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## Valid or not? Yunnan mountain snake *Plagiopholis unipostocularis* (Serpentes: Colubridae: Pseudoxenodontinae)

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### Abstract

*Plagiopholis unipostocularis* Zhao, Jiang & Huang, 1978 is a small snake endemic to Yunnan, southern China. Its validity is still controversial and unresolved. Based on extensive sampling in Yunnan, we conducted morphological comparison and molecular phylogenetics on the unidentified specimens of *Plagiopholis* from Yunnan. Based on a combination of morphological comparison and molecular phylogeny, the newly collected specimens could be identified as *P. blakewayi*. While some specimens exhibit one or more diagnostics of *P. unipostocularis*, and some characteristics are intermediate between that of *Plagiopholis unipostocularis* and *P. blakewayi*. Thus morphological continuities between two species uncovered *P. unipostocularis* is a synonymy of *P. blakewayi*, and the diagnostics of this species was revised accordingly.

**Key words:** Snakes, morphology, *Plagiopholis*, Asia, classification

### Introduction

The mountain snake genus *Plagiopholis* Boulenger, 1893, is a group of small non-venomous snakes. This genus currently consists of five species, *P. blakewayi* Boulenger 1893, *P. nuchalis* Boulenger 1893, *P. styani* Boulenger 1899, *P. delacouri* Angel, 1929, and *P. unipostocularis* Zhao and Huang 1978 (Uetz & Hallermann 2015). These small snakes usually feed earthworms and are encountered in grasses, bushes and riprap (Zhao 2006). The species of this genus are distributed in southern China, northern Thailand, Burma, Laos, and Vietnam (Das 2010). Of them, *Plagiopholis delacouri* is the only species known to occur outside of China (Zhao 2006).

*Plagiopholis unipostocularis*, described on the basis of a single female specimen from Yunnan (no detail locality), China, is distinguished from its congeners by several scalation characteristics (Zhao *et al.* 1978), and it is endemic to Yunnan (Zhao 2006). Li (1994) has questioned the validity of this species after a morphological comparison between *P. unipostocularis* and *P. blakewayi*. He suggested the former should be a synonym of *P. blakewayi*. However, this suggestion was not followed by some authors (Yang & Rao 2008). During field work in Yunnan, China in 2014, 14 specimens of *Plagiopholis* were collected and they were compared to other known species.

### Material and methods

**Morphological comparison.** Fourteen unidentified specimens (seven females and seven males) from Yunnan were examined morphologically (Table 1). *Plagiopholis unipostocularis*, *P. blakewayi* and *P. nuchalis* are all known to occur in Yunnan (Fig. 1). For comparison purposes, eight specimens of *P. blakewayi*, and the holotype of *P. unipostocularis* were also examined (Table 1). Data from published papers (Zhao *et al.* 1998; Zhao 2006; Li 1994) were also included in the study.