

## *Hydaticus tibetanus* sp.n. from southeastern Tibet (Coleoptera: Dytiscidae)

H.V. SHAVERDO, G. WEWALKA & J. LI

### Abstract

*Hydaticus tibetanus* sp.n. (Coleoptera: Dytiscidae) is described from Zayü County (southeastern Tibet, China). It is morphologically similar to *H. rivanolis* WEWALKA, 1979 and *H. vaziranii* WEWALKA, 1979 thus placing it in the *H. fabricii*-group.

**Key words:** Coleoptera, Dytiscidae, *Hydaticus*, *fabricii*-group, new species, Tibet, China.

### Introduction

The genus *Hydaticus* LEACH, 1817 has an almost worldwide distribution and includes 143 species (ITIS Report 2012; NILSSON 2001). Some of the species are placed in species groups: *H. fabricii*-, *H. vittatus*-, and *H. pacificus*-groups (WEWALKA 1975, 1979; BALKE & HENDRICH 1992; BALKE et al. 2005). In accordance with recent phylogenetic research (MILLER et al. 2009), the tribe Hydaticini has been divided into two genera: *Hydaticus* and *Prodaticus* SHARP, 1882 (junior synonyms: *Guignotites* BRINCK, 1943, *Hydaticinus* GUIGNOT, 1950, and *Pleurodytes* RÉGIMBART, 1899). However, we treat *Hydaticus* and *Prodaticus* as subgenera, following the online world catalogues (ITIS Report 2012), in order to support nomenclatorial stability.

So far 13 species of *Hydaticus* are known from China, but none of these has been recorded from Tibet (NILSSON 1995, 2003, 2012). Two *Hydaticus* species have been recently collected in Zayü County, southeastern Tibet (JÄCH et al. 2012). One of these two species, *H. fabricii* MACLEAY, 1825, is widespread in the Oriental and Australian Regions, the other one is described herein as a new species.

### Material and methods

The following abbreviations are used in the text: NMW (Naturhistorisches Museum Wien, Austria), HNU (Key Laboratory of Remote Sensing Monitoring of Geographic Environment, College of Heilongjiang Province, Harbin Normal University, Harbin, China), TL (total body length), TL-H (total body length without head), MW (maximum width of body). The terminology to denote the orientation of the genitalia (ventral/dorsal) follows MILLER & NILSSON (2003).

For detailed study and photography, genitalia were mounted on glass slides with DMHF (dimethylhydantoin formaldehyde; BAMEUL 1990) as temporary preparations.

The photographs were made by Dr. H. Schillhammer.

All specimen data are quoted as they appear on the labels attached to the specimens. The label text is cited using quotation marks separating different labels and backslashes to separate different lines on one label. Comments by the authors are indicated in square brackets.

*Hydaticus tibetanus* sp.n.

**TYPE LOCALITY:** Xiachayu Village, Gangri Karpo-chu (River) Valley, before confluence with Zayü River, 1500 m a.s.l., 28°29'44"N 97°01'26"E, Zayü County, southeastern Tibet, China.

**TYPE MATERIAL:** **Holotype** ♂ (NMW): "CHINA: Tibet / Zayu county / Xiachayu / July 2011 / don. Li Jingke", "Holotype / *Hydaticus / tibetanus* sp.n. / des. Shaverdo, Wewalka & Li 2012" [red]. **Paratype** ♀, same locality data as holotype, "Paratype / *Hydaticus / tibetanus* sp.n. / des. Shaverdo, Wewalka & Li 2012" [red] (HNU).

**DESCRIPTION: Measurements:** Holotype: TL: 10.1 mm, TL-H: 9.2 mm, MW: 5.3 mm; Paratype: TL: 10.3 mm, TL-H: 9.5 mm, MW: 5.5 mm.

**Coloration** (Fig. 1): Head yellow, paler anteriorly and darker posteriorly, with indistinct pale brown "M"-shaped spot in middle, vertex dark brown to black. Pronotum yellow, pale brown anteriorly at head base, posteriorly in middle with pale shallow half-moon-shaped spot consisting of small black dots. Elytron yellow, with numerous small black spots, partly coalescing mesally, especially along yellow parasutural streak; suture black. Scutellum black. Epipleuron yellow. Head appendages and front legs yellow, middle femora yellow, tibiae and tarsi of middle leg yellowish brown, hind legs brown, but femora paler distally. Ventral surface dark brown, but prosternal base, small lateral spots on abdominal sternites 4–5, and median parts of abdominal sternites 6–7 yellow.

**Surface sculpture** (Fig. 1): Dorsal surface with microreticulation very indistinct on head and more prominent on pronotum and elytra. Head with two kinds of punctation: one very dense (punctures separated by less than one puncture diameter) and fine punctation, and the other much sparser (punctures separated by more than four puncture diameters) and coarser. Pronotum with similar punctation but shallower and sparser, with small shallow folds. Elytral punctation more evident than on pronotum but sparser and with two puncture rows, distal one less evident. Ventral surface with evident, partly strong microreticulation, indistinct punctation laterally on metacoxae, and small shallow folds.

**Structures. Male:** Modified protarsomeres 1–3 with four (two basal and two central) large and 18 small adhesive discs in four slightly irregular rows; protarsomere 3 with setal fringe on posterior margin. Mesotarsomeres 1–3 with 14 small, irregularly placed adhesive discs. Median lobe as in Figs. 2–3. Apex of medial lobe of aedeagus with well-developed brush of short setae. Parameres as in Fig. 4.

**Female:** Slightly larger (see "Measurements"). Tarsomeres not modified.

**DIAGNOSIS:** In the new species the anterior surface of the metatibia lacks small punctures between the large setaceous punctures, and the anterior surface of the metafemur lacks punctation. These characters unambiguously assign the species to the subgenus *Prodaticus*. In accordance with the body size and coloration, as well as shape of the median lobe of the aedeagus, it is placed in the *H. fabricii*-group. Within this group, its shape of the median lobe is very similar to that of *H. rivanolis* WEWALKA, 1979 and *H. vaziranii* WEWALKA, 1979. However, apart from the shape of the median lobe, *H. rivanolis* differs from the new species in the darker coloration of the elytra, due to strong confluence of the black spots, which can lead to uniformly black disc of the elytra. *Hydaticus vaziranii* also differs in the darker elytral disc and additionally in the smaller body size. A more detailed comparison and illustrations will be given in a forthcoming revision of the group (WEWALKA & SHAVERDO, in preparation).

**HABITAT:** The new species has been collected at light near a river bank. See also JÄCH et al. (2012) for habitat details and list of water beetle species collected at the type locality.

**DISTRIBUTION:** This species is known only from the type locality.

**ETYMOLOGY:** The new species is named in reference to Tibet, where it was collected.



Figs. 1–4: *Hydaticus tibetanus*, 1) habitus of holotype, dorsal view, 2) median lobe, ventral view, 3) median lobe, lateral view, 4) paramere, external view.

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## References

- BALKE, M. & HENDRICH, L. 1992: A new species of the genus *Hydaticus* (Coleoptera: Dytiscidae) from the highlands of West Papua. – Mitteilungen der Schweizerischen Entomologischen Gesellschaft 65 (3–4): 297–302.
- BALKE, M., HENDRICH, L., SAGATA, K. & WEWALKA, G. 2005: *Hydaticus dintelmanni* sp. n. from Papua New Guinea highlands (Coleoptera: Dytiscidae). – Linzer Biologische Beiträge 37 (2): 1251–1255.
- BAMEUL, F. 1990: Le DMHF: un excellent milieu de montage en entomologie. – L'Entomologiste 46 (5): 233–239.
- ITIS Report 2012: *Hydaticus* Leach, 1817: [http://www.itis.gov/servlet/SingleRpt/SingleRpt?search\\_topic=SN&search\\_value=112172](http://www.itis.gov/servlet/SingleRpt/SingleRpt?search_topic=SN&search_value=112172).
- JÄCH, M., LI, J., ZHANG, X. & GAO, M. 2012: A remarkable collection of aquatic and riparian beetles from Xiachayu, Zayü County, southeastern Tibet (Coleoptera: Gyrinidae, Noteridae, Dytiscidae, Spercheidae, Hydrophilidae, Heteroceridae, Limnichidae). – Koleopterologische Rundschau 82: 65–69.
- MILLER, K.B. & NILSSON, A.N. 2003: Homology and terminology: communicating information about rotated structures in water beetles. – Latissimus 17: 1–4.
- MILLER, K.B., BERGSTEN, J. & WHITING, F. 2009: Phylogeny and classification of the tribe Hydaticini (Coleoptera: Dytiscidae): partition choice for Bayesian analysis with multiple nuclear and mitochondrial protein-coding genes. – Zoologica Scripta 38 (6): 591–615.
- NILSSON, A.N. 1995: Noteridae and Dytiscidae: Annotated check list of the Noteridae and Dytiscidae of China (Coleoptera), pp. 35–96. – In Jäch, M.A. & Ji, L. (eds.): Water beetles of China, vol. 1. – Wien: Zoologisch-Botanische Gesellschaft in Österreich and Wiener Coleopterologenverein, 410 p.
- NILSSON, A.N. 2001: Dytiscidae. – World catalogue of insects, vol. 3. – Stenstrup: Apollo Books, 395 pp.
- NILSSON, A.N. 2003: Dytiscidae, pp. 35–78. – In Löbl, I. & Smetana, A. (eds.): Catalogue of Palaearctic Coleoptera, vol. 1. – Stenstrup: Apollo Books, 819 pp.
- NILSSON, A.N. 2012: Catalogue of Palaearctic Coleoptera: Noteridae and Dytiscidae. – Online at: [http://www2.emg.umu.se/projects/biginst/andersn/PALCATDYT\\_20120101.pdf](http://www2.emg.umu.se/projects/biginst/andersn/PALCATDYT_20120101.pdf).
- WEWALKA, G. 1975: Revision der Artengruppe des *Hydaticus vittatus* (Fabricius) (Dytiscidae, Col.). – Koleopterologische Rundschau 52: 87–100.
- WEWALKA, G. 1979: Revision der Artengruppe des *Hydaticus (Guignotes) fabricii* (MacLeay) (Col., Dytiscidae). – Koleopterologische Rundschau 54: 119–139.

WEWALKA, G. & SHAVERDO, H., in prep.: Revision of the *fabricii*-group of the genus *Hydaticus* Leach, 1817 (Coleoptera: Dytiscidae).

Dr. Helena V. SHAVERDO

Naturhistorisches Museum, Burgring 7, A – 1010 Wien, Austria (shaverdo@mail.ru,  
helena.shaverdo@nhm-wien.ac.at)

Dr. Günther WEWALKA

Starkfriedgasse 16, A – 1190 Wien, Austria (g.wewalka@gmx.at)

Jingke LI

P.O. Box 22, Vientiane, Laos (carabuslaos@yahoo.com.cn)

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Autor(en)/Author(s): Shaverdo Helena Vladimirovna, Wewalka Günther, Li Jingke

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