



Genetic and morphological differentiation of Mosor rock lizards, *Dinarolacerta mosorensis* (Kolombatović, 1886), with the description of a new species from the Prokletije Mountain Massif (Montenegro) (Squamata: Lacertidae)

KATARINA LJUBISAVLJEVIĆ¹, OSCAR ARRIBAS², GEORG DŽUKIĆ¹ & SALVADOR CARRANZA^{3,4}

¹Department of Evolutionary Biology, Institute for Biological Research “Siniša Stanković”, Bulevar Despota Stefana 142, 11060 Belgrade, Serbia. E-mail: ljka@ibiss.bg.ac.yu; georg@ibiss.bg.ac.yu

²Avda. Francisco Cambó 23, E-08003 Barcelona, Spain. E-mail: oarribas@xtec.cat

³Departament de Biologia Animal, Universitat de Barcelona, Av. Diagonal 645, E-08028 Barcelona, Spain. E-mail: scarranza@ub.edu

⁴Corresponding author

Abstract

A new species of lacertid lizard of the genus *Dinarolacerta* is described from the Prokletije Mountain Massif, Montenegro. This new species, *Dinarolacerta montenegrina* **sp. nov.**, is characterized by its relatively small size, by usually having only one postnasal scale on one or on both sides of the head, a relatively lower number of temporal and postocular scales and a relatively high number of ventral scales. Osteologically, it is mainly characterized by the complete absence of the anteromedial process in the postocular bone, and more reduced supraocular osteoderms. The phylogenetic analysis using partial sequences of the mitochondrial 12S rRNA gene supports the specific status of *D. montenegrina* **sp. nov.** and shows that it represents an old independent lineage that separated from its sister species, *D. mosorensis*, in the late Miocene. The Morača river canyon may have acted as a geomorphological and climatic barrier causing the speciation between the two species of *Dinarolacerta*.

The discovery of this new species endemic to the Balkan Peninsula highlights the importance of the Dinarides as one of the main European hotspots of biodiversity. This high level of endemism in the Dinaric region is probably the result of both its geographic situation and its complex geological history and morphology.

Key words: Phylogeny, Balkan Peninsula, taxonomy, evolution, mitochondrial DNA

Introduction

The Balkan Peninsula is a biodiversity hotspot with high numbers of endemic plants and animals (Gaston & David 1994). This high level of endemism is the result of its geographical location and the complex geological history of this area which, together with the drastic climatic changes during the Cenozoic, produced the expansion, fragmentation, and secondary contact of populations (Kryštufek & Reed 2004; Džukić & Kalezić 2004). As in many other speciose areas in Europe, mountains have played an important role in the Balkan Peninsula, promoting speciation by fragmenting the species ranges and by creating altitudinal clines, where species have been able to adapt and differentiate (Hadži 1935; Matvejev 1961; Arnold 1981; Arribas & Carranza 2004).

The Mosor rock lizard, *Dinarolacerta mosorensis* (Kolombatović, 1886) is the only recognized species of the Balkan endemic genus *Dinarolacerta*. This genus has been recently proposed by Arnold *et al.* (2007) to recognize this old lineage of lacertid lizards based on its genetic, morphological, osteological and karyological distinctiveness. *Dinarolacerta mosorensis* is mainly restricted to the southwestern Dinaric mountain karsts