Review of the millipede genus *Epanerchodus* Attems, 1901 in continental China, with descriptions of new species (Diplopoda: Polydesmidae)

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Abstract

Four new species of *Epanerchodus* are described from mainland China: *E. jaegeri* sp. nov. and *E. martensi* sp. nov., both sympatric and even partly syntopic in Shaanxi, *E. schwalleri* sp. nov., from Sichuan, and *E. yunnanensis* sp. nov., from Yunnan. In addition, *E. koreanus* Verhoeff, 1937 is formally new to the fauna of China due to fresh samples from Jilin. A key is presented to all 14 unquestioned species of *Epanerchodus* currently known from mainland China.

Key words: *Epanerchodus*, taxonomy, key, China

Introduction

Since the synonymization of *Usbekodesmus* Lohmander, 1933 and *Prionomatis* Miyosi, 1956 with *Epanerchodus* Attems, 1901 (Golovatch 1991; Golovatch et al. 2011), this eastern Palaearctic genus has become one of the most speciose amongst the diplopod genera in the region, at present counting 70+ nominate species. Most of the species diversity is restricted to Japan, whereas the remaining areas like Central Asia (Uzbekistan and Tajikistan), Afghanistan, Pakistan, the Russian Far East (Maritime Province, Sakhalin and Kurile Islands), Korea, China (together with Taiwan) and the Himalayas each support but a handful of species. Discarding the still enigmatic, female-based *Polydesmus moorei* Pocock, 1895, from Da-zeh Valley, ca 60 mi inland from Sam-Moom Bay, and *P. paludicola* Pocock, 1895, from We Lee Lake, 25 mi S of Ningpo, Chekiang Province, eastern China (Pocock 1895), both or either of which may well appear to represent *Epanerchodus* (Golovatch 1991), only the following nine unquestioned congeners have hitherto been reported from mainland China:

*Epanerchodus draco* Geoffroy & Golovatch, 2004, from a cave in Yunnan (Geoffroy & Golovatch 2004);
*E. eurycornutus* Zhang & Wang, 1992, from Zhejiang (Zhang & Wang 1992);
*E. frater* Geoffroy & Golovatch, 2004, from a few caves in Yunnan, occurring sympatrically with *E. soror* (Geoffroy & Golovatch 2004);
*E. orientalis* Attems, 1901, apparently the most polymorphous and widespread congener currently reported from nearly all over Japan (except for Kyushu and the Ryukyus) and Taiwan, as well as from a cave in Guangxi, southern China (Golovatch et al. 2011, 2012);
*E. potanini* Golovatch, 1991, from Sichuan and Gansu provinces (Golovatch 1991);
*E. soror* Geoffroy & Golovatch, 2004, from a few caves in Yunnan (Geoffroy & Golovatch 2004);
*E. sphaeroretus* Zhang & Chen, 1983, from Zhejiang (Zhang & Chen 1983);
*E. styloretus* Chen & Zhang, 1990, from a few caves in Guizhou Province (Chen & Zhang 1990; Golovatch et al. 2007, 2012);
*E. varius* (Geoffroy & Golovatch, 2004), from several caves in Hubei and Sichuan provinces (Geoffroy & Golovatch 2004; Golovatch et al. 2007).

Prompted by a few more *Epanerchodus* found recently in continental China, not only their records or descriptions are provided below, but also a key to all of them is given.
Gonopods highly variable even between syntopic males, mostly much like in Fig. 6, a small exomere often present, but sometimes totally suppressed, 2–3 processes or evident, elaborate outgrowths at base of an elongated endomere. Guangxi. At least two males are thus necessary to secure a correct identification. 

- Gonopods far more stable, truly species-characteristic; endomere stout 

Body ca 15–16 mm long, brown. Sphaerotrichomes present on male postfemora, tibiae and tarsi. Gonopod with a small dentiform exomere. 

- Body considerably smaller, at most ca 12 mm long. Sphaerotrichomes absent. Exomere either absent or a prominent ancoriform structure. 

Adult body ca 8–12 mm long, 1.1–1.5 mm wide. Gonopod endomere ancoriform, an exomere totally absent (Fig. 19). Sichuan. 

- Body ca 6 mm long, 0.7 mm wide. Gonopod deeply bifid, exomere prominent and ancoriform. Mt Tianmu, Zhejiang. 

- Body larger, width ca 2.2 mm. Midbody paraterga considerably broader than prozona. Caves in Guizhou. 

13 Body smaller, width ca 1.0 mm. Midbody paraterga relatively narrow, barely broader than prozona. A cave in Yunnan. 

- Body smaller, width of adults ≤ 2.5 mm. One or two processes at base of endomere. 

- Body larger, width of adults > 3.0 mm. Two long processes at base of endomere. 

- Male prefemora slender, not bulging laterally (Figs 14 & 23). Gansu and Sichuan. 

9 Male prefemora stouter, at least slightly bulging laterally (Figs 5 & 10). Shaanxi. 

11 Sphaerotrichomes present (Fig. 23). Exomere absent (Fig. 24). Yunnan. 

- Sphaerotrichomes absent (Fig. 14). Exomere present (Fig. 15). Shaanxi. 

10 Male postfemora slender, not bulging laterally (Figs 14 & 23). Gansu and Sichuan. 

- Only male postfemora, tibiae and tarsi with sphaerotrichomes (Fig. 5). Exomere (ex) a uniramous spine (Fig. 6). Gansu and Sichuan. 

1 Body smaller, width ca 1.0 mm. Midbody paraterga relatively narrow, barely broader than prozona. A cave in Yunnan. 

- Body larger, width ca 2.2 mm. Midbody paraterga considerably broader than prozona. Caves in Guizhou. 

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