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A new *Hydroporus* species from Kamchatka previously standing as *H. brevis* F. SAHLBERG (Coleoptera: Dytiscidae)

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Abstract

Hydroporus bergmani sp.n. is described from Kamchatka. This species was previously misidentified as *H. brevis* F. SAHLBERG. The known records suggest that *H. brevis* ranges from Scandinavia to the Yenisey River, whereas *H. bergmani* is restricted to Kamchatka and Magadan. The following seven species of *Hydroporus* are known with certainty from Kamchatka: *H. bergmani*, *H. fuscipennis* SCHAUM, *H. morio* AUBÉ, *H. nigellus* MANNERHEIM, *H. umbrosus* (GYLLENHAL), *H. uenoi* NAKANE, and *H. laticollis* ZIMMERMANN.

Key words: Dytiscidae, taxonomy, *Hydroporus fuscipennis*-group, Kamchatka, new species

The Holarctic genus *Hydroporus* CLAIRVILLE includes some 200 species of relatively small dytiscids. Whereas the Nearctic and European faunas are relatively well-known, the Asiatic species demand further study. Many earlier authors somewhat uncritically assigned Asiatic material to species originally described from Europe (see NILSSON 1990 and NILSSON & NAKANE 1993 for examples). Consequently, the old literature records of well-known European species from the Far East need critical re-examination.

Hydroporus brevis F. SAHLBERG was first described from Finland, and later found to be widespread in North Europe (HORION 1941). It was first reported from Siberia by SAHLBERG (1880), and later by ZIMMERMANN (1931) also from Kamchatka. Recently, I had the opportunity to re-examine the series from Kamchatka collected by Y. Wuorentaus in 1917 and identified as *H. brevis* by A. Zimmermann. My conclusion is that this series belongs to another species that is here described as new.

Hydroporus brevis and the new species both belong to the *H. fuscipennis*-group, defined by the following characters: pronotum with lateral bead broad; elytron with lateral margin weakly ascending to humeral angle; metacoxal processes with posterior margin conjointly truncate; elytron with reticulation reduced, at least basally. The combination of small size (total body length 2.2 - 2.7 mm) and entirely microreticulate pronotum in combination with smooth elytra separates this species-pair from all other known *Hydroporus*.

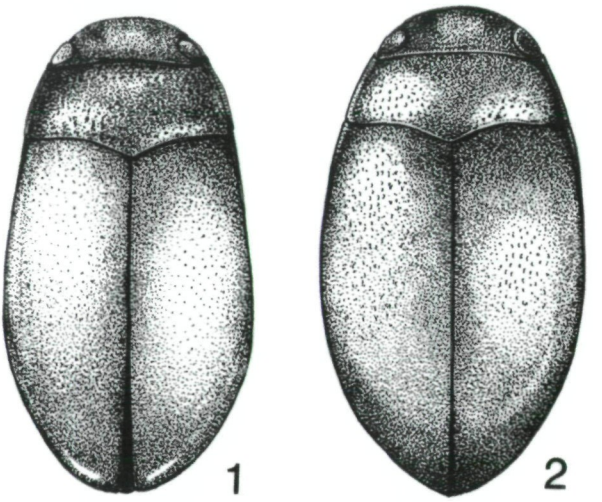
Abbreviations: (CNU) coll. Nilsson, Umeå; (NRS) Naturhistoriska Riksmuseet, Stockholm; (ZMH) Zoological Museum, Helsinki University; (ZMOU) Zoological Museum, Oulu University; (MW) maximum width of body; (TL-h) total length of body without head.

Hydroporus bergmani sp.n.

Hydroporus brevis F. SAHLBERG, 1834: ZIMMERMANN 1931: 142 (in part, misident.); ZAITZEV 1953: 168 (in part, misident.); LAFER 1989: 240 (in part, misident.).

TYPE LOCALITY: Bolsheretsk, South Kamchatka; in area of extensive marsh on the western coastal plain, 52°50'N, 156°35'E (HULTÉN 1923).

TYPE MATERIAL: **Holotype** ♂ in ZMH labelled: "Kamtschatka: Bolscherjetsk. 29.VI.1917 Y. Wuorentaus" and my holotype label. - **Paratypes**, 11 specimens from same locality, 29.VI (1), 1.VII (1), 2.VII (8), and 21.VII.1917 (1); 7 in ZMH, 2 in CNU, and 2 in ZMOU.



Figs 1 - 2: Dorsal habitus, appendages omitted. 1) *Hydroporus bergmani* sp.n., 2) *H. brevis*. Scale bar 1.0 mm. Drawn by G. Marklund.

ETYMOLOGY: The species epithet is a noun in the genitive case derived from the name of the late Dr. Sten Bergman, famous Swedish explorer and leader of the Swedish Kamchatka Expedition 1920 - 1922.

Diagnosis. A very small species with black microreticulate pronotum and piceous smooth elytra. It differs from *H. brevis* chiefly in the broader pro- and mesotarsi of both sexes and in the body outline which attains its maximum width distinctly behind the middle.

Shape and size (mean ± SD). Total length without head 2.34 ± 0.08 mm; maximum width 1.39 ± 0.04 mm; ratio between total length without head and maximum width 1.690 ± 0.022. Body suboval with maximum width distinctly behind middle; outline with evident constriction at level of pronotal base (Fig. 1). Head not very broad.

Colour. Head piceous except rufous anterior margin and fascia on frons. Short antenna basally testaceous, antennomeres 4 - 11 at least distally brown. Pronotum black with lateral bead rufous. Elytron piceous to black, often with a reddish tint. Venter black. Legs rufous.

Sculpture and setation. Head microreticulate with sparse punctation. Pronotum finely punctate with microreticulation evident; lateral margin weakly curved, frequently subsinuate before anterior angle. Elytron shiny with relatively dense and coarse punctation; frequently with weak transverse striae between punctures. Prosternal process densely setose. Ventral surface shiny except for reticulate abdominal sterna 5 - 6.

Structural features. Prosternal process narrowly convex. Pro- and mesotarsomeres 1-3 dilated in both sexes (Figs 3 - 4).

Male. Protarsomere 1 ventrally with 4 adhesive discs; claws not modified. Penis and paramere as in Figs 7 - 9. **Female**. Gonocoxosternum as in Fig. 13.

Discussion

The water beetle fauna of Kamchatka is poorly known. ZIMMERMANN (1922) described *Hydroporus laticollis* (*H. sibiricus*-group) from Wuorentaus' material, a species now known also from Primorye and Sakhalin (NILSSON & KHOLIN 1994). Later, ZIMMERMANN (1925) reported also *H. fuscipennis* SCHAUM and *H. nigellus* MANNERHEIM (as *H. tartaricus* LECONTE) based on

material of the Swedish Kamchatka Expedition collected by R. Malaise. In the ZMH I have seen the following specimens collected by Wuorentaus at Bolsheretsk in 1917: *H. morio* AUBÉ (4), *H. umbrosus* (GYLLENHAL) (5), and *H. uenoi* NAKANE (3 specimens).

ZAITZEV (1953) listed the following *Hydroporus* species from Kamchatka: *H. memnonius* NICOLAI and *H. semenowi* JAKOVLEV (as *H. eugeniae* ZAITZEV). So far, I have not been able to re-examine his material of *H. memnonius*, and most probably this record is based on a misidentification of this West Palearctic species. His record of *H. semenowi* was probably based on a misidentification of *H. uenoi*.

Until more specimens become available, only the following seven species of *Hydroporus* are known with certainty from Kamchatka: *H. bergmani, H. fuscipennis, H. morio, H. nigellus, H. umbrosus, H. uenoi*, and *H. laticollis*.

The species pair *H. bergmani* and *H. brevis* are poorly differentiated. Whereas the width of the protarsomeres 1 - 3 does not differ between the two sexes, it is markedly larger in *H. bergmani* than in *H. brevis* (Figs 3 - 6). The body shape separates the two species as *H. bergmani* has an evident constriction at the level of the base of the pronotum, absent in *H. brevis*, and has the maximum body width more posteriorly than in *H. brevis* (Figs 1 - 2). The lateral margin of the pronotum is somewhat more strongly curved in *H. bergmani* than in *H. brevis*. The punctation of the body is weaker in *H. bergmani* than in *H. brevis*, and this difference is most evident on the pronotum, the elytra and the metacoxal plate. In the male, the penis appears longer and the paramere narrower in *H. bergmani* than in *H. brevis* (Figs 7 - 12), although the significance of these differences remains unknown. Slight differences can also be seen in the shape of the female gonocoxosternum (Figs 13 - 14). The body length, width, and length to width ratio are not significantly different in the two species (t-test) (*H. brevis*, Sweden, Västerbotten prov., N = 10; TL-h 2.29 $\pm$ 0.14 mm; MW 1.36 $\pm$ 0.09 mm; TL-h/MW 1.681 $\pm$ 0.035).

The description of *H. bergmani* raises the question of the distributional limits of the two species. Lafer (1989) recorded *H. brevis* also from Magadan, and without the opportunity to examine this material I guess that it belongs to *H. bergmani*. The next closest records of *H. brevis* are those from the Yenisey Valley given by SAHLBERG (1880). From this material I have been able to examine only one specimen from "Tschnornaja ostrov" deposited in the NRS, and this specimen is a typical representative of the true *H. brevis*.

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Zusammenfassung

Hydroporus bergmani sp.n. wird aus Kamchatka beschrieben. Diese Art wurde ursprünglich als *H. brevis* F. SAHLBERG fehlinterpretiert. Die bisherigen Nachweise lassen vermuten, daß *H. brevis* von Skandinavien bis zum Yenisey verbreitet ist, während das Vorkommen von *H. bergmani* sp.n. auf Kamchatka und Magadan beschränkt zu sein scheint. Die folgenden 7 *Hydroporus*-Arten sind bisher mit Sicherheit von Kamchatka nachgewiesen: *H. bergmani*, *H. fuscipennis* SCHAUM, *H. morio* AUBE, *H. nigellus* MANNERHEIM, *H. umbrosus* (GYLLENHAL), *H. uenoi* NAKANE, und *H. laticollis* ZIMMERMANN.

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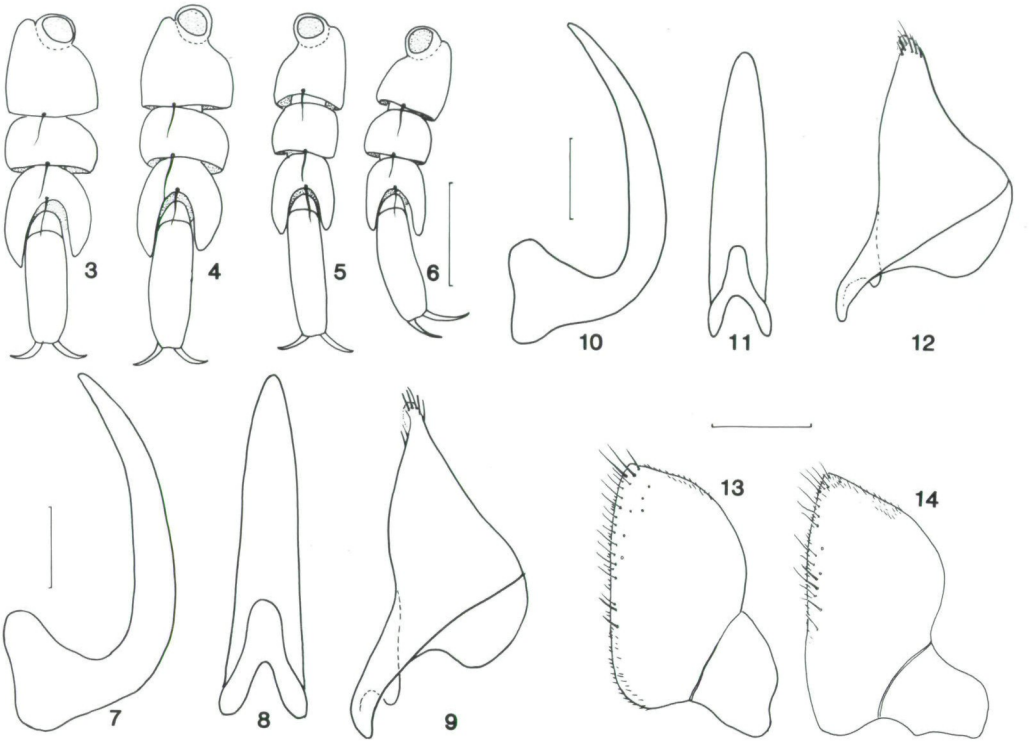

Figs 3 - 6: Protarsus of female (3, 5) and male (4, 6), dorsal view. 3 - 4) *Hydroporus bergmani* sp.n., 5 - 6) *H. brevis*. Scale bar 0.1 mm.
Figs 7 - 12: Penis in lateral (7, 10) and dorsal view (8, 11), and paramere in external view (9, 12). 7 - 9) *Hydroporus bergmani* sp.n., 10 - 12) *H. brevis*. Scale bar 0.1 mm.
Figs 13 - 14: Female gonocoxosternum. 13) *Hydroporus bergmani* sp.n., 14) *H. brevis*. Scale bar 0.1 mm.

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