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Systematics and biogeography of *Hemidactylus homoeolepis* Blanford, 1881 (Squamata: Gekkonidae), with the description of a new species from Arabia

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Abstract

A new species of gecko of the genus *Hemidactylus* (Squamata: Gekkonidae) is described from Oman and extreme eastern Yemen. *Hemidactylus minutus* **sp. nov.** is characterized morphologically by its very small size, being the smallest *Hemidactylus* in mainland Arabia, absence of enlarged tubercles anywhere on the body, expanded subcaudal scales beginning some way from tail base, number of preanal pores, number of lamellae under the first and fourth toes, and weakly contrasted black and white banded pattern on the ventral part of tail. It is also genetically distinct from *H. homoeolepis* to which it has previously been referred, and from all other closely related *Hemidactylus* from the arid clade in DNA sequence data for mitochondrial (12S, cyt *b*, ND4) and three nuclear (RAG1, MC1R, c-mos) markers. An adult female from southern Yemen and a badly preserved juvenile from southwestern Saudi Arabia previously assigned to *H. homoeolepis* are morphologically differentiated from this species and from *H. minutus* **sp. nov.** and temporarily referred to as *Hemidactylus* sp. 12 and *Hemidactylus* sp. 13, respectively until more specimens are collected and analyzed.

Up to now, *H. homoeolepis* was the only non-endemic native species of the Socotra Archipelago. With the description of *H. minutus* **sp. nov.**, all native reptile species of Socotra are now endemic, such that this archipelago has one with the highest number of endemic reptiles in relation to its small size. In addition, as a result of our taxonomic change, the area of occupancy and extent of occurrence of *H. homoeolepis* have changed dramatically and thus its conservation status should be updated. Although *H. minutus* **sp. nov.** seems widely distributed and relatively abundant, its conservation status should also be re-evaluated.

Key words: gecko, DNA, morphology, taxonomic revision, Socotra, Oman

Introduction

The genus *Hemidactylus* Oken, 1817 currently consists of 124 named species distributed across all tropical and subtropical continental landmasses, including hundreds of intervening oceanic and continental islands (Brogard 2005, Sindaco & Jeremčenko 2008, Uetz 2013). Although a complete phylogeny of the genus is still lacking, partial molecular phylogenies indicate that all the species analyzed to date can be assigned to four phylogenetically divergent clades: 1) the African-Atlantic clade; 2) the *H. angulatus* clade; 3) the tropical clade; and 4) the arid clade (Arnold *et al.* 2008; Bansal & Karanth 2010; Bauer *et al*. 2010; Carranza & Arnold 2006, 2012; Šmíd *et al*. 2013a,b). Recently, the arid clade has been the subject of several taxonomic revisions, which have resulted in the description of 13 new species within the last three years (Busais & Joger 2011a,b; Carranza & Arnold 2012; Moravec *et al*. 2011; Šmíd *et al*. 2013b). Now, with more than a third of all species, the arid clade is currently the most speciose of the four main *Hemidactylus* clades. Recent phylogenetic studies (Gómez-Díaz *et al.* 2012; Moraveck *et al.* 2011; Šmíd *et al.* 2013a,b), as well as field investigations carried out in previously unsampled regions of the Arabian Peninsula, including the Socotra Archipelago (which comprises four islands of continental origin situated in the Arabian Sea, near the Gulf of Aden, Fig. 1), and the Horn of Africa indicate that the diversity of the arid clade is still largely underestimated and that many new species will likely be described in the next few years (Šmíd *et al*. 2013a).

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homoeolepis have changed dramatically following our taxonomic revision and thus its conservation status should be updated (Cox *et al*. 2012, Sindaco *et al.* 2012b). The conservation status of the newly described species *H. minutus* **sp. nov.** should also be re-evaluated.

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