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Taxonomic status of the enigmatic salamander *Cryptotriton adelos* (Amphibia: Plethodontidae) from northern Oaxaca, Mexico, with observations on its skull and postcranial skeleton

DAVID B. WAKE¹, SEAN M. ROVITO¹, JESSICA A. MAISANO² & JAMES HANKEN^{3,4}

¹Department of Integrative Biology and Museum of Vertebrate Zoology, University of California, Berkeley, California 94720-3160, USA. E-mail: wakelab@berkeley.edu; smrovito@gmail.com

²Jackson School of Geosciences, University of Texas, Austin, Texas 78712, USA. E-mail: maisano@mail.utexas.edu

³Department of Organismic and Evolutionary Biology and Museum of Comparative Zoology, Harvard University, Cambridge, Massachusetts 02138, USA. E-mail: hanken@oeb.harvard.edu

⁴Corresponding author. E-mail: hanken@oeb.harvard.edu

Papenfuss and Wake (1987) described a new species of plethodontid salamander from northern Oaxaca, Mexico, which they named *Nototriton adelos*. The species was assigned to *Nototriton* primarily on the basis of its similarity to members of that widespread genus, which as then constituted ranged from Oaxaca, Mexico, to east-central Costa Rica. At that time, *Nototriton* had no unique synapomorphies but rather included diminutive species that could be excluded from membership in all other genera. Wake and Elias (1983), who erected *Nototriton*, acknowledged that the genus might eventually be shown to be paraphyletic, but they were unable to further resolve the phylogeny with information then available. The original description of *N. adelos* was based on the holotype and three paratypes; in the subsequent 25 years, despite many futile attempts, only one additional specimen of this species has been discovered: UTAVC A-3956, the largest known specimen, a female, 25.6 mm snout-vent length, from near the type locality.

From the start, assignment of the species to *Nototriton* was problematic on zoogeographic grounds: it was the only member of its genus from west of the Isthmus of Tehuantepec in southeastern Mexico. Later, when DNA sequence data demonstrated conclusively the paraphyly of *Nototriton*, *N. adelos* was transferred to the newly erected genus *Cryptotriton* (García-París & Wake 2000), but in the absence of sequence data for this species. Once again, however, *C. adelos* was the only member of its genus from west of the Isthmus of Tehuantepec.

Hanken's (1983) study of allozymic variation in the endemic Mexican plethodontid genus *Thorius* included a single specimen of *Cryptotriton adelos*, but Papenfuss and Wake (1987) subsequently argued that this specimen, and the species to which it belongs, was not a member of *Thorius*. *Cryptotriton adelos* lacks the unique subocular groove (orbitolabial groove; Taylor 1944), which intercepts the upper lip and gives a characteristic and distinctive lateral profile to the head in all known species of *Thorius* (Taylor 1940, Plate XLVII; Gehlbach 1959, Fig. 1).

All efforts to collect more specimens of *C. adelos* have been fruitless, thereby precluding additional molecular analyses that might help resolve the species' generic assignment. We therefore decided to examine the osteology of the species by using high-resolution X-ray computed tomography (CT) in an attempt to discover skeletal features that might be phylogenetically informative. Digital scans of a single adult specimen (MVZ 208582, a male, 23.8 mm snout-vent length; www.digimorph.org/specimens/Thorius_adelos) reveal a combination of characters, which while unusual for *Thorius* in some respects includes features that otherwise are unique to that genus. Furthermore, the osteology of *C. adelos* excludes it from membership in any other clade of tropical plethodontids. Accordingly, we reassign the species as follows:

***Thorius adelos* (Papenfuss & Wake 1987)**

Nototriton adelos Papenfuss & Wake 1987, p. 7

Cryptotriton adelos (Papenfuss & Wake 1987), García-París & Wake 2000, p. 58