

The genus *Nactus* (Lacertilia: Gekkonidae): a phylogenetic analysis and description of two new species from the Papuan Region

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Abstract

Two new geckos from islands off the southeastern tip of New Guinea are not readily assignable to any currently defined genus but appear closely related to *Nactus*. The defining features of *Nactus*, however, have been uncertain because of variation among species assigned to this group, character convergence with other genera, and varying character emphases of different researchers. Moreover, relationships of *Nactus* to other gekkonine genera are uncertain because of homoplasy among the few characters used to infer higher-level relationships within Gekkoninae. I performed an analysis of phylogenetic relationships of my two new species to members of *Nactus* using a variety of other gekkonine and diplodactyline genera as outgroups. The results indicate the two new species are derived members of the genus *Nactus* that have undergone evolutionary reversal of some of the characters previously used to distinguish this genus. A further result of my analyses is that *Nactus* as currently conceived may prove paraphyletic or polyphyletic because its two most morphologically divergent species fail to cluster with the remaining members of this genus in all analyses. The two new species are herein described as *Nactus sphaerodactylodes* sp. nov. and *Nactus acutus* sp. nov. and may readily be distinguished from the other members of the genus by a variety of scalational features.

Keywords: lizard, gecko, Papua New Guinea, Louisiade Islands, Woodlark Island, phylogenetics

Introduction

Geckos referred to the large subfamily Gekkoninae were split into two groups by Kluge (1983) on the basis of presence or absence of the second ceratobranchial arch. The absence of the second arch was interpreted as a derived loss and used to diagnose a new tribe Gekkonini. Those gekkonines retaining elements of the second ceratobranchial arch were interpreted as a paraphyletic assortment of basal genera informally referred to, for convenience, as “ptyodactylines” and placed *incertae cedis* in the Gekkoninae. The