

***Bembidion (Pseudosinocys) schoedli* subgen.n. sp.n.
from Hubei, China
(Coleoptera: Carabidae)**

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Abstract

Bembidion schoedli sp.n. (type area: Dashennongjia Mountains, western Hubei Province, China) is here described. It is the type species of *Pseudosinocys* subgen.n.

Key words: Coleoptera, Carabidae, Bembidiini, *Bembidion*, *Pseudosinocys*, Palaearctic Region, taxonomy.

Introduction

The purpose of this paper is the description of *Bembidion schoedli* sp.n., a very small new species from the Chinese province of Hubei. This species, at a first sight very similar in habitus to the species of subgenus *Microsinocys* TOLEDANO, 1998, probably shares a common origin with *Microsinocys*, as shown by details of the male genitalia, but it lacks some synapomorphic characters of this subgenus. Therefore I describe here a new subgenus for *B. schoedli* in order to prevent an unnecessary extension of the diagnostic characters for *Microsinocys*, a clearly monophyletic group.

Material & methods

This paper is based on study of 82 specimens belonging to the species here described and some hundreds of specimens belonging to other species of *Bembidion* LATREILLE, 1802. Sources of material are the following collections:

CR Coll. Rébl, Nove Straseci
CS Coll. Smetana, Ottawa
CT Coll. Toledano, Verona
CW Coll. Wrase, Berlin
NMW Naturhistorisches Museum Wien

Measurements were made with a Leica MZ12 stereobinocular microscope at 25 x (body) and 100 x (median lobes of aedeagi) and are expressed in the text by these abbreviations:

el/ew elytral length / elytral width ratio
ew/pw elytral width / pronotum width ratio
pw/hw pronotum width / head width ratio
pw/pl pronotum width / pronotum length ratio

The body length was measured for card-mounted specimens, from the front margin of the clypeus to the apex of the elytra, and the antennal length from the base of antennomere 1 to the apex of antennomere 11. Dissections were made using standard techniques. Genitalia and small parts were preserved in Euparal on acetate labels fixed on the same pins as the specimens.

Photographs were taken with a Nikon Coolpix 995 digital camera on a Leica MZ12 stereobinocular microscope. Drawings of the aedeagi were made by using a drawing tube on a Leica MZ12 stereobinocular microscope, and images taken with a Nikon Coolpix 995 digital camera on the same microscope. For a second time, they were processed with the Photoshop® 5.0 LE program (habitus) and Color-it!2.3™ program (genitalia) on a Macintosh Powerbook G4 computer.

Bembidion (Pseudosinocys) subgen.n.

DIAGNOSIS: Antennae moniliform, head relatively large, pronotum with deep basal foveae, elytra with clearly punctate striae, two discal elytral setigerous punctures in interval 3, apical stria, but lacking apical elytral carina typical for *Microsinocys*, and with main male genital structure as in *Microsinocys*.

TYPE SPECIES: *Bembidion schoedli* sp.n.

DERIVATIO NOMINIS: The Latin name, based on two words (*pseudo*, meaning false; and the generic name *Sinocys*), is intended to indicate structural similarity between the members of this subgenus and those of *Microsinocys* TOLEDANO, 1998.

DESCRIPTION: Small (body length 2.2–2.7 mm). Dark brown to piceous-black with legs reddish to brown.

Head relatively large with convex eyes; antennae moniliform as in *Microsinocys*.

Pronotum subcordate with deep basal foveae.

Metasternal process unbordered, with the most anterior part of the process raised in respect to the body of the process, but not clearly margined.

Legs rather short.

Elytra convex, oval with striae 1–7 clearly punctured, basal margin extended to a point in line with base of stria 5, two discal setigerous punctures in interval 3; apical stria present, with seta in middle.

Male genitalia. Main structure identical to that of *Microsinocys*, endophallus with two main sclerites (sclerite “a” and sclerite “b”, TOLEDANO 1998). Each paramere with three apical setae.

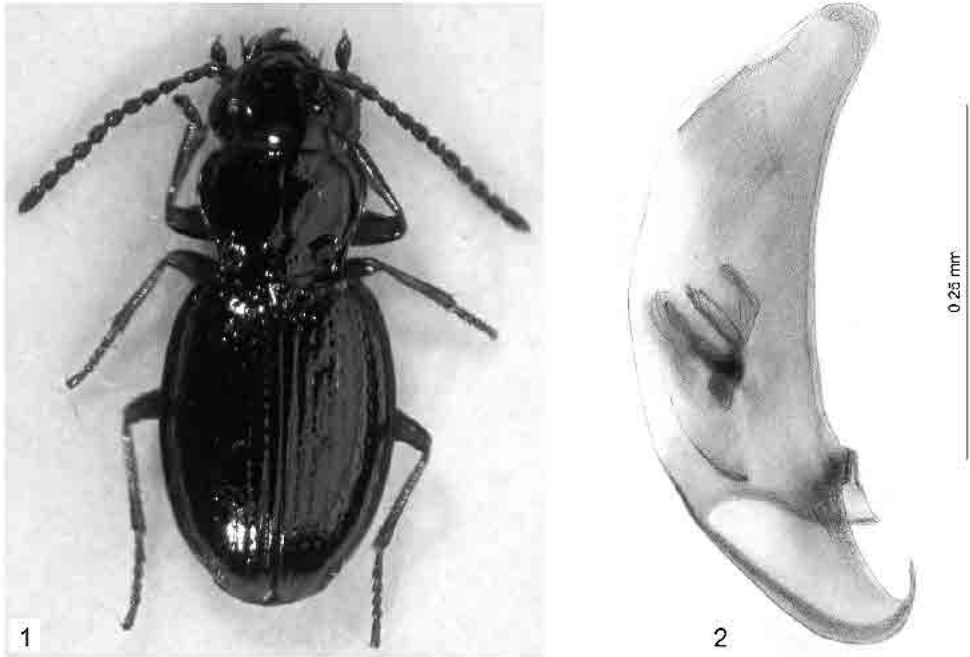
Female genitalia. Spermatheca simple with reservoir small, subspherical, apparently divided in two cavities, annulus receptaculi slightly sclerotized, duct and long gland not sclerified.

DISTRIBUTION: Southwestern China (Hubei).

AFFINITIES: The subgenus *Pseudosinocys* belongs to the group of subgenera more strictly related to *Bembidion* s.str. (TOLEDANO 2000), characterized by the position of the discal elytral setigerous punctures, situated clearly in interval 3.

The single species of *Pseudosinocys* seems to be closely related to the Chinese subgenus *Microsinocys* TOLEDANO, 1998, as indicated by the small size, structure of the head and antennomeres and by similarities in the male genitalia, while the differences are mainly in the elytral structure, with absence of the typical carinate apical stria of *Microsinocys*, one of the main synapomorphic characters of the included species.

Pseudosinocys shares the following character with another Chinese subgenus, *Josefia* TOLEDANO, 2000: elytra markedly convex with striae clearly punctate, except for the apical stria, present in *Pseudosinocys* and absent from *Josefia* where the apical setigerous puncture is isolated.



Figs. 1–2: *Bembidion schoedli* sp.n.; 1) habitus of paratype from W Hubei, Daba Shan mountain range; 2) median lobe of aedeagus of paratype from W Hubei, Dashennongja mountains.

For these reasons, *Pseudosinocys* could represent a transitional form between *Microsinocys* and *Josefia*, while the male genitalia of *B. schoedli* clearly show the same general structure as in the subgenus *Microsinocys*. Thus, it seems more probable that *Microsinocys* and *Pseudosinocys* are sister groups. Also the structure of the metasternal process is shared by *Pseudosinocys* and *Microsinocys*, while *Josefia* is different also from this point of view. Also the male genitalia of *Josefia* are more complex than in *Microsinocys* (TOLEDANO 2000) and *Pseudosinocys*.

Only two of the twelve species of *Microsinocys*, i.e. *B. turnai* TOLEDANO, 1998 and *B. daxuense* TOLEDANO, 1998 show a structure of the pronotum rather similar to that of *B. schoedli*, since in both species well developed basal foveae (extremely reduced in or absent from the remaining species of the subgenus) are present.

***Bembidion (Pseudosinocys) schoedli* sp.n.**
(Fig. 1)

TYPE LOCALITY: China, Hubei, Dashennongja Mountains, 31.5N 110.3E, 2100–2900 m.

TYPE SERIES: Holotype, ♂, “China, W Hubei, 21.-24.VI.2001, DASHENNONGJIA mts., 31.5N 110.3E, 2500-3000m” (CT); Paratypes, 1 ♂, 7 ♀♀, same date and locality as the holotype (CT); 1 ♂, “CHINA W.Hubei, 31.5N 110,3E 2-3 km Dashennongja mts., 22.6.2001” (CR); 15 ♂♂, 22 ♀♀, “China, W Hubei, 10.-14.VI.2002, DASHENNONGJIA mts., 31.5N 110.3E, 2100-2900m” (CT, NMW); 12 ♂♂, 8 ♀♀, “CHINA (W Hubei) Daba Shan mountain range NE Muyuping, pass 12 km N Muyuping, 31°32'N/110°26'E, 2380m, N pass (N-slope / young decid. for./ shrubs, moss) 17.-21.VII.2001” (CW, CT); 6 ♂♂, 3 ♀♀, “CHINA (W Hubei) Daba Shan mountain range NE Muyuping, pass 12 km N Muyuping, 31°32'N/110°26'E, 2380m, N pass (N-slope / young decid. for./ bank

of small creek / moss / sift) 17.-21.VII.2001" (CW, CT); 1 ♂, "CHINA (W Hubei) Daba Shan mountain range NE Muyuping, pass 12 km N Muyuping, 31°32'N/110°26'E, 2380m, N pass (N-slope / young decid. for./ bank of small creek / moss / sifted) 21.VII.2001" (CW); 1 ♀, "CHINA W Hubei (Daba Shan) mountain range NE Muyuping, pass 12 km N Muyuping, 31°32'N/110°26'E, 2380m, 17.VII.2001, N pass, N-slope with young deciduous forest, bank of small creek, moss (sifted)" (CW); 1 ♂, 3 ♀♀, "CHINA: W-Hubei Daba Shan mtn range NE Muyuping, pass 12 km N Muyuping, 31°32'N/110°26'E, 2380m, 17.7.2001" (CS, CT).

DERIVATIO NOMINIS: This species is dedicated to the late Dr. Stefan Schödl, famous entomologist at the NMW.

DESCRIPTION: Length 2.2–2.7 mm. Dark brown to piceous black, glossy, with elytral margin brownish, legs and antennae brown with apex of antennomeres darker. Head wide, almost as wide as the pronotum, eyes rather convex, frontal furrows parallel, more or less deep, extended to clypeus, and there slightly convergent.

Pronotum transverse (pw/pl = 1.45–1.48) (ew/pw = 1.31–1.45) with large, deep, square basal foveae, distinctly developed laterobasal carina, deeply impressed median line, basal margin not rectilinear, with median portion slightly rounded and protruded posteriorly. Hind pronotal angle sharp while obtuse. Basal margin as long as anterior one. Base with some punctures.

Elytra (el/ew = 1.37–1.43) oval, convex, humeri rounded. Seven striae clearly impressed, punctate. Striae 1 and 2 extended to apex, 3–7 slightly shallower before apex. Basal margin ended with dentiform projection in line with base of stria 5. Two discal setigerous punctures clearly in interval 3, the anterior one at anterior third, posterior one at posterior third in most specimens; in some specimens, both punctures more anterior, at least in one elytron. Apical stria normal, with a setigerous puncture in middle, connected with apex of stria 5. Rudiment of "crista clavicularis" present. Scutellar striole very short, punctate.

Microsculpture absent from dorsal surface of head, pronotum and elytra.

Metathoracic wings very small.

Male genitalia (Fig. 2). Median lobe of aedeagus very flat in dorsal aspect. Sclerite "a" elongate, club-shaped, sclerite "b" formed by two oblique linear bodies, parallel to one another, connected by a slightly sclerotized membrane, over sclerite "a" in left lateral aspect, as in *Microsinocys*.

DISTRIBUTION: Known only from two close localities of W Hubei, China.

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