FERNANDO PEDERZANI, *Hydroporus tuvaensis n. sp. from Tuva Republic (Russia) and notes on the Hydroporus acutangulus-polaris species-complex : (Coleoptera Dytiscidae)*, in «Atti della Accademia Roveretana degli Agiati. B, Classe di scienze matematiche, fisiche e naturali» (ISSN: 1124-0350), s. 8 v. 1 (2001), pp. 233-240.

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con il contributo di
FONDAZIONE CARITRO
CASSA DI RISPARMIO DI TRENTO E ROVERETO

FERNANDO PEDERZANI

HYDROPORUS TUVAENSIS N.SP. FROM TUVA REPUBLIC (RUSSIA) AND NOTES ON THE *HYDROPORUS ACUTANGULUS-POLARIS* SPECIES-COMPLEX *(Coleoptera Dytiscidae)*

ABSTRACT - PEDERZANI F., 2001 - *Hydroporus tuvaensis* n.sp. from Tuva Republic (Russia) and notes on the *Hydroporus acutangulus-polaris* species-complex (*Coleoptera Dytiscidae*).

Atti Acc. Rov. Agiati, a. 251, 2001, ser. VIII, vol. I, B: 233-240.

Hydroporus tuvaensis n.sp. is described from Tuva Republic, Russia (upper basin of Yenisei River). It belongs to the *H. acutangulus-polaris* species-complex and is remarkable for larger size, black color, weak reticulation and differences in sexual characters. Other specimens near *H. acutangulus* seen from various localities in Central and Eastern Asiatic Russia proved to belong to different forms of the complex. Unfortunately the available material is too scarce for a revisional study.

KEY WORDS - *Coleoptera*, *Dytiscidae*, *Hydroporus tuvaensis* n.sp., Tuva, Russia.

RIASSUNTO - PEDERZANI F., 2001 - *Hydroporus tuvaensis* n.sp. della Repubblica di Tuva (Russia) e note sul complesso di specie *Hydroporus acutangulus-polaris* (*Coleoptera Dytiscidae*).

Si descrive *Hydroporus tuvaensis* nuova specie della Repubblica di Tuva (Russia, alto bacino del Fiume Yenisei), di cui furono raccolti 16 esemplari nel 1997. Questa specie appartiene al complesso *H. acutangulus-polaris*, caratterizzato dalla densa pubescenza nello spazio fra le linee metacoxali e dalla presenza nel maschio di setole al bordo posteriore dei metatrocanteri. La nuova specie è molto più grande delle consimili, ha colore decisamente nero, microreticolo assai ridotto e caratteri sessuali maschili diversi. Si fa il punto sulle forme del complesso *acutangulus-polaris* e si evidenzia che nella Russia asiatica esistono verosimilmente altre specie o sottospecie inedite, di cui si conoscono purtroppo pochissimi individui.

PAROLE CHIAVE - *Coleoptera*, *Dytiscidae*, *Hydroporus tuvaensis* n.sp., Tuva, Russia.

In a collection of Dytiscidae from Tuva Republic (Russia) I found a series of *Hydroporus* Clairville, 1806 close to *Hydroporus acutangulus* Thomson, 1856 and *Hydroporus polaris* Fall, 1923, larger than both and conspicuous for the different shape of the aedeagus and the shining black upper surface. I believe that such specimens belong to a new species, described here below.

Hydroporus tuvaensis n.sp.

Type material. Holotype (male) labelled: «Russia, Tuva, near Sush vill., 800-1000 m, 7.VI.1997, leg. Vashchenko». Sush village is about 50 Km NW Kyzyl city (Yuri Berezhnoi pers. commun.). The Holotype will be deposited in the Natural History Museum of Milan (Museo Civico di Storia Naturale di Milano).

Paratypes: same data as Holotype: 12 specimens dry mounted on card and one glued and gold-plated for SEM photos. Paratypes are in author's collection, coll. H.Fery and coll. H.Hebauer (Germany). Two more specimens of the type series were sent to A.Nilsson (Umeå) in 1998.

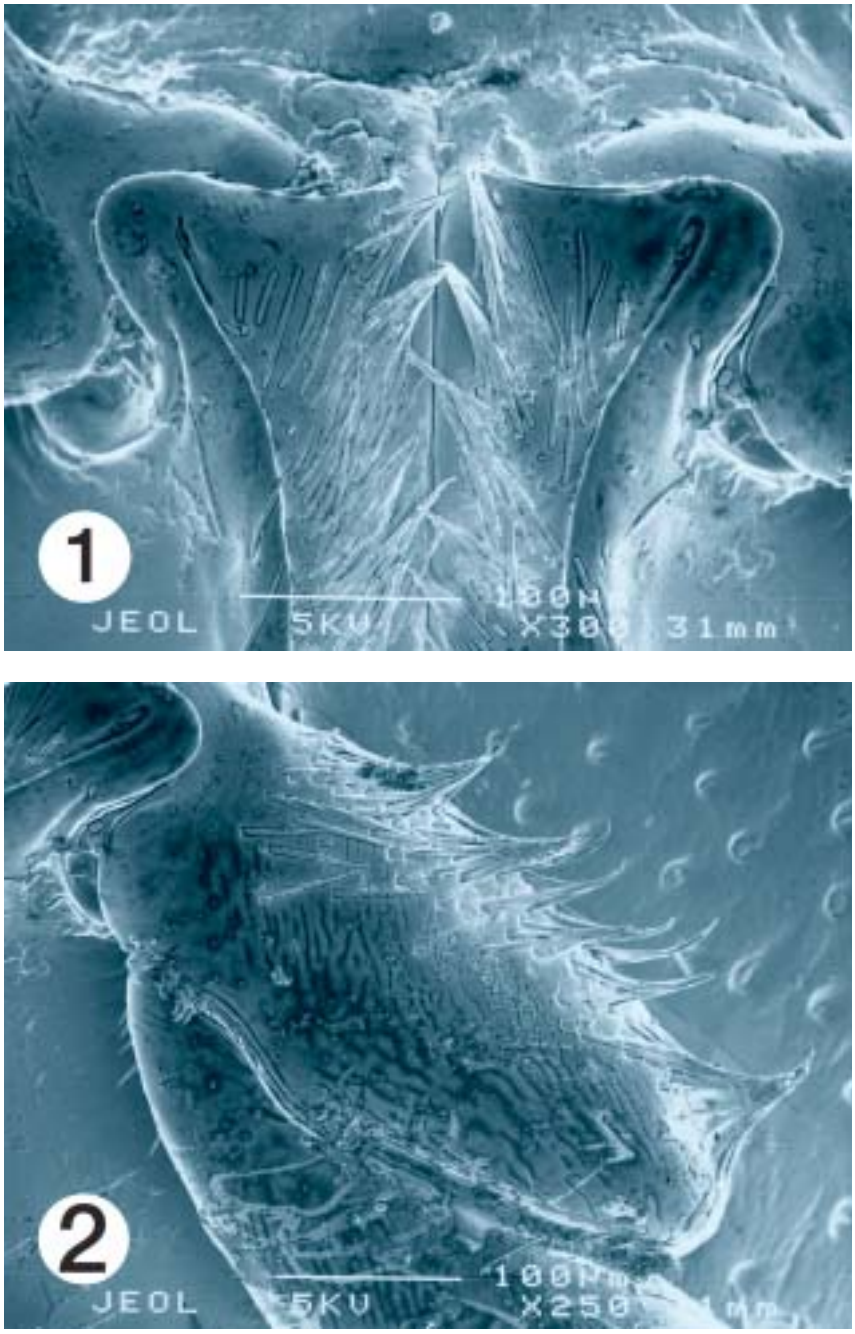
Size. Holotype: total body length mm 3.80, width mm 1.94, ratio length/width = 1.96. Paratypes: mean length mm 3.80; see Table I.

Description. Body oblong-oval with lateral margin continuous in outline, entirely black. Head reticulate, with small and sparse punctuation, except a few larger punctures on vertex, and two shallow anterolateral depressions. Antennae black, pitchy brown at base.

Pronotum with sides gently curved and a broad lateral bead; two shallow latero-basal impressions. Surface shining, with obsolete reticulation laterally and a distinct reticulation in a narrow transverse area along anterior margin. Middle of base more obviously reticulate, principally in females. Punctures small and sparse on disc, coarser laterally, at base and anteriorly, delimiting the submarginal reticulate area.

Elytra pubescent, with strong punctuation. Discal rows of punctures hardly traceable. Surface shiny, with indistinct reticulation laterally and postmedially. Females with more impressed reticulation but with discal area fairly smooth. Epipleura black with sparse punctuation. Lateral margin in side view nearly straight, gently ascending to shoulders.

Underside with obsolete reticulation. Metasternum laterally, metacoxal plates and sterna 1 and 2 coarsely punctuate; sternum 6 with moderate and sparse punctures, with a deep transverse impression, particu-



Figs. 1-2. Underside of *Hydroporus tuvaensis* n.sp., male (Paratype): fig. 1, metacoxal processes; fig. 2, metatrochanter with fringe of setae at the hind margin.

larly so in males. Other sterna with extremely fine and sparse punctuation. Metacoxal lines anteriorly straight, subparallel, slightly diverging in front. Intralinear space finely and densely punctuate, covered with dense gray-yellow setae. Metacoxal processes with hind margins slightly produced medially, with a visible interlaminar bridge (Fig. 1). Prosternal process narrow, elongate and pointed at apex. Legs black.

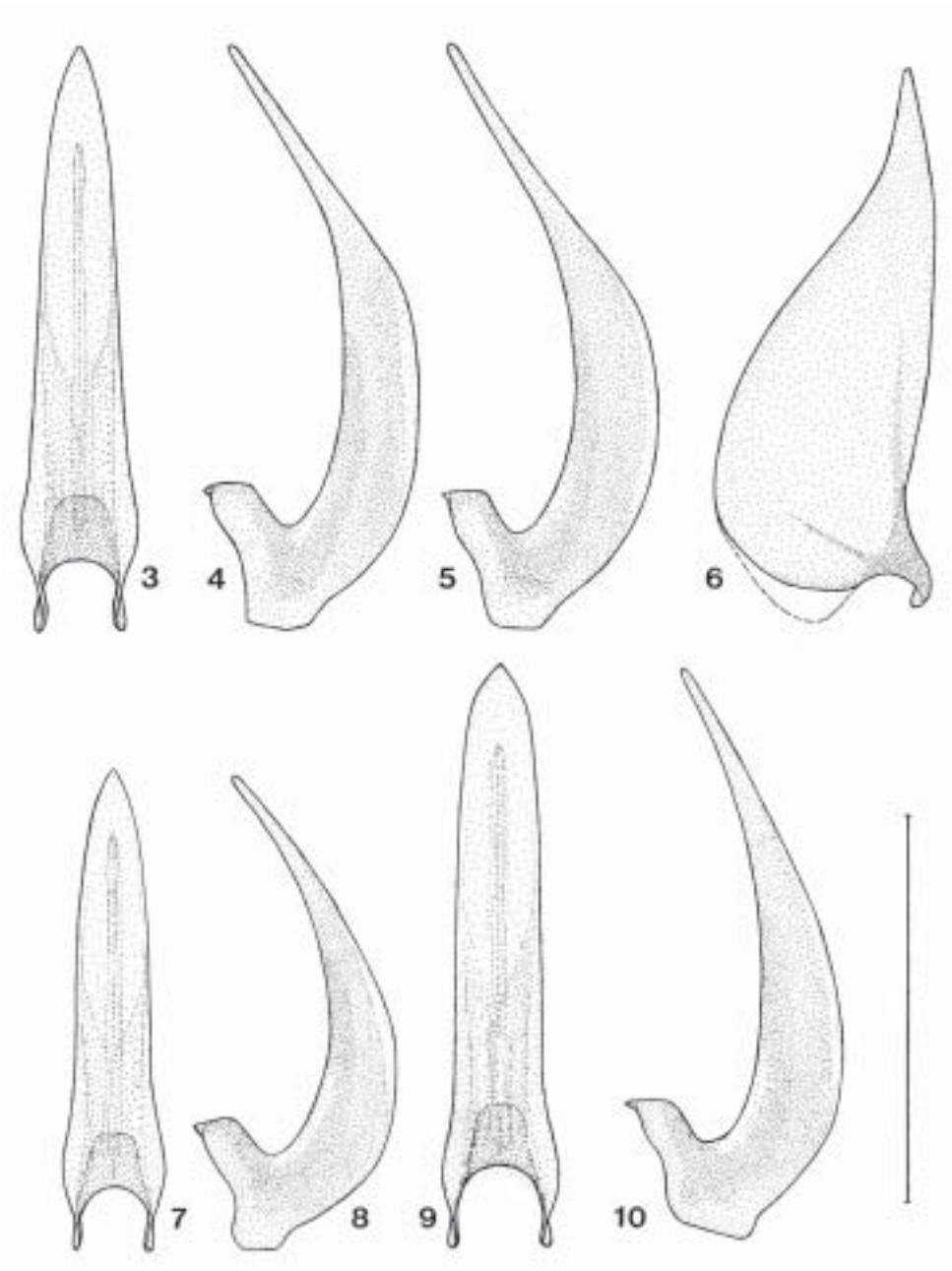
Male - Protarsi slightly broadened, with claws thickened, not very different in shape. Penis in dorsal view tapering toward pointed apex (Fig. 3), in lateral view with apical third narrow and straight or even upturned (Figs. 4 and 5). Paramere of usual structure (Fig. 6). Metatrochanter with hind margin bearing a dense fringe of gray-yellow setae (Fig. 2).

Female - Slightly more reticulate than male. Genital pieces not studied.

Systematic position. Although at first examination the new species looks like a member of the *H. pubescens* group, owing to the shiny upper surface, it belongs to the Holarctic *H. acutangulus-polaris* species-complex because of the setose intralinear space of metacoxae and the fringe of setae at the hind margin of male metatrochanter.

Additional material studied. Since I was searching for more specimens of *H. tuvaensis* n.sp. from upper Yenisei basin, I borrowed (from Hans Fery, Berlin) seven specimens from Mongolia, all females, labelled as follows: 1 ex. «Mongolia, Archangaj aimak, NO Ecke des Sees Ogij Nur, 1350 m, Exp.Dr.Z.Kaszab / Nr. 249 - 2.VII.1964»; 1 ex. «Mongolia, Central aimak, Kerulen 45 Km O v.Somon, Bajandeiger 1340 m, Exp.Dr.Z.Kaszab / Nr. 307 - 27.VII.1965» (this specimen is nearly dull because of strong reticulation); 1 ex. same data, but «Nr. 479 – 25.VIII.1965»; 1 ex. «Mongolia, Chentej aimak, 20 Km SW von Somon, Norovlin 900 m, Exp.Dr.Z.Kaszab / Nr. 448 – 19.VIII.1965»; 2 exs. «Mongolia, Central aimak, 11 Km OSO von Somon, Bajanzogt, 1600 m, Exp.Dr.Z.Kaszab / Nr. 946 – 13.VI.1968»; 1 ex. «Mongolia, Chövsgöl aimak, 8 Km N von Somon, Burenchaan, am Fluss Deiger mörön, 1450 m, Exp.Dr.Z.Kaszab / Nr. 1116 – 6.VII.1968». All specimens bear the identification label «*Hydroporus acutangulus* det. V.Guéorguiev». Although larger than typical *acutangulus* (see Table I), they fit well with that species in color and reticulation. I believe that these specimens are not *H. tuvaensis* n.sp. Unfortunately no male is available for study.

I also borrowed for study one male specimen from Far East (Ussuri), identified as «sp. near *acutangulus*, det. A.Nilsson» (in coll. L.Hendrich, Berlin). It does not belong to *H. tuvaensis* n.sp.



Figs. 3-10. Penis of *Hydroporus* in dorsal view (3, 7, 9), lateral view (4, 5, 8, 10) and paramere (6): figs. 3-4, *H. tuvaensis* n.sp. (Holotype); figs. 5-6, *H. tuvaensis* n.sp. (Paratype); figs. 7-8, *H. acutangulus* Thomson (Sweden, Ekorrsjö); figs. 9-10, *H. polaris* Fall (Canada, Baffin Island) [bar = 0.5 mm for figs. 3-6 ; = 0.42 mm for figs. 7-10].

Some more specimens of the *acutangulus-polaris* complex, recorded from different places of Russian Far East, show variations in comparison with typical *H. acutangulus*, (A.Nilsson, pers. commun.) but I believe that the available material is too scarce at present for a revisional study of the whole complex.

	total length mm (literature range)	total length mm (measured range)	ratio length/width
H. acutangulus Thoms.	2.8 – 3.3	2.90 – 3.23	1.83 – 2.07
H. polaris Fall	2.7 – 3.4	3.15 – 3.35	1.88 – 2.00
H. tuvaensis n.sp.		3.70 – 3.88	1.94 – 2.03
H. acutangulus s.l. females from Mongolia		3.23 – 3.49	1.88 – 1.96

Table I. Body length and ratio length/width in *H. acutangulus* Thomson and allied species.

Synonyms. The following species were synonymized with *H. acutangulus* in early 20th century:
Hydroporus aenescens Sahlberg, 1880
Hydroporus pectoralis Sahlberg, 1880
Hydroporus sumakovi Poppius, 1912
Hydroporus zaitzevi Jakobson, 1908

Another species close to (or synonym of) *H. acutangulus* is *Hydroporus punctatulus* Sahlberg, 1889 from Kola peninsula (A.Nilsson, pers. commun.); as far as I know that species was overlooked by either Zimmermann and Zaitzev.

Since all above synonyms were described from European Russia or extreme North Siberia, and no mention was ever made of lengths approaching the remarkable length of *H. tuvaensis* n.sp., I have no doubts that the latter is a different species.

The Nearctic *Hydroporus subvirescens* Fall, 1923, regarded as a synonym of *H. acutangulus* by ZIMMERMANN (1931), was synonymized with *H. polaris* by LARSON et al. (2000).

Reference material. The following specimens were compared with *H. tuvaensis* n.sp.:

Hydroporus acutangulus: 1 ex. «Sweden, Degerfors, Granölund, 29.IV.1983 leg. A.Nilsson» (coll. Mazzoldi, Brescia); 6 exs. «Sweden, Gladaberg, 29.IX.1985 leg. A.Nilsson» (coll. Mazzoldi); 2 exs. «Sweden, Lule Lappmark, Vaimat, 11.IX.1967 T.B.Engelmark, det. S.Persson» (coll. Rocchi, Florence); 1 ex. «Suecia, Wälhas (?), 3.VIII.1978 det. W.Wiezlak»

(coll. Rocchi); 2 exs. «Sweden, Lappland, Forest bog at Ekorrsjö, Aug.1993 leg. & det. D.T.Bilton» (author's coll.); 1 ex. «Norge, Finnmark, Masi, 11.VII.1966 leg. Olli Ranin» (author's coll.).

Hydroporus polaris: 1 ex. «Canada, NWT, pond at Devon Island 75°N – 85°W VII.6.1971» (coll. Larson); 1 ex. «Canada, NWT, Baffin Is., Frobisher Bay VI.29.1977 W.Blake jr.» (coll. Larson); 1 ex. «Canada, NWT, Chesterfield V.20.1950 J.R.Vockeroth» (coll. Larson).

DISCUSSION

The n.sp. differs from *H. acutangulus* and *H. polaris* as follows:

Size: Table I shows the size of the three species dealt with, reporting measures from literature and from the examined material. Body length is the best character to identify *H. tuvaensis* n.sp.. The length to width ratio is not usable for identification.

Shape: *H. tuvaensis* is more parallel sided than both *acutangulus* and *polaris*.

Color: All specimens of the n.sp. are entirely shining black, including legs, and the second joint of antenna is dark brown to black. On the contrary, both *H. acutangulus* and *polaris* have reddish-brown legs; elytron is often brownish at base and laterally; the second joint of antenna is red to light brown.

Reticulation of females: *H. acutangulus* and *polaris* have an obvious reticulation, the latter more than the former, except sometimes for the disc of pronotum, while in females of *H. tuvaensis* the reticulation is obsolete on the disc of pronotum and elytra and very weak on the underside.

Male sexual characters: Penis in lateral view gives a suitable character to identify the n.sp.: in the apical third the penis of *H. tuvaensis* is narrow, straight (Fig. 4) or even gently upturned (Fig. 5). The inner (anterior) fore claw of *H. tuvaensis* is similar to the outer (posterior) one, and not so curved at base as in *H. acutangulus* and *polaris*.

CONCLUSION

The *H. acutangulus-polaris* complex undoubtedly includes some undescribed taxa, either at specific or subspecific level. The available material from Central and Eastern Asiatic Russia is still insufficient to revise the species-complex. Specimens from Tuva here described as *H.*

tuvaensis n.sp. are fairly different from the remaining forms of the complex and deserve specific status.

ACKNOWLEDGMENTS

Thanks are due to colleagues who kindly supported the author with loan of specimens and information, namely: Hans Fery (Berlin), Lars Hendrich (Berlin), David Larson (S.John's, Newfoundland), Paolo Mazzoldi (Brescia), and Saverio Rocchi (Florence), to Pavel Udovichenko (Moscow) for the supply of type material and to Yuri Berezhnoi (Sochi) for information on the type locality. Special thanks to Anders Nilsson (Umeå) for information and valuable criticism, and to Antonio Galvagni (Rovereto) and Cesare Conci (Milan) for editorial advice and help in publishing the paper.

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Indirizzo dell'autore:
Ing. Fernando Pederzani, Via Landoni 35 - I-48100 Ravenna, Italia