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Description of a New Salamander of the Genus *Onychodactylus* from Shikoku and Western Honshu, Japan (Amphibia, Caudata, Hynobiidae)

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Abstract

Recent phylogenetic studies using mtDNA and allozymes clarified the presence of multiple distinct genetic lineages in the Japanese clawed salamander, *Onychodactylus japonicus*, of which two from northern regions of the country have already been described as new species. Based on morphological analyses of the remaining genetic lineages, we describe the lineage from Shikoku Island and Chugoku Mountains of western Honshu, in western Japan, as a new species, *Onychodactylus kinneburi* **sp. nov.** It belongs to the *O. japonicus* complex and is morphologically similar to *O. japonicus* (sensu stricto), but is distinguishable from all the other members of the complex by sharply defined yellowish-orange dorsal stripe on black ground color, lack of dark marking on chest, whitish ventrum, comparatively large body size, and relatively narrow head, usually with 19 presacral vertebrae, 13 costal grooves, and relatively smaller number of vomerine tooth series. The new species occurs exclusively in Shikoku Island, but is sympatric with *O. japonicus* in Chugoku Mountains.

Key words: *Onychodactylus kinneburi*, Morphology, taxonomy, Western Japan, Shikoku Island, Sympatry

Introduction

The salamander genus *Onychodactylus* from northeast Asia has long been considered to contain only two species, *O. japonicus* (Houttuyn) from Japan and *O. fischeri* (Boulenger) from Russian Far East, northeast China, and Korean Peninsula (Sato 1943; Nakamura & Uéno 1963; Kuzmin 1995). However, a series of genetic studies by Yoshikawa *et al*. (2008, 2010a, b, 2012) revealed extensive genetic diversity and presence of multiple distinct lineages, each of which is a candidate of cryptic species in both species. Recently, Poyarkov *et al.* (2012) revised *Onychodactylus* taxonomy based on morphological and mitochondrial phylogenetic analyses, and split *O. fischeri* into four species (*O. fischeri* [sensu stricto], *O. koreanus* Min, Poyarkov & Vieites, *O. zhangyapingi* Che, Poyarkov, Li & Yan, *O. zhaoermii* Che, Poyarkov & Yan). Of the six candidate cryptic species recognized in *O. japonicus* by Yoshikawa *et al*. (2010, 2012), Poyarkov *et al*. (2012) described one as *O. nipponoborealis* Kuro-o, Poyarkov & Vieites. More recently, Yoshikawa & Matsui (2013) described another lineage reported as the Tsukuba group of *O. japonicus* (Yoshikawa *et al*. 2010a, 2012) as a new species *O. tsukubaensis* from Tsukuba Mountains of eastern Honshu, Japan, based on morphological data. By these actions, the remaining three lineages recognized by Yoshikawa *et al*. (2010a, b, 2012) remain to be described.

Of these lineages, the Shikoku group is reported to occur in Shikoku Island and several parts of Chugoku Mountains of western Honshu Island (Yoshikawa *et al*. 2008, 2010a). Interestingly, the Chugoku Mountain population of the Shikoku group occurs sympatrically with and is clearly isolated reproductively from the Southwest (SW)-Honshu group (*O. japonicus* sensu stricto), indicating their heterospecific relationships. In this paper, we describe the Shikoku group as a new species on the basis of morphological data.

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