (CSR); Brest Prov.: 14 specs, Pruzhany Distr., water storage reservoir "Papernya", 4 October 2003 and 5 August 2004, nest of mute swan, leg. D.S. Lundyshev (CDL); 8 specs, Baranovichi Distr., near Guta, 15 August 2004, nest of mute swan, leg. D.S. Lundyshev (CDL); 1 spec, Gomel Prov., Lel'chitsy Distr., at light, leg. P.N. Sheshurak (CPS). **Ukraine.** 1 spec, Chernigov Prov., Nezhin Town, near Pedagogical University, 21 August 2000, leg. P.N. Sheshurak (CPS); 1 spec, the Crimea, near Krasnokamenka, horse dung, 5 August 2006, leg. S.K. Ryndevich (CSR). **Russia.** Moscow Prov.: 1 spec, Ramenskoe Distr., near railway station Otdykh, 27 September 1998, leg. N.B. Nikitskiy (ZMUM); 2 specs, Serpukhov Distr., UV-light, 27 August 1997, leg. N.B. Nikitskiy (ZMUM); 2 specs, 23 km W of Zvenigorod, near Lake Glubokoe, at light, 15 June 1998

and 1 August 1998, leg. A.O. Bienkowski (CAB); Altai: 1 spec, Seminskiy Mt. R., at Tsherga, 19-24 August 2003, leg. V.D. Ivanov (CAK); the Far East: Primorskiy Terr.: 1 spec, Luk'yanovka, 1 September 1992 (CSR); 1 spec, Vladivostok, dung, leg. Telishev (ZMUM); 1 spec, Vladivostok, 10 July 1909 (ZIN); Kuril Islands: 1 spec, Kunashir, near Mendeleyevo, at light, 27 June 1985, leg. S.V. Saluk (CSR). **Kazakhstan.** 2 specs, Dzhungarskiy Alatau, Musdybulak River area, 20 August 1994 and 24 August 1994 (CSR). **Japan.** 5 specs, Honshu, Kyoto, July 1980, flood debris, leg. P.M. Hammond (BMNH 1980-492).

Description. Body elongate oval (index length/width 1.7-1.9), widest in middle of elytra (Fig. 2). Dorsal side slightly convex, shiny, without microsculpture. Total dorsal side colour regularly yellowish brown. Head black. Pronotum in some specimens with brown central part and yellowish sides. Antennae and maxillary palpi yellow. Club of antennae brownish. Scutellum concolorous with rest of body. Humeral tubercles yellowish brown or brown. Coloration of elytra varied (Figs 4-14). Elytra in some specimens with yellow edge, brown central part, and dark suture. Ventral side dark brown or black. Metasternal pentagon, pre-episternal elevation, and apex of abdominal segments from yellowish brown to reddish brown. Legs yellow, yellowish brown, or reddish brown. Clypeus linear. Punctuation of head and pronotum clear and dense. Pronotum widest near middle, without transverse series of punctures along posterior margin. Sides of pronotum strongly rounded. Posterior angles of pronotum not rounded. Base of pronotum with border. Scutellum small. Intervals of elytra flat, slightly convex apically, with shallow regular punctuation finer than that on head and pronotum and in striae. Third interval of elytra wider than 2nd, 4th as wide as 2nd. Humeral tubercles very weak. Proventrite roof-shaped raised and finely carinate medially. Epipleura flat, horizontal. Metasternum not forming ridge and not delimiting any small anterolateral portion. Pre-episternal elevation sharply carinate longitudinally, contacting metasternum in a single point (Fig. 3). Metasternum without femoral lines. Metasternal pentagon flat, shiny, with very dense shallow punctuation and two ill-defined small depressions in posterior part. First ventrite of abdomen with median carina, as long as 2nd and 3rd ventrites combined. Male genitalia shown in Figs 15-19. Apices of para-

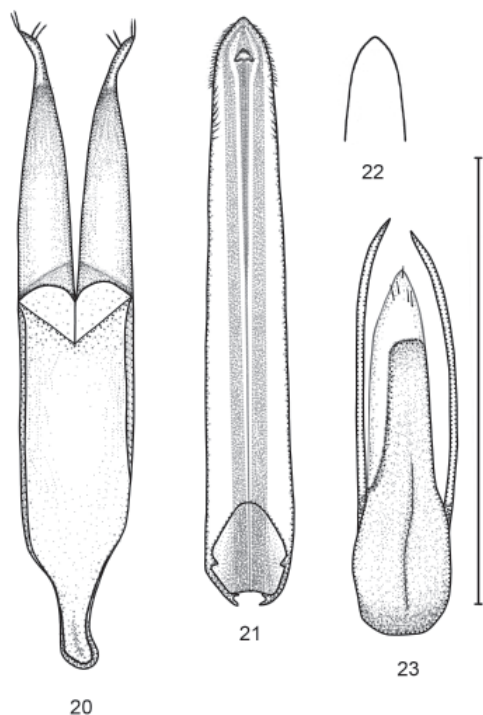


Figs 15-19. *Cercyon laminatus*, male genitalia. **15**, tegmen with parameres (dorsal view); **16**, median lobe (dorsal view); **17**, **18**, genital segment (ventral view); **19**, apex of genital segment (ventral view). Scale: 0.5 mm.

meres bent outwards, each with 2 pairs of hairs (Fig. 15). Median lobe rimmed with close-set short hairs, hairs becoming sparse to middle of median lobe (Fig. 16). Apex of genital segment with sparse hairs (Figs 17-19). Sclerotization of genital segment of some specimens incomplete (Figs 18, 19). Length 3-4 mm.

Distribution. **Palearctic Region:** Armenia, Austria, Belarus, Belgium, Denmark, Estonia, Finland, France, Georgia, Germany, Hungary, Israel, Italy, Japan, Kazakhstan, Lithuania, Moldova, the Netherlands, Poland, Russia (European part including the Northern Caucasus, West Siberia, and the Far East), Spain, Sweden, Switzerland, UK, Ukraine (including the Crimea and the Carpathians). **Oriental Region:** Taiwan. **Pacific Region:** Hawaii.

Environmental preferences. The species occurs in the dung of cow, horse and other mammals. Individuals of *C. laminatus* were collected in the nests of mute swan (*Cygnus olor* Gmelin).



Figs 20-23. *Cercyon noctuabundus*, male genitalia. **20**, tegmen with parameres (dorsal view); **21**, median lobe (dorsal view); **22**, apex of median lobe (dorsal view); **23**, genital segment (ventral view). Scale: 0.5 mm.

Cercyon laminatus uses nests as a source of excrements and decaying plants for food and place for larvae and for pupation. It occurs also in decaying organic matter (e.g., debris near water) and comes frequently to light.

Cercyon (Paracycreon) noctuabundus

Shatrovskiy, 1992

Cercyon (Paracycreon) noctuabundus Shatrovskiy, 1992: 367.

Cercyon (Paracycreon) noctuabundus: Hansen, 1999, 2004; Ryndevich, 2007a.

Holotype. ♂, Primorskii Terr., Khankaiskiy Distr., Novokachalinsk, leg. A.G. Shatrovskiy, 2 September 1986 (ZIN).

Paratypes. 12 specs, same locality and collector (all ZIN); 4 specs, south-western Khabarovsk Terr., Amur River, Bashurovo, 31 June – 2 August 1980, leg. V. Belov, UF-light (ZMUM).

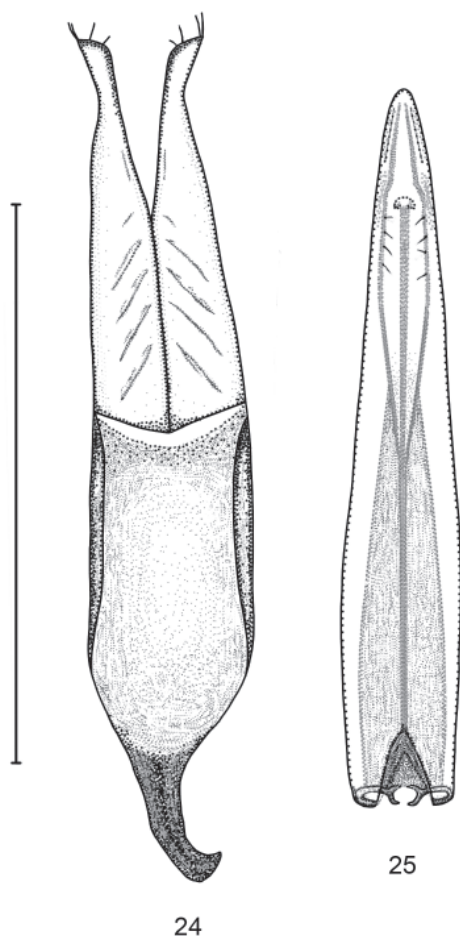
Other material examined. **Russia.** 1 spec, Far East, Ussuriysk Distr., near Kamenushka, at UV-light, 18 August 1992, leg. S.V. Saluk (CSR). **China.** 1 spec, "China: B.M. 1980-491, P.M. Hammond, Guizhou. 20 m. S. Guilin, 22.IX.1980, cow dung" (BMNH).

Description. Body elongate-oval (index length/width 1.7), widest at middle of elytra (Fig. 1). Dorsal side slightly convex, shiny, without mi-

crosculpture. Total dorsal side colour from regularly yellow to brownish yellow. Head black, with yellow spots near eyes. Antennae and maxillary palpi yellow. Apex of antennal club brownish. Scutellum concolorous with rest of dorsal surface, with brown margins. Elytra yellow or brownish yellow, some specimens with brownish central spot. Ventral side brownish yellow or brownish. Proventrite yellow. Legs yellow to brownish yellow. Clypeus linear. Punctuation of head and pronotum clear and dense. Pronotum widest near middle, without transverse series of punctures along posterior margin. Sides of pronotum strongly convex. Posterior angles of pronotum not rounded. Base of pronotum with border. Scutellum small. Intervals of elytra flat, slightly convex apically, with shallow regular punctuation finer than that on head, pronotum, and in striae. Third interval of elytra as wide as 2nd, 4th a bit narrower than 2nd and 3rd. Humeral tubercles very weak. Proventrite roof-shaped raised and finely carinate medially. Epipleura flat, horizontal. Metasternum not forming ridge and not delimiting any small anterolateral portion. Pre-episternal elevation sharply carinate longitudinally, contacting metasternum in a single point, dark anteriorly. Metasternum without femoral lines. Metasternal pentagon flat, shiny, with very dense shallow punctuation and 2 ill-defined small depressions in posterior part. First ventrite of abdomen with median carina, 1.6 times as long as 2nd ventrite. Male genitalia shown in Figs 20-23. Apices of parameres bent outwards, bearing 2 pairs of short hairs (Fig. 20). Median lobe narrowing at apex (Fig. 21), rimmed with thick short hairs in its apical part, hairs shifting from edge to medial surface of median lobe closer to midlength of latter. Median lobe in the China specimen less abruptly narrowing toward apex (Fig. 22). Apex of genital segment with thin hairs (Fig. 23). Sclerotization of genital segment at edge very weak. Length 2.1-2.9 mm.

Comparison. The species is very similar to *C. (P.) subsolanus* Balfour-Browne distributed in the Oriental Region: Bhutan, India, Indonesia (Sumatra, Sunda), Malaysia (peninsular part), Nepal, Philippines, Singapore, Sri Lanka, Taiwan, Thailand, and Vietnam. I have examined type material of *C. (P.) subsolanus* from BMNH: **Holotype:** ♂ Type, 931Q, Singapore, C.J. Saunders, B.M. 1929-369, *Cercyon subsolanus* Balfour-Browne det. **Paratypes:** ♂ Paratype, 931Q, ♀ Allotype, Singapore, 22.IX.-19.XII.1915, Dr. M. Cameron, Brit. Mus., 1932-121.

Cercyon (P.) subsolanus differs in the structure of the metasternal pentagon and the male genitalia, and in larger size (length 2.6-3.2 mm). The elytra lack brownish central spot. The third interval of the elytra is a bit wider than the 2nd one, twice as wide as the 4th interval. *Cercyon (P.) subsolanus*



Figs 24, 25. *Cercyon subsolanus*, male genitalia. **24**, tegmen with parameres (dorsal view); **25**, median lobe (dorsal view). Scale: 0.5 mm.

has a slightly convex metasternal pentagon with some short hairs in the center and in the posterior part. The median lobe is gradually narrowing towards the apex (Fig. 25), bearing several short, very thin sparse hairs anteriorly; hairs at the edge are absent. Each paramere with two pairs of short hairs at the apex (Fig. 24). The two hairs at the apex are very closely located and look like one thick hair. The hairs of the second pair are located rather far from each other.

Distribution. **Palaeartic Region:** Russia (Far East). **Oriental Region:** China (Guizhou Province) (new record).

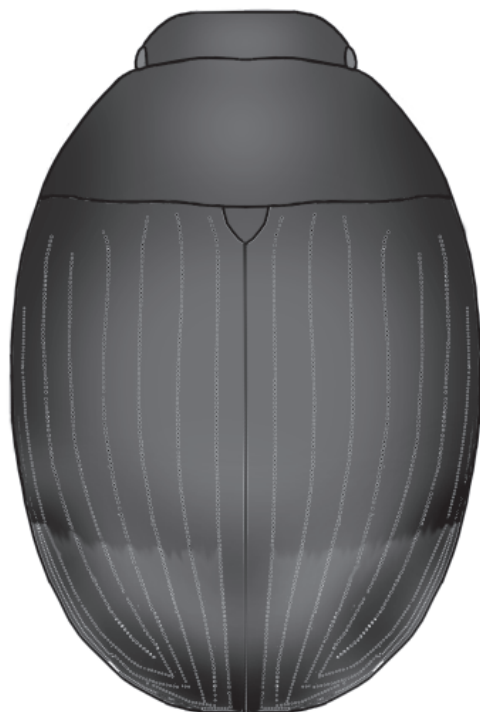
Environmental preferences. The species occurs in the cow dung and frequently comes to light.

Subgenus *Dicyrtocercyon* Ganglbauer, 1904

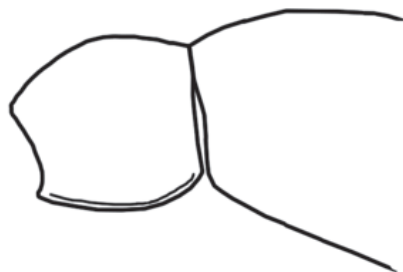
Type species *Sphaeridium ustulatum* Preyssl, 1790.

The characteristic features of this subgenus are as follows: body broadly oval, pronotum and elytra each separately convex in lateral view (Fig. 27), not forming continuous curve; epipleura of elytra narrow, slightly wedge-shaped, slightly bent downwards; pre-episternal elevation forming elongate subparallel-sided tablet and contacting metaventrite in a single point; metasternum forming no ridge and not delimiting small anterolateral portion of metasternum.

At present the subgenus contains only one species.

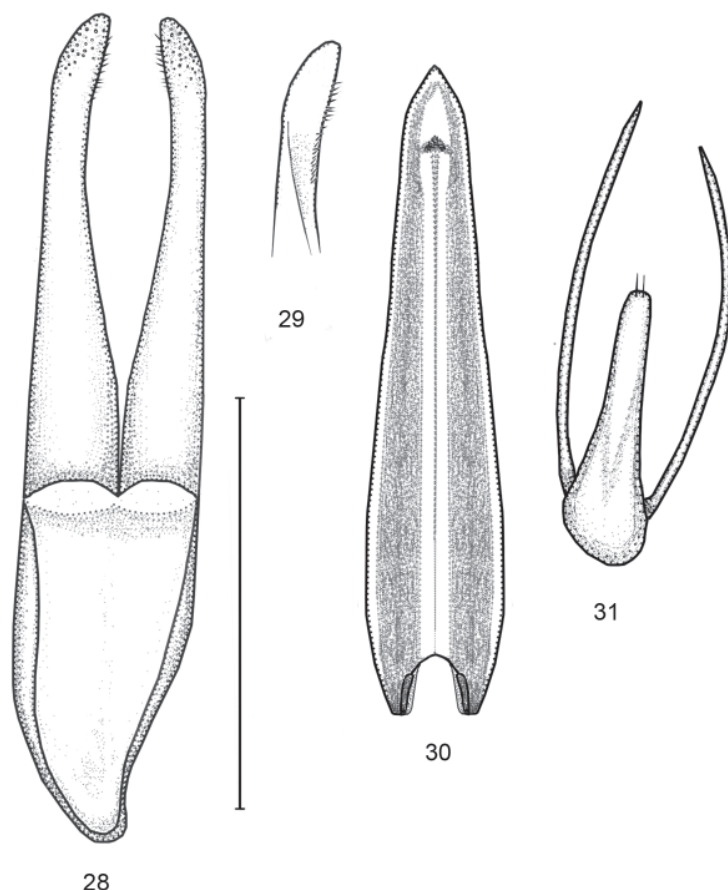


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Figs 26, 27. *Cercyon ustulatus*. **26**, habitus; **27**, pronotum and elytra (lateral view).



Figs 28-31. *Cercyon ustulatus*, male genitalia. **28**, tegmen with parameres (dorsal view); **29**, apex of paramere (ventral view); **30**, median lobe (dorsal view); **31**, genital segment (ventral view). Scale: 0.5 mm.

Cercyon (Dicyrtocercyon) ustulatus
(Preyßler, 1790)

Scarabaeus haemorrhoidalis, Schrank, 1781: 6.

Sphaeridium ustulatum Preyßler, 1790: 34.

Hydrophilus haemorrhoidalis: Fabricius, 1792: 185.

Sphaeridium haemorrhoum Gyllenhal, 1808: 107.

Cercyon xanthorhoeum Stephens, 1829: 143.

Cercyon haemorrhoum var. *xanthorhoeum* Stephens, 1839: 95.

Cercyon ustulatus (Preyßler): Seidlitz, 1891.

Cercyon (Dicyrtocercyon) ustulatus (Preyßler): Ganglbauer, 1904; Zaitsev, 1908; Knisch, 1924; Winkler, 1926; Ladeiro, 1949; Chiesa, 1959; Endrödy-Younga, 1967; Myadzedzeu & Chyckileuskaya, 1968; Vogt, 1968; Gueorguiev, 1971; Smetana, 1978, 1984, 1988; Huijbregts, 1982; Lucht, 1987; Bellstedt & Merkl, 1987; Kodada & Majzlan, 1986 (1987); Krause & Zinke, 1989; Silfverberg, 1992; Ryndevich, 1994, 2001b, 2003, 2004b, 2004c, 2005, 2007a, 2007d; Ryndevich & Shatrovskiy, 1995; Ryndevich & Moroz, 2000; Ryndevich & Tsinekevich, 2004; Ribeiro et al., 1996; Mölle, 1998; Hansen, 1999, 2004; Ryndevich & Lundyshev, 2007.

Material examined.

Belarus. 1 spec, Vitebsk Prov., Miory Distr.: near Zacherev'e, 15 July 1993 (CSR); 1 spec, Lake Obsterno near Zacherev'e, lake drifts, 27 July 1995, leg. S. Ryndevich (CSR); Minsk Distr., near Raubichi, bank of river, 27 May 1985 (CSR); 1 spec, Mogilevskaya gub[erniya, [now Vitebsk Prov.], Luskopol', 21 June 1907, leg. Birulya (ZIN); Brest Prov.: 8 specs, near Malorita, pond, 22 June 1997 (CSR); 1 spec, same data, canal (CSR); Baranovichi Distr.: 6 specs, near Kolpenitza, hut of muskrat No. 3, 22 May 2007, leg. D.S. Lundyshev (CDL); 4 specs, near Domashevichy, hut of muskrat, 17 August 2007, leg. D.S. Lundyshev & S.K. Ryndevich (CSR, CDL). **Russia.** 1 spec, Petropol [= St. Petersburg] (ZIN); 1 spec, Petersburg gub[erniya], Verkhotur'e (ZIN); 1 spec, SPb, Moskovskoe shosse, 10 May 1862, leg. A. Morawits (ZIN); Ligovo near St. Petersburg, 9 May 1862, leg. A. Morawits (ZIN); 1 spec, Serezhino, Yamburgskii uyezd, 24 August 1895, leg. Bianchi (ZIN); 1 spec, Sablino, 6 May 1923, leg. A. Ivanov (ZIN); Tver' Prov.: 1 spec, Bologoye, 9 July 1905 (ZIN); Moscow Prov.: 3 specs, Ramenskiy Distr., railway station Otdykh, mud, 16 July 1999, leg. Nikitskiy & Petrov (ZMUM); 3 specs, Nikolina Gora, 7 August 1946, leg. S. Nikulin (ZMUM); 1 spec, Saltykovo (ZIN); 2 specs, Klin Distr., Boblovo, 5 and 6 May 1906, leg. D. Smirnov (ZIN); Bryansk Experiment Forestry, 10 April 1908, leg. Winogradoff-Nikitin (ZIN); 5 specs, Kaluga (ZIN); 1 spec, Yaroslavl', 1 July 1890, leg. N.R. Kokuev (ZIN); 13 specs, Yaroslavl' (ZIN); 1 spec, Yaroslavl Distr., coll. A. Yakovlev (ZIN); 3 specs, Yaroslavl' uyezd, 4 May 1898, 7-8 p.m., coll. A. Yakovlev (ZIN); Ryazan Prov., Ranenburg uyezd, coll. A. Yakovlev (ZIN); 1 spec, Voronezh (ZIN); 2 specs, Vyatka River, 15-25 May 1900, coll. A. Yakovlev (ZIN); 1 spec, Lazorevka, 29 April-5 May 1901, coll. A. Yakovlev (ZIN); 1 spec, Saratov, leg. Richter (ZIN); 4 specs, Bogorodsk, 2 and 9 May 1891, 7 June 1891 (ZIN); 6 specs, Northern Caucasus, Kuban' Region, E. Koenig, coll. G. Sievers" (ZIN). **Ukraine.** 1 spec, Chernigov Prov., Nezhin, pond, Grafskiy Park, 27 June 1997, leg. P.N. Sheshurak (CPS); 1 spec, Poltava gub[erniya] (ZIN); 1 spec, Kamenets-Podolskiy, 9 May 1911, leg. Yakubovskiy (ZIN); the Crimea: 1 spec, Simferopol', near Salgir River, under stone, 16 April 1996, leg. A. Bienkowski (CAB); 1 spec, Kerch, 6 May 2001, leg. A.N. Kiritschenko (ZIN).

Description. Body broadly oval (index length/width 1.5-1.6), widest in middle of elytra

(Fig. 26). Dorsal side moderately convex, strongly shiny, without microsculpture. Total dorsal side colour regularly black. Head black. Antennae and maxillary palpi brownish yellow. Club of antennae brownish. Scutellum of same colour as rest of body. Elytra black with reddish or brownish yellow apical spot and dark suture. Underside dark brown or black. Some specimens with brown metasternal pentagon, pre-episternal elevation, and apices of abdominal ventrites. Legs reddish brown to black, tarsi reddish or yellowish brown. Clypeus linear. Punctuation of head and pronotum clear and dense. Pronotum widest near middle, without transverse series of punctures along posterior margin. Sides of pronotum moderately rounded. Posterior angles of pronotum not rounded. Base of pronotum without border. Pronotum and elytra each separately convex in lateral view, not forming continuous curve (Fig. 27). Scutellum small, of same colour as rest of body. Elytra with 10 deep punctate striae. Intervals of elytra flat, slightly convex apically, with shallow regular punctuation, similar to, or somewhat finer than that on head and pronotum and in elytral striae. Third interval of elytra as wide as 2nd, 4th narrower than 2nd and 3rd. Humeral tubercles very weak. Proventrite roof-shaped raised and finely carinate medially. Epipleura of elytra narrow, flat, slightly wedge-shaped, slightly bent downwards. Metasternum not forming ridge and not delimiting any anterolateral portion. Pre-episternal elevation narrow (index length/width 4-4.2), almost parallel-sided, contacting metasternum in a single point. Metasternum without femoral lines. Metasternal pentagon flat, shiny, with very dense shallow punctuation and two small depressions in posterior part. First ventrite of abdomen with median carina, twice as long as second ventrite. Male genitalia shown in Figs 28-31. Inner side of parameres at apex with dense, very short, thin hairs (Figs 28, 29). Apex of genital segment with pair of thin hairs (Fig. 31). Length 2.7-3.3 mm.

Distribution. Palaearctic Region: Austria, Belarus, Croatia, Czech Republic, Denmark, Estonia, Finland, France, Germany, Hungary, Ireland, Italy, Latvia, Lithuania, Macedonia, Netherlands, Norway, Poland, Portugal, Romania, Russian Federation (European part, "Siberia"), Slovakia, Spain, Sweden, Switzerland, Turkey, UK, Ukraine (including the Crimea), "Yugoslavia".

Record from Siberia by Zaitsev (1908) needs confirmation, because Siberian specimens of *C. ustulatus* are absent from Zaitsev's (ZIN) and other collections. **Nearctic Region:** Canada (Quebec), USA (New Hampshire, New Jersey, New York).

Environmental preferences. Freshwater detritobiont. Inhabits decaying plant debris near water (river and lake drifts), lives not very deep in the

detritus (beetles also occur in sand on the banks of water bodies). *Cercyon ustulatus* was found hibernating in the burrow of common vole; it also uses muskrats' lodges as a source of decaying plants for food and a place for larvae and for pupation: teneral adults have been collected in muskrats' lodge.

Smetana (1988) recorded this species from beaver lodge and from cow dung (Smetana, 1978).

Acknowledgements

I am very grateful to G.S. Medvedev (Zoological Institute, Russian Academy of Sciences, St. Petersburg, Russia), C. Taylor (The Natural History Museum, London, UK), N.B. Nikitskiy (Zoological Museum of Moscow State University, Moscow, Russia), D.S. Lundyshev (Baranovichi State University, Baranovichi, Belarus), I.A. Solodovnikov (Vitebsk State University, Vitebsk, Belarus), P.N. Sheshurak (Nezhin State University, Nezhin, Ukraine), A.O. Bienkowski (Moscow, Russia), A.G. Koval (St. Petersburg, Russia) for loan of the material, A.V. Zemoglyadchuk (Institute of Zoology of National Academy of Sciences, Minsk, Belarus) for his help in preparation of the genitalia figures, and E.G. Karapetova (Baranovichi State University, Baranovichi, Belarus) for her help in translation of the manuscript.

References

- Allen, A.A. 1969. *Cercyon laminatus* Sharp (Col. Hydrophilidae) new to Britain; with corrections to our list of species, and further notes. *Entomological Records and Journal of Variation*, **81**: 211-216.
- Audisio, P., De Biase, A., Ferro, G., Mascagni, A., Penati, F., Pirisinu, Q., Vienna, P. 1995. Coleoptera: Myxophaga, Polyphaga 1 (Hydrophiloidea, Histeroidea). In: Muinelli A., Ruffo S., La Posta S. (Eds). *Checklist delle species della fauna italiana*, **46**: 1-19.
- Bellstedt, R. & Merkl, O. 1987. Hydraenidae, Hydrochidae, Spercheidae, Helophoridae, Hydrophilidae and Georissidae of the Kiskunsag National Park (Coleoptera). *Natural History of the National Parks of Hungary*, **5**: 169-174.
- Bilton, J.H. 1998. *Cercyon alpinus* Vogt (Hydrophilidae) in England. *Latissimus*, **10**: 31.
- Chiesa, A. 1959. *Hydrophilidae Europae*. A. Forni, Bologna. 199 p.
- Derenne, E. 1962. *Cercyon laminatus* Sharp en Belgique (Communication). *Bulletin et Annales Société Entomologique de Belgique*, **98**: 440-441.
- Endrödy-Younga, S. 1967. *Csiboralkatuak – Palpicornia. Fauna Hungariae*, **87**(6), VI. Kot., 10. füz. Coleoptera I. 97 p. Akadémiai Kiadó, Budapest.
- Fabricius, J.C. 1792. *Entomologia systematica emendata et aucta, secundum classis, ordines, genera, species adjectis synonymis, locis, observationibus*. Tomus I. Pars 1. C.G. Proft, Hafniae. XX + 330 pp.
- Foster, G.N. 1987. Atlas of British water beetles. Preliminary Edition. Part 5. *Balfour-Browne Club Newsletter*, **40**: 1-23.
- Ganglbauer, L. 1904. *Die Käfer von Mitteleuropa*, **4**(1). Karl Gerold's Sohn, Wien. 286 p.
- Guéorguiev, V.B. 1971. *Catalogus Faunae Jugoslaviae. Vol. 3*(6). *Coleoptera Hydrocanthares et Palpicornia*. Academia scientiarum et artium slovenica, Ljubljana. 45 p.

- Gyllenhal, L.** 1808. *Insecta Suecica descripta. Classis I. Coleoptera sive Eleutherata*. Tomi I. F.J. Leverentz, Scaris. VIII + [4] + 572 pp.
- Hansen, M.** 1995. A review of the Hawaiian Hydrophilidae (Coleoptera). *Pacific Science*, **49**: 266-288.
- Hansen, M.** 1999. Hydrophiloidea (s. str.) (Coleoptera). *World catalogue of insects*, **2**: 1-416. Apollo Books, Stenstrup.
- Hansen, M.** 2004. Family Hydrophilidae. In: Löbl, I. & Smetana, A. (Eds). *Catalogue of Palaearctic Coleoptera. Vol. 2. Hydrophiloidea – Histeroidea – Staphylinoidea*: 44-68. Apollo Books, Stenstrup.
- Harold, E. von.** 1878. Beiträge zur Käferfauna von Japan. (Viertes Stuck.) Japanische Käfer des Berliner Königl. Museums. *Deutsche Entomologische Zeitschrift*, **22**: 65-88.
- Hebauer, F.** 1994. The Hydrophiloidea of Israel and the Sinai (Coleoptera, Hydrophiloidea). *Zoology of the Middle East*, **10**: 73-137.
- Hebauer, F.** 1995. Bekannte und neue Hydrophiloidea aus Ostsibirien (Col.). *Entomologische Nachrichten und Berichte*, **39**: 29-36.
- Hebauer, F.** 1997. *Cercyon* (s.str.) *renneri* sp.n. – eine deutsche Art? (Coleoptera: Hydrophilidae). *Acta coleopterologica*, **13**(2): 73-74.
- Hebauer, F.** 2000. Results of the Lund University Ceylon Expedition 1961, Hydrophilidae with an updated Sri Lanka check list (Coleoptera: Hydrophilidae). *Acta coleopterologica*, **16**(2): 3-13.
- Hebauer, F.** 2001. Beitrag zur Kenntnis der Hydrophilidae von Neuguinea. Ergebnisse der zoologischen Forschungsreisen von M. Balke und L. Hendrich nach West Neuguinea (Irian Jaya) in den Jahren 1990-1998 (Coleoptera: Hydrophilidae). *Acta coleopterologica*, **17**(1): 3-72.
- Hebauer, F.** 2002a. Hydrophilidae of Northern India and Southern Himalaya (Coleoptera: Hydrophilidae). *Acta coleopterologica*, **18**(1): 3-72.
- Hebauer, F. & Ryndevich, S.K.** 2005. New data on the distribution of Old World Hydrophilidae (Coleoptera). *Acta coleopterologica*, **21**(1): 43-51.
- Huijbregts, J.** 1982. De nederlandse soorten van het genus *Cercyon* Leach (Coleoptera: Hydrophilidae). *Zoologische bijdragen*, **28**: 127-173.
- Jia, F., Wu, W. & Pu, Z.** 1995. Studies on *Cercyon* of China (Coleoptera: Hydrophilidae). *Journal of Sun Yat-sen University*, **2**: 225-230. (In Chinese).
- Kodada, J. & Majzlan, O.** 1986 (1987). Spoločnosť vodných chrobákov (Coleoptera, Aquicola) štátnej prírodnej rezervácie Abrod. *Ochrana prírody*, **8**: 209-219.
- Krause, R. & Zinke, J.** 1989. Zur Kenntnis der Hydrophilidae (s. str.) der Sachsischen Schweiz (Insecta, Coleoptera). *Faunistische Abhandlungen des Staatlichen Museum für Tierkunde Dresden*, **17**: 37-46.
- Knisch, A.** 1924. Hydrophilidae. In: Junk, W. & Schenkling, S. (Eds). *Coleopterorum Catalogus*, XIV, pars 79, Hydrophilidae: 1-306. W. Junk, Berlin.
- Kubisz, D. & Szwalko, P.** 1991. Nowe dla Podlasia i Puszczy Białowiejskiej gatunki chrząszczy (Coleoptera). *Wiadomości entomologiczne*, **10**: 5-14.
- Ladeiro, M.** 1949. Os Hidrocantários e os Hidrofilídeos Portugueses do Museu Zoológico da Universidade de Coimbra. *Memórias e Estudos do Museu zoológico da Universidade de Coimbra*, **189**: 1-24.
- Lucht, W.** 1987. *Die Käfer Mitteleuropas*. Katalog. Goecke & Evers, Krefeld. 342 p.
- Marjanyan, M.A.** 1997. Revision of the hydrophilid subfamily Sphaeridiinae (Coleoptera, Hydrophilidae) of the fauna of Armenia. *Entomologicheskoe Obozrenie*, **76**(1): 153-171. (In Russian)
- Möller, J.** 1998. The “surfacing trap” – a novel method for trapping live water beetles and other aquatic animals. *Latissimus*, **10**: 5-9.
- Preyßler, J.D.** 1790. Verzeichniss böhmischer Insecten. Erstes Hundert. Schönfeld-Meissnerische Buchhandlung, Prag. 108 pp.
- Ribera, L., Fresneda, J., Aguilera, P. & Hernando, C.** 1996. Insecta: Coleoptera 8 (Familias 11-26): Coleopteros acuáticos. FAMILIAS: Gyrinidae, Halipidae, Noteridae, Hygrobiidae, Dytiscidae, Hydraenidae, Helophoridae, Georissidae, Hydrochidae, Hydrophilidae, Elmidae, Dryopidae, Heteroceridae, Psephenidae, Scirtidae, Chrysomelidae Donacinae. *Catalogus de la Entomofauna Aragonesa*, **10**: 3-22.
- Ribera, L., Hernando, C. & Millan, A.** 1997. Especies poco conocidas o nuevas para la fauna ibérica de coleópteros acuáticos (Coleoptera: Dytiscidae, Hydrophilidae, Hydraenidae, Dryopidae). *Zapateri, Revista Aragonesa de Entomología*, **7**: 83-90.
- Ryndevich, S.K.** 1994 Ecological structure of hydrophilids (Coleoptera, Hydrophilidae) of Belarussian fauna. *Vestnik Belorusskogo gosudarstvennogo universiteta, Ser. 2*, **2**: 28-30. (In Russian).
- Ryndevich, S.K.** 1998. Water beetles of Belarus (Coleoptera: Halipidae, Noteridae, Dytiscidae, Gyrinidae, Hydraenidae, Hydrophilidae, Dryopidae). Autoref. Diss. Kand. Biol. Nauk., Minsk, 18 p. (In Russian).
- Ryndevich, S.K.** 2000. Taxonomic and ecological structure of the fauna of the beetle families Halipidae, Noteridae, Dytiscidae, Gyrinidae, Helophoridae, Hydrochidae, Spercheidae, Hydrophilidae, Hydraenidae, Dryopidae (Coleoptera) of the “Pripyatskiy” National Park. In: *Problemy ekologii i ekologicheskogo obrazovaniya v postchernobyl'skiy period. Mater. Mezhdunarodn. nauchno-prakt. konf. [Problems of ecology and ecological education in Postchernobyl' period. Proceedings of Internat. Science-pract. conf.]*: 274-278. Belyi veter. Mozyr'. (In Russian)
- Ryndevich, S.K.** 2001a. On identification of species of the *Cercyon dux* group (Coleoptera: Hydrophilidae). *Zoosystematica Rossica*, **10**(1): 79-83.
- Ryndevich, S.K.** 2001b. Water beetles of lakes of Belarus (Coleoptera: Halipidae, Noteridae, Dytiscidae, Gyrinidae, Helophoridae, Hydrochidae, Hydrophilidae, Hydraenidae). *Vestnik Belorusskogo Gosudarstvennogo Universiteta, Ser. 2*, **1**: 55-59. (In Russian).
- Ryndevich, S.K.** 2003. Some records of Dytiscidae, Helophoridae, Hydrochidae, Hydrophilidae and Hydraenidae in Russia and other regions. *Latissimus*, **16**: 17-20.
- Ryndevich, S.K.** 2004a. Review of species of genus *Cercyon* Leach, 1817 of Russia and adjacent regions. I. Subgenus *Cercyon* (s. str.) Leach, 1817. *Cercyon lateralis*-group (Coleoptera: Hydrophilidae). *Annales Universitatis Mariae Curie-Skłodowska. Sectio C*, **59**: 29-41.
- Ryndevich, S.K.** 2004b. Ecological structure of water beetles of Belarus (Halipidae, Noteridae, Dytiscidae, Gyrinidae, Helophoridae, Georissidae Hydrochidae, Spercheidae, Hydrophilidae, Hydraenidae, Limnichiidae, Dryopidae, Elmidae). In: *Fauna, voprosy ekologii, morfologii i evolyutsii amfibioticheskikh i vodnykh nasekomykh: mater. II Vserossiyskogo simpoziuma po amfibioticheskim i vodnym nasekomym Rossii (15-17 Sentyabrya 2004, Voronezh)* [Fauna, problems of ecology, morphology and evolution of amphibiotic and aquatic insects: proceedings of the Second All-Russia Symposium on Amphibiotic and Aquatic Insects of Russia (15-17 September 2004, Voronezh)]: 150-155. VGU, Voronezh. (In Russian).

- Ryndevich, S.K.** 2004c. *Fauna i ekologiya vodnykh zhestkokrylykh Belarusi. Monografiya v 2 chastyakh* [Fauna and ecology of water beetles of Belarus. Monograph in 2 parts]. I. Tekhnoprint, Minsk. 272 p. (In Russian).
- Ryndevich, S.K.** 2005. A checklist of Haliplidae, Noteridae, Dytiscidae, Gyrinidae, Hydraenidae, Helophoridae, Georissidae, Hydrochidae, Spercheidae, Hydrophilidae, Elmidae, Dryopidae & Limmichidae (Coleoptera) of Belarusian fauna. In: Konstantinov, A., Tishechkin, A., & Penev, L. (Eds.). *Contributions to Systematics and Biology of Beetles. Papers Celebrating the 80th Birthday of Igor Konstantinovich Lopatin*: 315-326. Pensoft Publishers, Sofia-Moscow.
- Ryndevich, S.K.** 2007a. Ecological classification on the basis of ecological preferences for the genus *Cercyon* Leach, 1817 (Coleoptera: Hydrophilidae) of the Palaearctic Region. In: *Problemy vodnoy entomologii Rossii i soprodel'nykh stran: mater. III Vserossiyskogo simpoziuma po amfibioteskim i vodnym nasekomyim Rossii* [Problems of aquatic entomology of Russia and adjacent lands: Materials of the Third All-Russian Symposium on Amphibiotic and Aquatic Insects]: 281-284. VGU, Voronezh. (In Russian).
- Ryndevich, S.K.** 2007b. Review of species of the genus *Cercyon* Leach, 1817 of Russia and adjacent regions. II. Subgenus *Cercyon* Leach, 1817. *Cercyon olivrus* and *C. rotundulus* groups (Coleoptera: Hydrophilidae). *Zoosystematica Rossica*, **15**(2): 311-314.
- Ryndevich, S.K.** 2007c. Review of species of the genus *Cercyon* Leach, 1817 of Russia and adjacent regions. III. Subgenera *Clinocercyon* Orchymont, 1942 and *Conocercyon* Hebauer, 2003 (Coleoptera: Hydrophilidae). *Zoosystematica Rossica*, **15**(2): 315-320.
- Ryndevich, S.K.** 2007d. Beetles of superfamily Hydrophiloidea (Coleoptera: Helophoridae, Hydrochidae, Spercheidae, Hydrophilidae) of the Crimean Peninsula. *Russian Entomological Journal*, **16**(3): 273-279.
- Ryndevich, S.K. & Lundyshev, D.S.** 2005. Beetles of birds nests (Coleoptera: Noteridae, Dytiscidae, Helophoridae, Hydrophilidae & Dryopidae). *Latissimus*, **20**: 17-19.
- Ryndevich, S.K. & Lundyshev, D.S.** 2007. Beetles (Coleoptera: Noteridae, Dytiscidae & Hydrophilidae) in muskrat and beaver lodges. *Latissimus*, **23**: 28-30.
- Ryndevich, S.K. & Moroz, M.D.** 2000. Water beetles of Belarus (Coleoptera: Haliplidae, Noteridae, Dytiscidae, Gyrinidae, Hydraenidae, Hydrophilidae, Elmidae, Dryopidae). *Latissimus*, **12**: 26-31.
- Ryndevich, S.K. & Shatrovskiy, A.G.** 1995. Hydrophilid-beetles (Coleoptera, Hydrophilidae) of the fauna of Belarus. *Fauna i sistematika. Trudy zoologicheskogo muzeya Belorusskogo Universiteta*, **1**: 77-90. (In Russian).
- Ryndevich, S.K. & Tsinkevich, V.A.** 2004. Sbor i opredelenie vodnykh i okolovodnykh zhestkokrylykh [Collecting and identification of water and near-water beetles]. BGU, Minsk. 125 p. (In Russian).
- Satô, M.** 1961. Aquatic Coleoptera of Niigata Prefecture, Japan collected by Dr. K. Baba. *Niigata-ken no Konchu*, **6**: 6-15.
- Seidlitz, G.** 1891. *Fauna Transsylvanica. Die Kaefer (Coleoptera) Siebenbürgens*. Hartung'sche Verlagsdruckerei, Königsberg. 10 + Ivi + (Gattungen:) 192 + (Arten:) 914 p., 1 pl.
- Sharp, D.** 1873. The water beetles of Japan. *The transactions of the entomological Society of London*, **1873**: 45-67.
- Shatrovskiy, A.G.** 1989. Family Hydrophilidae. In: P.A. Lehr (Ed.). *Opredelitel' nasekomykh Dal'nego Vostoka SSSR* [Keys to the Insects of the Far East of the USSR], **3**, 1: 264-293. Nauka, Leningrad. (In Russian).
- Shatrovskiy, A.G.** 1992. New and little known Hydrophiloidea (Coleoptera) from southern Primorye Territory and adjacent regions. *Entomologicheskoe obozrenie*, **71**(2): 359-371. (In Russian).
- Silfverberg, H.** 1992. *Enumeratio Coleopterorum Fennoscandiae, Daniae et Baltiae*. Helsingin Hyönteisvaihtoyhdistys, Helsinki. 94 p.
- Smetana, A.** 1978. Revision of the subfamily Sphaeridiinae of America north of Mexico (Coleoptera: Hydrophilidae). *Memoirs of the Entomological Society of Canada*, **105**: 1-292.
- Smetana, A.** 1984. Revision of the subfamily Sphaeridiinae of America north of Mexico (Coleoptera: Hydrophilidae). Supplementum 2. *Canadian Entomologist*, **116**: 555-566.
- Smetana, A.** 1988. Review of the family Hydrophilidae of Canada and Alaska (Coleoptera). *Memoirs of the Entomological Society of Canada*, **142**: 1-316.
- Stephens, J.F.** 1829. Pp. 113-200, pls. 13-15. In: Illustrations of British Entomology; or, a Synopsis of indigenous insects; containing their generic and specific distinctions; with an account of their metamorphoses, times of appearance, localities, food, and economy, as far as practicable. Mandibulata. Vol. II. Baldwin & Cradock, London. 200 pp., pls. 10-15.
- Stephens, J.F.** 1839. A manual of British Coleoptera, or beetles; containing a brief description of all the species of beetles hitherto ascertained to inhabit Great Britain and Ireland; together with notice of their chief localities, times and places of appearance, etc. Longman, Orme, Brown, Green, & Longmans, London. XXII + 443 pp.
- Vogt, H.** 1968. *Cercyon-Studien mit Beschreibung zweier neuer deutscher Arten*. *Entomologische Blätter*, **64**: 172-191.
- Winkler, A.** 1926. *Catalogus Coleopterorum regionis palaearcticae*. Wien.
- Zaitsev, F.A.** 1908. Catalogue des Coléoptères aquatiques des familles des Dryopidae, Georissidae, Cyathoceridae, Heteroceridae et Hydrophilidae. *Horae Societatis entomologicae Rossicae*, **38**: 283-420.

Received 16 June 2008, accepted 15 December 2008