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A new subgenus and three new species of oribatid mites of the genus *Yoshiobodes* (Acari, Oribatida, Carabodidae) from Vietnam

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Abstract

A new subgenus and three new species of oribatid mites of the genus *Yoshiobodes*, *Yoshiobodes* (*Dongnaiobodes*) **subgen. nov.**, *Y. (D.) hexasetosus* **sp. nov.**, *Y. (D.) biconcavus* **sp. nov.** and *Y. (Yoshiobodes) neutrichorostralis* **sp. nov.**, are described from southern Vietnam. *Yoshiobodes* (*Dongnaiobodes*) **subgen. nov.** differs from the other subgenera, *Yoshiobodes* (*Yoshiobodes*) and *Yoshiobodes* (*Berndobodes*), by the presence of five to six pairs of genital setae (versus four). *Yoshiobodes* (*D.*) *hexasetosus* **sp. nov.** differs from *Yoshiobodes* (*D.*) *biconcavus* **sp. nov.** by the absence of two large concavities in humeral regions of the notogaster and the presence of short, clavate sensilli (versus concavities well developed, sensilli long, thickened, setiform). *Yoshiobodes* (*Y.*) *neutrichorostralis* **sp. nov.** differs from the other species of the subgenus by the presence of three additional pairs of setae on the lateral sides of the rostrum and the foveolate ornamentation on the notogaster (versus additional setae absent, surface tuberculate). The new generic diagnosis and an identification key to all known species of *Yoshiobodes* are given. *Yoshiobodes ornatus* Mahunka, 1987 is proposed as “*nomen nudum*”. *Austrocarabodes* (*Austrocarabodes*) *polytrichus* Balogh & Mahunka, 1978 combined in the subgenus *Austrocarabodes* (*Uluguroides*): *A. (U.) polytrichus* **comb. nov.**

Key words: oribatid mites, Carabodidae, *Yoshiobodes*, generic diagnosis, new subgenus and species, key, Vietnam

Introduction

The genus *Yoshiobodes* of the family Carabodidae (Acari, Oribatida) was proposed by Mahunka (1986) with *Carabodes irmayi* Balogh & Mahunka, 1969 as type species. Currently, this genus comprises two subgenera (*Yoshiobodes* (*Yoshiobodes*) Mahunka, 1986, *Y. (Berndobodes)* Mahunka, 1986) and 10 species, which are distributed in the Oriental, Neotropical and eastern Palaearctic regions and southern U.S.A. (data summarized by Subías 2004, updated 2014).

During taxonomic surveys of oribatid mite fauna of southern Vietnam (two-month Russian-Vietnamese expedition in November and December 2013—see Ermilov & Anichkin 2014a, b; Ermilov *et al.* 2014) we found a new subgenus and three new species of *Yoshiobodes*. The main purpose of our paper is to describe and illustrate these taxa.

Additionally, we present a new generic diagnosis of *Yoshiobodes* and an identification key for all known species of this genus, and also discuss the systematic placement of *Yoshiobodes ornatus* Mahunka, 1987 and *Austrocarabodes polytrichus* Balogh & Mahunka, 1978.

10. Centrodorsal notogastral setae very small, clearly shorter than interlamellar setae; adanal setae simple; body size: 363 × 196 *Yoshiobodes (Yoshiobodes) plumosulus* (Balogh, 1970a) (Sri Lanka)
- Centrodorsal notogastral setae of medium size, similar in length to interlamellar setae; adanal setae weakly plumose; body size: 332–353 × 191–201 *Yoshiobodes (Yoshiobodes) plumosus* (Balogh, 1970a) (Sri Lanka)
11. Notogastral setae c_1 , c_2 narrowly phylliform, c_3 phylliform; four pairs of centrodorsal notogastral setae larger than others; body size: 252–382 × 139–203 *Yoshiobodes (Berndobodes) hauseri* Mahunka, 1996 (Borneo)
- Notogastral setae c_1 , c_2 , c_3 simple, thin; centrodorsal notogastral setae not larger than others; body size: 312–376 × 176–238 *Yoshiobodes (Berndobodes) spiculifer* Mahunka, 1986 (Borneo)

Remarks on species of *Yoshiobodes ornatus* Mahunka, 1987

Mahunka (1991) presented information on *Yoshiobodes ornatus* Mahunka, 1987, which was sampled in Sabah, East Malaysia. This species was included in catalogues of known oribatid mite taxa (Subías 2004; Schatz – data not published). However, after a thorough literature review, it was found that Mahunka did not describe this species in 1987 or in any other year. Hence, *Yoshiobodes ornatus* is not known to science and should be considered as “*nomen nudum*”.

Remarks on systematic placement of *Austrocarabodes (Austrocarabodes) polytrichus* Balogh & Mahunka, 1978

The analysis of literature on the carabodid species with six pairs of genital setae to compare *Yoshiobodes (Dongnaiobodes) hexasetosus* **sp. nov.** with has revealed an incorrect systematic placement of *Austrocarabodes (Austrocarabodes) polytrichus*. It was described by Balogh and Mahunka (1978) from Australia. All species of the subgenus *Austrocarabodes (Austrocarabodes)* Hammer, 1966 have four pairs of genital setae. However, *Austrocarabodes (A.) polytrichus* has six to seven pairs of genital setae as in some species of the subgenus *Austrocarabodes (Uluguroides)* Mahunka, 1983. Hence, this species should be combined in *Austrocarabodes (U.): A. (U.) polytrichus* **comb. nov.**

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