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A new *Nactus* gecko (Gekkonidae) and a new *Leiolopisma* skink (Scincidae) from La Réunion, Indian Ocean, based on recent fossil remains and ancient DNA sequence

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Abstract

Two new lizards from La Réunion island, southwest Indian Ocean, are described on the basis of fragmentary subfossil material, and their distinctiveness and relationships are confirmed from ancient mitochondrial DNA extracted from these remains. The gecko *Nactus soniae* **n. sp.** is related to *N. coindemerensis* of Mauritius, while the skink *Leiolopisma cecil-iae* **n..sp.** .has affinities with *L. telfairii* and *L. mauritiana* from the same island. As with other La Réunion reptiles known to date, mitochondrial DNA phylogenies indicate that both the new forms colonized this island from Mauritius. Molecular clock considerations suggest that colonisations took place over 1My ago and that the new species, together with *Phelsuma* day geckos, survived the massive volcanic eruptions that took place on La Réunion 180000-230000 years ago.

Key words: *Nactus, Leiolopisma,* La Réunion, ancient DNA, cytochrome b, 12S rRNA

Introduction

La Réunion lies some 500km East of Madagascar and is one of the three Mascarene islands, the others being Mauritius 200km to the northeast of La Réunion, and Rodrigues 900km to the east. La Réunion was colonised by people only in the second half of the Seventeenth century (Cheke, 1987), but much of its original vertebrate fauna of reptiles and birds is now extinct. Just three native reptile species survive: the endemic day geckos, *Phelsuma borbonica* and *P. inexpectata* (Austin et al., 2004) and the small lygosomine skink *Cryptoblepharus boutonii*. A giant tortoise, *Cylindraspis indica* (possibly including *C. borbonica* Bour, 1980—see Austin and Arnold, 2001, Austin et al., 2002) occurred perhaps as late as the mid-1800s (Bour, 1981) and a chalcidine skink, *Gongylomorphus bojeri borbonicus* became extinct around the same time, having last been collected in 1839 (Cheke, 1987). A further skink, similar to the lygosomine *Leiolopisma telfairii* of Mauritius, has been recorded from recent fragmentary fossil remains, collected by Graham S. Coles in a cave near St Paul, on the west coast of La Réunion (Arnold, 1980; Cowles, 1987). Here we report more fossils that provide further information about this skink and also include a night gecko, *Nactus,* which again turns out to be similar to Mauritian species. Mitochondrial DNA sequence recovered from the fossils confirm morphological indications of the generic allocation of the two forms and confirm that they deserve species status (Austin and Arnold, 2006, unpublished data).

The new material comes from coastal caves near sea level on the west side of La Réunion. Most is from the Grotte au Sable, south of the town of St-Gilles, and was excavated by R. Bour and F. Moutou (in 1980),

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