



## A new species of *Acanthodactylus* Fitzinger 1834 (Sauria: Lacertidae) from southern Iran

NASTARAN HEIDARI<sup>1</sup>, NASRULLAH RASTEGAR POUYANI<sup>1</sup>, ESKANDAR RASTEGAR-POUYANI<sup>2</sup> & MEHDI RAJABIZADEH<sup>3,4</sup>

<sup>1</sup>Department of Biology, Faculty of Science, Razi University, 6714967346 Kermanshah, Iran.

E-mail: [heydari.ns@gmail.com](mailto:heydari.ns@gmail.com), [nasrullah.r@gmail.com](mailto:nasrullah.r@gmail.com)

<sup>2</sup>Department of Biology, Hakim Sabzevari University, Sabzevar, Iran. E-mail: [rastegarpouyani45@gmail.com](mailto:rastegarpouyani45@gmail.com)

<sup>3</sup>Evolutionary Morphology of Vertebrates, Ghent University, Ghent, Belgium

<sup>4</sup>Department of Biodiversity, Institute of Science and High Technology and Environmental Sciences, Graduate University of Advanced Technology, Kerman, Iran.

### Abstract

A new and distinctive species of lacertid genus *Acanthodactylus* Fitzinger, 1834 is described from 7 km east of Khamir Port, Hormozgan Province, southern Iran at an elevation of 30–40m above sea level (asl). Analyses of morphological characters and the comparison with other formerly known species of this genus have proven the status of this taxon as a new, distinct species. Combinations of scalation characters and distinct morphology, coloration and habitat peculiarities in calcareous mountains distinguish *Acanthodactylus khamirensis* sp.nov from all remaining species of the genus in the area. In order to show the validity of the new species, we carried out a comparative statistical analysis using 13 metric and six meristic morphological characters on all of the neighboring congeners of the new species using descriptive (one-way ANOVA) as well as multivariate analyses (PCA and DFA). The results confirm the specific status of the new taxon. Detailed information and an updated identification key for the genus *Acanthodactylus* in Iran are presented.

**Key words:** Lacertidae, *Acanthodactylus*, *A. khamirensis*, Morphology, PCA, DFA, Hormozgan, Iran

### Introduction

The family Lacertidae Öppel, 1811 encompasses approximately 280 species widely distributed in Eurasia and Africa (Arnold *et al.* 2007). Nine genera and 38 species of lacertid lizards occur in Iran (Rastegar Pouyani *et al.* 2008). One of these genera is *Acanthodactylus* Fitzinger 1834, which is Saharo-Sindian in its distribution (Anderson, 1999). More than 40 species of the genus *Acanthodactylus* are currently recognized that are mostly occurring in the Middle East, North Africa, or both (EMBL Reptile Dtabase, 2013). Of these, six species have been documented for Iran (Rastegar-Pouyani, 2003): *Acanthodactylus blanfordi* Boulenger, 1918, *A. boskianus* (Daudin, 1802); *A. grandis* Boulenger, 1909; *A. micropholis* Blanford, 1874; *A. nilsoni* Rastegar-Pouyani, 1998 and *A. schmidti* Haas, 1957. Several new species of the genus *Acanthodactylus* have recently been described (Arnold 1983, 1986b, 1986c; Geniez & Foucart, 1995; Rastegar-Pouyani, 1998; Baran *et al.* 2005; Trape *et al.* 2012). The genus *Acanthodactylus* has been studied in different aspects of biology so far. Some of these studies include the seasonal differences in metabolic rate in *Acanthodactylus boskianus* for adaptation to staying active in harsh seasons (Zari, 1996), analysis femoral gland secretions in different sexes and different ages in *Acanthodactylus boskianus* (Khannoon *et al.* 2011), and considering hepatotoxicity and liver pathology in *Acanthodactylus scutellatus* in gas and oil fields pollutant areas (Al-Hashem, 2011). Attractiveness of the genus in biological studies seems to be due to the presence of great diversity in its morphology, phylogeny, behavior and ecology. Complex relationships either inter or intraspecific, make this genus an appropriate case study for understanding evolutionary patterns. Lacertid lizards of the genus *Acanthodactylus* Fitzinger, 1834 inhabit dry and desert zones of North Africa and southwest Asia. The most comprehensive studies on the genus in a time sequence are Boulenger (1921),