

SPHAERIUSIDAE

(Coleoptera)

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Abstract

Sphaeriusidae (Coleoptera) localities are recorded for the first time from China. All Chinese specimens currently are identified as *Sphaerius* sp.

Key words: Coleoptera, Myxophaga, Sphaeriusidae, *Sphaerius*, locality data, China.

Introduction

Sphaeriusidae are placed within the Coleoptera suborder Myxophaga (BEUTEL 1999, BEUTEL & HAAS 2000, BEUTEL et al. 1999, CROWSON 1955, LAWRENCE 1982, LAWRENCE & NEWTON 1995, 1982). The family currently is composed of one genus, *Sphaerius* WALTZ, and 22 described species (CHAMPION 1923, ENDRÖDY-YOUNG 1997, HORN 1868, LESNE 1935, 1936, 1940, LÖBL 1995, MATTHEWS 1888, 1899, OKE 1954, PAULIAN 1949, WALTZ 1838).

Adults range 0.5 - 1.2 mm in length, dark brown to black, glabrous with occasional markings, antennae yellow with long setae on terminal segments. Larvae up to 1.5 mm in length, body flattened, fusiform, narrowed posteriorly, urogomphi absent, legs large. Detailed descriptions of adults and larvae are available (BEUTEL 1999, BEUTEL et al. 1999, BRITTON 1966, HALL 2000, HINTON 1967, LAWRENCE & REICHARDT 1991). Recent examination of specimens from California (USA) confirms the presence of the *Sphaerius* pupa resting within the final larval exuvia (W.E. Hall, in prep), a subordinal character shared with other myxophagans (COSTA et al. 1988, BEUTEL et al. 1999).

Sphaeriusidae larvae and adults feed on algae and occur beneath stones, in mud or on algae along the edges of streams and rivers, among plant roots, mosses associated with bogs, or moist leaf litter not associated with bodies of water (LÖBL 1995). Adults store air beneath their elytra, but lack the dense mat of setae that acts as a plastron in other myxophagans, as in *Hydrosapha* (BEUTEL 1999, BRITTON 1966, HINTON 1967, MESSNER & JOOST 1984).

The 22 described species of *Sphaerius* occur in Europe, Africa, Madagascar, Asia, Australia and North and Central America (ENDRÖDY-YOUNG 1997, LÖBL 1995, REICHARDT 1973). *Sphaerius coomani* LESNE, 1936, *S. cribratus* LESNE, 1936, *S. favosus* LESNE, 1936, *S. obsoletus* LESNE, 1936, *S. perlaevis* LESNE, 1936 and *S. tessellatus* LESNE, 1936 were described from North Vietnam. Four species, *S. alticola* LÖBL, 1995, *S. gustavlohsei* LÖBL, 1995, *S. humicola* LÖBL, 1995, *S. silvicola* LÖBL, 1995, were described from Nepal. One species, *S. laeviventris* CHAMPION, 1923, was described from North India (Uttar Pradesh). *Sphaerius papulosus* LESNE 1940 is recorded from Myanmar (Washaung).

Material examined

Up to now, more than 70 specimens of *Sphaerius* were collected during the China Water Beetle Survey (CWBS):

CWBS loc. 38: 4 exs.; CWBS loc. 43: 7 exs.; CWBS loc. 49: 5 exs.; CWBS loc. 182: 3 exs.; CWBS loc. 185: 1 ex.; CWBS loc. 192: 1 ex.; CWBS loc. 241: 5 exs.; CWBS loc. 246: 3 exs.; CWBS loc. 369: 3 exs.; CWBS loc. 372: 1 ex.; CWBS loc. 378: 5 exs.; CWBS loc. 387: 1 ex.; CWBS loc. 388: 24 exs.; CWBS loc. 396: 6 exs.; CWBS loc. 398: 1 ex.; CWBS loc. 433: 1 ex.; CWBS loc. 482: 1 ex.; CWBS loc. 492: 2 exs.

Their occurrence was noted briefly by JÄCH (1998). The specimens presently are identified as *Sphaerius* spp. pending a worldwide revision of the genus (W.E. Hall, in prep.). Comparisons of the specimens collected in China will need to be made with species occurring in adjacent regions (Myanmar, India, Nepal, Vietnam). Collection data from the *Sphaerius* specimens collected in China are presented below.

All specimens are deposited in the Naturhistorisches Museum Wien (Vienna, Austria).

CWBS localities:

CWBS loc. 38: **Guangxi Autonomous Region**; Liuzhou Prefecture; ca. 10 km NE Liuzhou City; ca. 2 km E Shanmenjiang Forest Station; small stream, ca. 0.3 - 0.5 m wide, with accumulations of decaying plant material, ca. 200 m a.s.l.; 10.XI.1993; leg. H. Schönmann, H. Schillhammer & L. Ji; [locality number on label: 17].

CWBS loc. 43: **Guangxi Autonomous Region**; Yülin Prefecture; Liuwan Da Shan; small, steep mountain streams on the S slope of Kui Shan Ding (= Helmet Mountain), cataracts, large crystalline boulders, coarse sand, dense vegetation, slopes covered with planted forest, 600 - 700 m a.s.l.; 17.XI.1993; leg. H. Schönmann, H. Schillhammer & L. Ji; [locality number on label: 21].

CWBS loc. 49: **Guangxi Autonomous Region**; Yülin Prefecture; Liuwan Da Shan; stream, ca. 2 km upstream of CWBS loc. 42, 0.3 - 0.5 m wide, flowing through rather flat area, rather sandy, ca. 500 m a.s.l.; 20.XI.1993; leg. H. Schönmann, H. Schillhammer & L. Ji; [locality number on label: 26].

CWBS loc. 182: **Hainan Province**; Qionghai City Region; Baishiling Scenic Spot, ca. 10 km SW of Qionghai City; small stream, ca. 0.5 m wide, slowly flowing through rubber plantation, granite, sand and gravel, shaded, 20 m a.s.l.; 14.I.1996; leg. L. Ji & M. Wang.

CWBS loc. 185: **Hainan Province**; Qionghai City Region; Baishiling Scenic Spot, ca. 20 km SW of Qionghai City; stream and pools under bridge close to main gate of park area, unshaded, slightly polluted, 15 m a.s.l.; 14.I.1996; leg. L. Ji & M. Wang.

CWBS loc. 192: **Hainan Province**; Qiongzong County; Maoyang Town; Changhua River, ca. 40 m wide (river bed ca. 80 m wide), potamal, banks with gravel and sand, ca. 100 m a.s.l.; 17.I.1996; leg. M.A. Jäch, L. Ji & M. Wang (see JÄCH & Ji 1998: Fig. 4).

CWBS loc. 241: **Fujian Province**; Jianyuan Prefecture; Chong'an City Region; ca. 3 km SW Wuyi Gong Village (= Shanqian), ca. 10 km S Chong'an City; small stream (right tributary of Jiu Qü River, left branch), ca. 0.5 m wide, shaded, sandy, partly dried out, very few parts with slowly flowing water, some pools partly filled with water and plant debris, ca. 250 m a.s.l.; 16.I.1997; leg. H. Schönmann, L. Ji & M. Wang.

CWBS loc. 246: **Fujian Province**; Jianyuan Prefecture; Chong'an City Region; ca. 3 km NW Wuyi Gong Village (= Shanqian), ca. 10 km S Chong'an City; upper part of small river, mostly dried out, partly 20 - 30 cm wide sections of flowing water in narrow gorges, crystalline sand and gravel, partly larger pools, shaded by dense vegetation, gravel mostly covered by algae, 300 m a.s.l.; 17.I.1997; leg. H. Schönmann, L. Ji & M. Wang.

CWBS loc. 369: **Yunnan Province**, Xishuangbanna Dai Autonomous Prefecture, Mengla County, ca. 50 km NW Mengla, ca. 800 m a.s.l.; River Nangong, ca. 5 - 8 m wide, flowing through dense forest; 9.XI.1999; leg. M.A. Jäch & H. Schönmann.

- CWBS loc. 372: **Yunnan Province**, Xishuangbanna Dai Autonomous Prefecture, Jinghong City Region, few km E Mengyang, along road to Menglun, ca. 800 m a.s.l.; man-made lake; 10.XI.1999; leg. M.A. Jäch, H. Schönmann, M. Wang & Y. Wei.
- CWBS loc. 378: **Yunnan Province**, Xishuangbanna Dai Autonomous Prefecture, Menghai County, ca. 11 km N Mengyang, near "Elefant Valley", ca. 700 m a.s.l.; stream, ca. 1 m wide, meandering through primary forest; 12.XI.1999; leg. M.A. Jäch, H. Schönmann, M. Wang & Y. Wei.
- CWBS loc. 387: **Yunnan Province**, Simao Prefecture, 54 km SW Simao, Cuiyun Resort, ca. 1000 m a.s.l.; River Jian Shan, upwelling of karst river, ca. 5 - 7 m wide, with large boulders, little vegetable debris; 15.XI.1999; leg. H. Schönmann & M. Wang.
- CWBS loc. 388: **Yunnan Province**, Simao Prefecture, 36 km SW Simao, road Simao - Lancang, ca. 1000 m a.s.l.; stream, 3 - 5 m wide, flowing through dense pine forest, substrate: sandstone rocks, hardly gravel and organic debris; 15.XI.1999; leg. H. Schönmann & M. Wang.
- CWBS loc. 396: **Yunnan Province**, Simao Prefecture, Mojiang County, 35 km SW Mojiang, ca. 1050 m a.s.l.; River Naji, 5 - 7 m wide, waterfalls and pools with fine sand; 19.XI.1999; leg. H. Schönmann & M. Wang.
- CWBS loc. 398: **Yunnan Province**, Gejiu Prefecture, Gejiu City, 10 km N Gejiu, ca. 1300 m a.s.l.; river, ca. 2 - 3 m wide, flowing through deforested area, sediment: marble, limestone, sandstone, clay; 22.XI.1999; leg. H. Schönmann & M. Wang.
- CWBS loc. 433: **Guizhou Province**, Qiandongnan Miao Dong Autonomous Prefecture, Leishan County, SE Kaili, NE Leishan, eastern slope of Leigong Shan, ca. 300 m S of pass between Leishan and Fangxiang Village (road to Mogaung Village), ca. 1700 m a.s.l., 26°22'34"N 108°13'24"E; small steep rivulet, in very dark and narrow gorge with dense vegetation; 14.VI.2001; leg. H. Schillhammer & M. Wang.
- CWBS loc. 482: **Guangdong Province**, Shaoguan Prefecture, Shixing County, Shixing - Chebaling road, ca. 45 km SE of Shixing, ca. 30 km NE of Chebaling Village, ca. 200 m a.s.l., 24°47'28"N 114°15'56"E; stream (right tributary of River Shui), ca. 2 - 3 m wide, flowing through primary forest; 8.XI.2001; leg. M.A. Jäch & A. Komarek.
- CWBS loc. 492: **Guangdong Province**, Huiyang Prefecture, Boluo County, ca. 40 km ENE of Zengcheng, near Xialang Village, foot of Luofu Shan, close to CWBS loc. 491, ca. 170 m a.s.l., 23°17'12"N 114°03'42"E; stream, 4 - 6 m wide, flowing through degraded forest, with large granite boulders; 11.XI.2001; leg. A. Komarek & M. Wang.

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