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A new *Emoia samoensis* group lizard (Squamata: Scincidae) from the Cook Islands, South-central Pacific

GEORGE R. ZUG[1], ALISON M. HAMILTON [2,3]& CHRISTOPHER C. AUSTIN[3]

[1]*Department of Vertebrate Zoology, National Museum of Natural History, Smithsonian Institution, Washington, District of Columbia 20013 USA. E-mail: zugg@si.edu*
[2]*Department of Ecology & Evolutionary Biology, University of California, Los Angeles, California 90095 USA. E-mail:ahamilton@ucla.edu*
[3]*Museum of Natural Science and Department of Biological Sciences, Louisiana State University, Baton Rouge, Louisiana 70803 USA. E-mail:ccaustin@lsu.edu*

Abstract

The first published report of a large treeskink from Rarotonga, Cook Islands, appeared in 1988. The first museum voucher specimen was collected in 1984. Although this skink seems likely to be a recent arrival to the island of Rarotonga, it represents a unique member of the *Emoia samoensis* species group. We compare this population with other members of the *E. samoensis* group and describe the population as *Emoia tuitarere* **n. sp.**, distinguished by a suite of external characters including SVL, number of dorsal scale rows, and number of subdigital lamellae of the fourth toe. We provide preliminary definitions for the *concolor* and *samoensis* species subgroups proposed by Brown (1991), although current molecular data do not support their monophyly (Hamilton *et al.*, 2010).

Key words: *Emoia samoensis* group, Pacific Ocean, Oceania, geographic variation, new species

Introduction

The Cook Islands were discovered and settled by Polynesians between 2000–2500 years ago [~500 BCE] (Kirch, 2000). By the time the first Europeans appeared in the early 1600s, the original fauna and flora had been altered significantly by hunting and agriculture. Steadman's studies of Pacific fossil avifaunas (2006) showed that ~50% of the native bird species disappeared soon after the arrival of the Polynesians. The original herpetofauna remains unknown other than we can be reasonably certain that seaturtles (likely *Chelonia mydas, Eretmochelys imbricata*) inhabited the local waters and used the shores for nesting. Was a terrestrial herpetofauna, specifically lizards, present or were the Cook Islands like the Hawaiian Islands denude of lizards when the first human settlers arrived? Based on the fossil records from other Pacific islands (Tonga, Guam), the potential pre-settlement lizard fauna of the Cook Islands (Table 1) was likely less diverse than the present one. Several skinks, all members of the genus *Emoia*, are components of that ancient fauna. It is possible that one might have been an *Emoia samoensis* group skink. Two large skink species occurred in the pre-settlement layer of an archeological excavation in 'Eua, Tonga (Pregill, 1993). Their identities are uncertain, although two large skinks, *E. 'trossula'* and until the 1800s *Tachygyia*, occur in Tonga. The large *Emoia* of Rarotonga, however, is probably a recent colonizer as suggested by a high level of genetic uniformity in island-wide sampling of the Rarotongan population (Hamilton *et al.*, 2010).

Two other pieces of evidence for the absence of *E. 'samoensis'* in the pre-Polynesian fauna are 1) its absence from other islands in the Cook group and 2) the recency of vouchers from the Cooks; however, neither separately nor together do these facts provide conclusive proof. While miscellaneous European and American biological exploring expeditions visited the Cook Islands, there are no published biodiversity inventories of all Cook Islands. The best herpetological inventories are those of D. Steadman (1984–1985; reported in Crombie and Steadman, 1986) and G. McCormack (Cooks Island Biodiversity Database, Version 2007.2; http://cookislands.bishopmuseum.org). Both of these naturalists report an *E. 'samoensis'* skink from Rarotonga but nowhere else in the Cook

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