



Two new millipede species of the genus *Riukiaria* (Diplopoda, Polydesmida, Xystodesmidae) endemic to the Ryukyu Archipelago, Japan

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Abstract

We describe two new species of the millipede genus *Riukiaria* from two islands of the Ryukyu Archipelago: *R. maculata* sp. n. from Tane-ga-shima, northern Ryukyus, and *R. mundyi* sp. n. from Yonaguni-jima, the southwesternmost member of the Yaeyama Island Group. Both species show the simple forceps-like male gonopod structure typical for the genus, but they are readily distinguishable from other members by their unique color patterns. We have also compiled a list of species in the genus described up to now.

Key words: species description, Tane-ga-shima, Yonaguni-jima

Introduction

The millipede genus name *Riukiaria* was invalidly proposed (without type species) by Verhoeff (1936), but two years later Attems (1938) designated *R. pugionifera* Verhoeff, 1936 as its type species, and hence became the author of the genus. Several species were described subsequently under the names *Rhysodesmus* and *Rhysolus* (Gressitt 1941; Takakuwa 1941, 1942; Miyosi 1952a, 1952b, 1957; Wang 1956, 1957; Haga 1968; Golovatch 1978) until Shinohara (1977) finally established that all East Asian species of „*Rhysodesmus*” should be referred to *Riukiaria* Attems, 1938 (with a junior synonym of *Rhysolus* Chamberlin and Wang, 1953) or *Takakuwaia* Verhoeff, 1936 (which became a junior synonym of *Xystodesmus* Cook, 1895, according to Hoffman 1956). The genus *Rhysodesmus* Cook, 1895 hence became appropriately restricted to the North American species (Hoffman 1980).

The genus *Riukiaria* is classified in the tribe Xystodesmini with four related East Asian genera: *Koreoaria* Verhoeff, 1937; *Levizonus* Attems, 1898; *Xystodesmus* Cook, 1895; and *Yaetakaria* Hoffman, 1949. Tanabe and Shinohara (1996) synonymized Harpaphini with Xystodesmini, hence pooling the North American genera *Harpaphe* Cook, 1904, *Isaphe* Cook, 1904, *Thrinaphe* Shelley, 1993, and *Tubaphe* Causey, 1954 into Xystodesmini as well. Hoffman (1999) did not consider Xystodesmini, and maintained Harpaphini for *Harpaphe* and *Isaphe*, whereas removed *Tubaphe* into Chonaphini.

Hoffman (1980, p. 187) diagnosed Harpaphini according to gonopodal structure, and this diagnosis was accepted and transferred to Xystodesmini by Tanabe and Shinohara (1996, p. 1470): “male gonopod with long, nearly straight sternal apodeme and telopodite generally reduced in size, equaling coxae or appreciably smaller in overall bulk”. They also suggested a close relationship between *Riukiaria* and *Xystodesmus*, saying (Tanabe and Shinohara 1996, p. 1479) that “the two genera share three unique character states: (1) gonocoxae have one macroseta; (2) posterolateral corners of paranota are rounded on segments 1-4 and acutely produced on segments 5-18; (3) metatergites have rows of tubercles. ... These possible synapomorphies suggest that the two genera are closely related to each other.” However, with our new direct observations, characters 2 and 3 seem questionable, and put the separation of the two genera on different grounds (*e.g.* body size, body coloration, and gonopod conformation details). On a recent molecular tree based on mitochondrial COI-COII sequences and using maximum likelihood