DYTISCIDAE:
III. The *Hyphydrus* Illiger species of China
(Coleoptera)

O. BISTRÖM*

Abstract

The *Hyphydrus* Illiger (Coleoptera: Dytiscidae) species thus far recorded from China are listed and keyed. The distribution of the species, based on verified records, is presented. *Hyphydrus fangensis* BISTRÖM & SATÔ is recorded for the first time from China. The genus *Hyphydrus* is recorded for the first time from Tibet.

Key words: Coleoptera, Dytiscidae, *Hyphydrus*, China, key, distribution.

Introduction

The *Hyphydrus* species occurring in China are still fragmentarily known. Articles dealing with the genus are quite few considering the enormous land area of China. The most important works besides Sharp's (1882) enormous monograph of Dytiscidae are those of Falkenström (1936), Brinck (1943) and Balfour-Browne (1944) who published taxonomic reviews of the Chinese and Japanese *Hyphydrus* species. Feng (1933) provided a taxonomic review of the Chinese Dytiscidae and recognized four *Hyphydrus* species from that country. Wu (1937) and Nilsson (1995) published lists of the Dytiscidae recorded from China. Finally, BISTRÖM (1982) provided a global revision of the genus. At present, nine species of *Hyphydrus* are recognized from China.

The aim of the present article is to list the *Hyphydrus* species recorded from China, provide a key for determination at the species-level and present the known distribution of the species, based on records verified by the author of this article.

The genus *Hyphydrus*, belonging to the tribe Hyphydrini in the subfamily Hydroporinae, is distinguished by the following characteristics: base of metatrochanter totally exposed and clypeus with anterior margin beaded.

Acronyms and CWBS localities

BMNH  The Natural History Museum, London, UK
CAS  California Academy of Sciences, San Francisco, USA
CASS  Chinese Academy of Sciences, Institute of Applied Ecology, Shenyang
CWBS  China Water Beetle Survey
CWW  Coll. Wewalka, Wien
IPKE  Institut für Pflanzenschutzforschung Kleinmachnow, Eberswalde, Germany
ISN  Institut royal des Sciences naturelles de Belgique, Brussels, Belgium
LUZ  Zoological Museum, Lund, Sweden

* Contribution to the study of Dytiscidae 71.
CWBS loc. 28: **Hunan Province**; Huaihua Prefecture; Huitong County; Guangping Township; near Paotuan Village, ca. 1 km from Academia Sinica Research Station; small river, flowing through rice terraces, partly dammed up, slightly polluted, ca. 1 m wide, ca. 350 m a.s.l.; 2.XI.1993; leg. Schönmann, Schillhammer & Ji.

CWBS loc. 33: **Hunan Province**; Huaihua Prefecture; Huitong County; Guangping Township; ca. 10 km S of lower Research Station of Academia Sinica; springfed pools along road ditch and flooded rice fields, ca. 400 m a.s.l.; 6.XI.1993; leg. Schönmann, Schillhammer & Ji.

CWBS loc. 40: **Guangxi Autonomous Region**; Liuzhou Prefecture; ca. 10 km NE Liuzhou City; 3 km NW Shamunjiang Forest Station; small stream, ca. 1.5 - 2.0 m wide, slowly flowing through dense vegetation of small shrubs and some abandoned rice fields, ca. 150 - 200 m a.s.l.; 11.XI.1993; leg. Schönmann, Schillhammer & Ji.

CWBS loc. 89: **Jilin Province**; Yanbian Korean Autonomous Prefecture; Antu County; Baihe City, Baohuji District; surroundings of Changbai Mountain Research Station, along the road to Changbai Mountain; unshaded roadside pools, ca. 750 m a.s.l.; 19.VIII.1994; leg. Jäch.

CWBS loc. 103: **Liaoning Province**; Fushun City Region; Xinbin County; 80 km NE Fushun City; 3 km E Cangshi Town; Hun He, ca. 60 m wide, fast flowing, unshaded, gravel and mud, including gravel pools, ca. 20°C, slightly polluted, ca. 80 m a.s.l.; 12.IX.1994; leg. Ji & Wang.

CWBS loc. 109: **Liaoning Province**; Fushun City Region; Qingyuan County; 120 km NE Fushun City; 4 km W Douhutun Town; Shiaojia Gou; ground water pool, 40 m², 1 m deep, margin with stones and mud, unpolluted, more than 20°C, Populus sp. and Salix sp. growing along the river; 14.X.1994; leg. Ji & Wang.

CWBS loc. 130: **Shandong Province**; Yantai Prefecture; Zhaoyuan County; 12 km NE Zhaoyuan City; on the way to Luo Shan, 4 km NE Zhaoyuan City; small river, slowly flowing, unshaded, margin with gravel and mud, slightly polluted, ca. 18°C, P. sp. and S. sp. growing along the river; 14.X.1994; leg. Ji & Wang.

CWBS loc. 147: **Liaoning Province**; Anshan City Region; Qian Shan Forest Park; ca. 15 km SE Anshan City; 10 km from park main gate; Xihai Lake, ca. 80 m wide, slightly eutrophic, 350 m a.s.l.; 4.V.1995; leg. Wang.

CWBS loc. 148: **Liaoning Province**; Shenyang City Region; Qian Shan City; ca. 7 km NW Xinmin City; close to road No. 102; rain water and ground water pool, ca. 6 m wide, unshaded, 50 m a.s.l.; 2.VI.1995; leg. Wang.

CWBS loc. 149: **Liaoning Province**; Shenyang City Region; Qian Shan City; ca. 7 km NW Xinmin City; 20 m from CWBS loc. 148; rain water and ground water pool, ca. 15 m wide, unshaded, 50 m a.s.l.; 2.VI.1995; leg. Wang.

CWBS loc. 150: **Liaoning Province**; Shenyang City Region; ca. 7 km NW Xinmin City; 20 m from road No. 102; rain water and ground water pool, ca. 30 m wide, unshaded, 50 m a.s.l.; 2.VI.1995; leg. Wang.

CWBS loc. 190: **Hainan Province**; Qionghzhong County; ca. 4 km W Qionghzhong City; fish pond, ca. 150 m a.s.l.; 16.I.1996; leg. Jäch, Ji & Wang.
Key to the Chinese species of *Hyphydrus*  
(predominantly only applicable to male specimens)

1. Longer metatibial spine smooth-edged (Fig. 1) ............................................. 2  
- Longer metatibial spine serrate (Fig. 2) ............................................................. 6

2. Second sternite of male with sharp, backwards projecting process (Fig. 3); disc of elytron in female with distinct, longitudinal groove .......................................................... *H. l. lyratus*  
- Second sternite lacks process; disc of elytron non-grooved .................................. 3

3. Male protrochanters incised but lack distinct process (Fig. 4) ............................. 4  
- Male protrochanters incised and provided with process (Figs. 5, 6) ....................... 5

4. Male pro- and mesotarsi broad, flattened (Fig. 7) ............................................ *H. excoffieri*  
- Male pro- and mesotarsi slender, non-flattened .................................................. *H. pulchellus*

5. Male protrochanters with broad process (Fig. 5) ............................................ *H. fangensis*  
- Male protrochanters with slender process (Fig. 6) ............................................ *H. sumatrae*

6. Male mesotarsus long, slender (Fig. 8) ......................................................... *H. falkenstroemi*  
- Male mesotarsus shorter, basal segment enlarged (Fig. 9) ..................................... 7

7. Penis in lateral view apically almost straight, narrow (Fig. 10); apex of penis as in Fig. 11 .......................................................... *H. japonicus vagus*  
- Penis in lateral view curved and broad (Figs. 12 - 13) ........................................ 8

8. Penis short (Fig. 12) ..................................................................................... *H. detectus*  
- Penis longer (Fig. 13) .................................................................................. *H. orientalis*

Faunistic remarks

Figures 14 and 15 are based on verified records given below. All the information of material sampled by the CWBS is listed. For more detailed information of other records, see BISTRÖM (1982).
Fig. 14: Confirmed Chinese distribution records of Hyphyrhus detectus, H. excoffieri, H. falkenstroemi, H. fangensis, H. japonicus vagus.

Fig. 15: Confirmed Chinese distribution records of Hyphyrhus lyratus, H. orientalis, H. pulchellus, H. sumatrace.
**Hyphydrus birmanicus** Régimbart, 1888

This species was recorded from China (Yunnan) by Zeng (1989) - see also Nilsson (1995). This record needs verification.

**Hyphydrus detectus** Falkenström, 1936


The record "Manchuria, Weishaha", leg. Weymarn (1 ex. CAS) is not located.

**Hyphydrus excoffieri** Régimbart, 1899

GANSU: "Hoei-Sien" [= Hui Xian] (1 ex. MNB). - HUBEI: "Hupe" [= Hubei], "Johang" [= Yichang, ca. 250 km W Wuhan City] (2 exs. MNB). - YUNNAN: S Xiaoguan, 12 km S Weishan, Weibaoshan 2500 - 3000 m, 1.-17.VII.1993 (1 ex. NMW); 100 km W Kunming, Diaolin, 22.V.-2.VI.1993 (1 ex. NMW); "Yunnan-Sen" [= Yunnan Province] (7 exs. MNHN); "Yunnan fou" [= Kunming] (1 ex. MNHN, 1 ex. MZH); "Pe-Yen-Tsin" [= Yanfeng] (2 exs. MNHN).

**Hyphydrus falkenstroemi** Gschwendtner, 1939


**Hyphydrus fangensis** Biström & Sato, 1988

HAINAN: CWBS loc. 190 (1 ex. NMW); CWBS loc. 217 (1 ex. NMW, 1 ex. MZH).

First record for China. Previously, *H. fangensis* was known only from Thailand.

**Hyphydrus japonicus vagus** Brinck, 1943


Records of *H. japonicus* from Taiwan (Zimmermann 1919, Kamiya 1938) need to be verified.

**Hyphydrus lyratus lyratus** Swartz, 1808

GUIZHOU: "Kouy Tcheou" [= Guizhou] (7 exs. MNHN, 1 ex. MZH). - FUJIAN: "Foochow" [Fuzhou] (1 ex. BMNH). - HONG KONG: "Hong Kong, Galatea" [these specimens probably originate from a Danish marine expedition which passed through Asia in the early 1950's; Galatea was the name of the vessel] (8 exs. ZMK). MACAO: Friendship Monument, at light, 2.V.1998, leg. Easton [det. Wewalka] (1 ex. NMW); pond on reclaimed area, 27.IX.1995, leg.
Hyphydrus orientalis CLARK, 1863


Hyphydrus pulchellus CLARK, 1863

FUJIAN: "Amoy" (= Xiamen) (2 exs. ZMK); "Foochow" (= Fuzhou) (1 ex. BMNH). - HAINAN: CWBS loc. 190 (1 ex. NMW).

Hyphydrus sumatrae REGIMBART, 1880

YUNNAN: S Xiaoguan, 12 km S Weishan, Weibaoshan, 2500 - 3000 m, 1.-17.VII.1993 (7 exs. NMW, 3 exs. MZH); 100 km W Kunming, Diaolin, 22.V.-2.VI.1993 (2 exs. NMW).

The taxonomic status of H. sumatrae is uncertain; possibly it needs to be further divided. The record from "Mukden" [= Shenyang, Liaoning] (1 ex. MNHN) is to be considered questionable (mislabelling?).

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References


Olof BISTRÖM

Zoological Museum, P.O. BOX 17, FIN - 00014 University of Helsinki, Finland

E-mail: olof.bistrom@helsinki.fi