



Discovery of the centipede family Plutoniumidae (Chilopoda) in Asia: a new species of *Theatops* from China, and the taxonomic value of spiracle distributions in Scolopendromorpha

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Abstract

Theatops chuanensis n. sp. is proposed for a Chinese representative of Plutoniumidae, the first Asian record of this otherwise North American and southern European chilopod family. Its ultimate legs lack prefemoral and femoral spines, and the species is unique within *Theatops* in possessing spiracles on segment 7. The reliability of segment 7 spiracles as a criterion for diagnosing scolopendromorph genera is challenged by various lines of evidence. An updated key to genera and species of Plutoniumidae is provided.

Key words: Chilopoda, Plutoniumidae, *Theatops chuanensis*, taxonomy

Introduction

The discovery of species diversity of Plutoniumidae and generic concepts within the family date from the mid-19th through mid-20th centuries. Though Plutoniumidae has been monographed in modern times (Shelley 1997) and its taxonomy and biogeographic data continue to be refined (Shelley 2002), no new species have been discovered in nearly 60 years. Plutoniumidae is widely endorsed as a Palaearctic-Nearctic clade, until now known only from southern Europe and widely distributed in the United States and northern Mexico, with a total of six species in two genera. Our study exposes a major lacuna in previous knowledge of the family's distribution; we describe a new species of Plutoniumidae from Sichuan Province, China, and assign it to a revised concept of the North American/southern European genus *Theatops* Newport, 1844. The Sichuan discovery extends the geographic range of Plutoniumidae by thousands of kilometers, the closest occurrences being in the Balkan Peninsula and in the western United States (Figure 1).

The taxonomic history of Plutoniumidae was recounted in detail by Shelley (1997: 58–62). Bollman (1893) established Plutoniinae as the first suprageneric grouping uniting *Plutonium* Cavanna, 1881, and *Theatops* Newport, 1844. This membership has remained nearly constant through subsequent concepts of Plutoniuminae (correction from Plutoniinae proposed by Shelley & Backeljau 1995) or Plutoniumidae (elevated to familial rank by Zapparoli 2009) to the present day. *Plutonium* remains known only from its type species, *P. zwierleini* Cavanna, 1881, originally proposed for material from Sicily, and later found in Sardinia, the Italian mainland, and southern Spain (Cavanna 1881; Würmli 1975; Shelley 1997; Zapparoli 2009). Bollman (1893) collated geographic data for the then known North American species of *Theatops*, *T. posticus* (Say, 1821) and *T. spinicaudus* (Wood, 1865). Additional species were later added by Chamberlin (*T. californiensis* Chamberlin, 1902, from California; *T. phanus* Chamberlin, 1951, from Texas). The taxonomic history of *T. californiensis* relative to the sole European congener, *T. erythrocephalus* (C.L. Koch, 1847), is