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NOTA BREVE / BRIEF NOTE

THE ENDANGERED SPECIES *Aristelliger georgeensis*
(SQUAMATA: SPHAERODACTYLIDAE) IN RONCADOR CAY,
COLOMBIAN CARIBBEAN

La especie amenazada *Aristelliger georgeensis* (Squamata:
Sphaerodactylidae) en el Cayo Roncador, Caribe colombiano

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ABSTRACT

Aristelliger georgeensis, previously known to occur in the Yucatan peninsula (Mexico), the coasts and islands from Belize and Honduras, and the oceanic islands of Colombia in the Caribbean (San Andres, Providence and Saint Catalina) was registered for the first time in Roncador Cay, a flat and small island of coralline origin, located in the southwest of the Caribbean. Being considered as an endangered species at the national level, the new locality for this gecko constitutes an opportunity for its conservation. Some topics regarding the possible origins of this new population are discussed. This new locality represents the eastern most documented record of this species so far.

Keywords: Conservation, new locality, Saint George Island Gecko.

RESUMEN

Aristelliger georgeensis, previamente conocido de la península de Yucatán (México), las costas e islas de Belice y Honduras y de las islas oceánicas de Colombia en el Caribe (San Andrés, Providencia y Santa Catalina), fue registrado por primera vez en el Cayo Roncador, una isla plana y pequeña de origen coralino, ubicada en el suroccidente del Caribe. Siendo considerada como una especie amenazada a nivel nacional, la nueva localidad para este gecko constituye una oportunidad para su conservación. Se discuten algunos tópicos relacionados con el posible origen de esta nueva población. Esta nueva localidad representa el registro documentado más al Este para la especie.

Palabras clave: Conservación, gecko pestañado, nueva localidad.

Aristelliger georgeensis (Bocourt, 1873), known from Colombia in the San Andres, Providence and Saint Catalina archipelago as the Screeching Lizard, is a species of the Sphaerodactylidae family, with a distribution covering the Caribbean regions from the Yucatan peninsula in Mexico throughout Belize coasts and Honduras (some islands included) to the oceanic islands of Colombia (Bauer and Russell, 1993; Reptile-database.org, 2015). Its common

name in English is Saint George Island Gecko, making reference to the locality type, an island near Belize. It is a species restricted to the Caribbean, with presence in small size islands and coasts with coralline-origin formations. This gecko is considered endangered (category EN B1 + 2bc) at the national level in Colombia, because it is restricted to small, fragmented and constantly decreasing areas of the country's oceanic islands in addition to some rejection

from the human population (Castro-Herrera, 2002). Its presence in Colombia has only been registered in the San Andres, Providence and Santa Catalina islands. Here we report for the first time this species in one of the oceanic cays of coralline origin, located in the easternmost point of the known distribution for this gecko.

Observations were made at the night on March 24th of 2014, covering all the Roncador Cay (13°34' N, 80°05' W), which is located 140 km east of Providence Island (the nearest location where *A. georgeensis* was previously registered). An intensive search included the National Navy facilities, sandy beaches of coralline origin, beaches with coralline rubble of different sizes, internal plains of the cay where big massive and ramified coral blocks prevail, sectors with creeping and shrub-like vegetation [i.e., *Sesuvium portulacastrum* Linnaeus, 1753, *Ipomoea pescaprae* (L.) Brown,

1818, and *Suriana maritima* Linnaeus, 1753], sectors of scattered coconut trees (*Cocos nucifera* Linnaeus, 1753) and sectors of few red mangle trees (*Rhizophora mangle* Linnaeus, 1753). In three hours of search, twenty individuals of *A. georgeensis* were observed, most of them gathering on or among the coral rubble (Fig. 1). None of the individuals were observed on the sandy plains or in the Navy facilities.

The colonization of a cay of such a small size and so remote location could be explained by: 1) a natural dispersal event in which some individuals arrived to Roncador on floating objects (i.e., vegetation), coming from other islands of the western Caribbean or the mainland (Honduras, Belize, Mexico). Geckos are known to possess several characteristics that favor their dispersal across sea gaps (e.g., geckos cling to moving structures, can survive long periods without food, can storage food reserves in the tail, do not

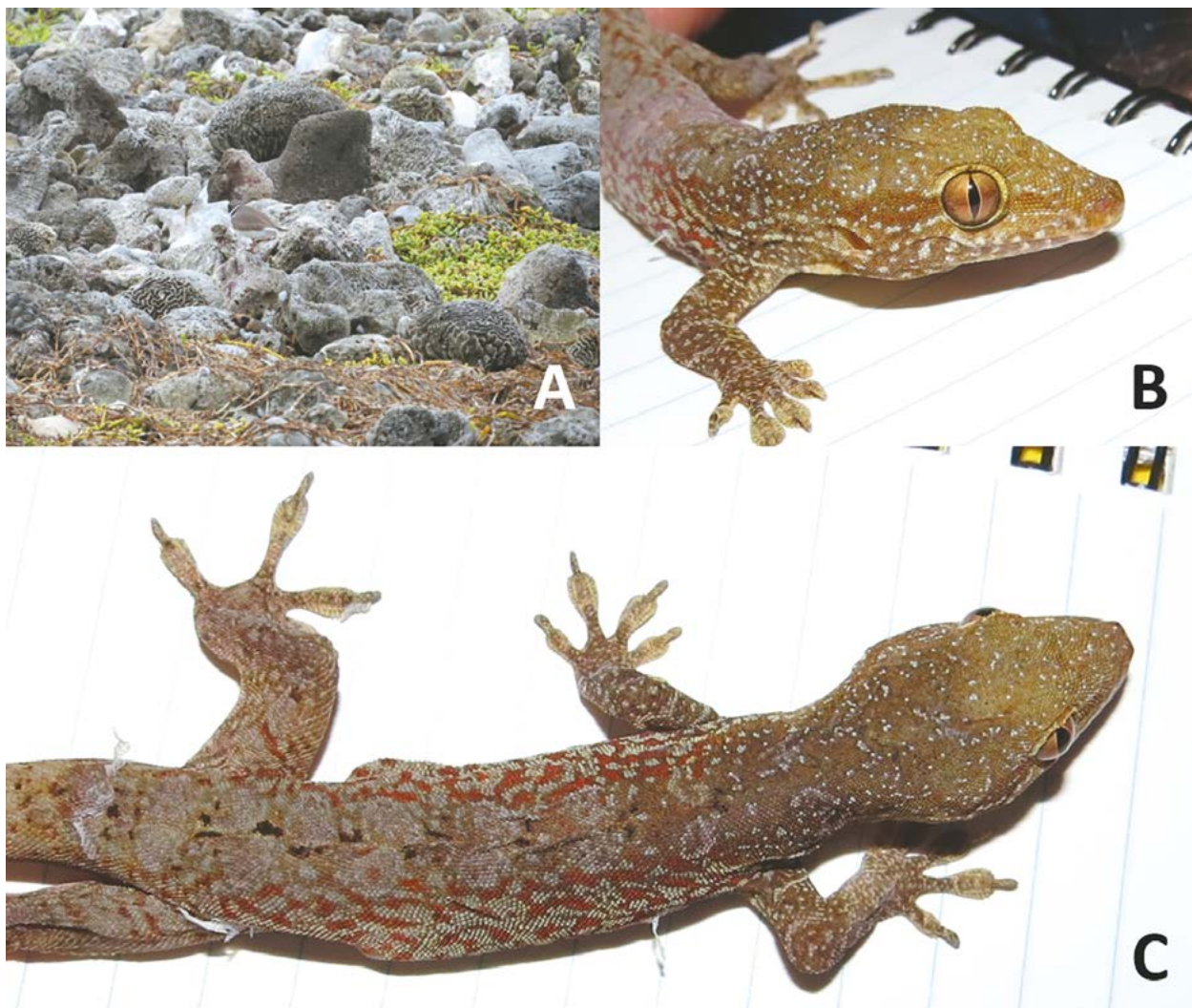


Figure 1. An individual of *Aristelliger georgeensis* in Roncador Cay. **A.** Showing the sector of the cay covered by big coral rubble where the gecko was found, **B.** Detail of the head in lateral view, **C.** Dorsal view.

require permanently free water sources, their skin is relatively impermeable to uptake of salts from the sea, and can survive long periods of exposure to sea water ([Kluge, 1969], or 2) the species has been recently introduced by human activities, as occurred in the same way with other lizards in the Great Caribbean (e.g. Helmus *et al.*, 2014). The Colombian Navy staff makes monthly changes of the guard in these oceanic cays, where they have military facilities and carries out, with some periodicity, repairs and constructions on them. Food and construction materials come in the cays during these operations, transported by ships set sailing from the San Andres Island and alternatively from Providence.

During an intensive search at night in Serrana Cay (April 5th, 2014), other cay of similar size of Roncador, located 145 km northeast from Providence Island and where there is also a military facility, none of such gecko was found. It is worth noting that Serrana Cay differs from the Roncador Cay because the former cay is formed mainly by sandy soil while in Roncador there are a lot of coralline rubbles and hard surfaces (Fig. 1).

Being this lizard included among the endangered species category in Colombia, it is critical to identify the best explanatory hypothesis regarding its presence in Roncador: dispersal or introduction. Conducting a genetic study using a phylogeographic approach would disentangle these two explanations. As anthropogenic introductions are recent (decades in this case), the genetic divergence from source populations would be minimal. On the other hand, stochastic events such as natural dispersal will lead to more genetic variation as events may have occurred long time ago (Gamble *et al.*, 2011). If introduction is the best explanation, it is then necessary to determine whether its presence in this island constitutes an opportunity for settling a stable population with some relevance for its conservation. This would imply that Roncador would become an alternative of another location in Colombia for this endangered species. This of course does not take into account whether or not this gecko has already fit in the food web and trophic dynamics of the island, as predator of small invertebrates or as prey of other taxa (i.e., birds and terrestrial crabs).

Species introduction became a constant in the Caribbean islands, at the point that all biogeographic dynamics on the herpetofauna should be reviewed, taking into account those introduction processes (Helmus *et al.*, 2014), because in some cases such introductions reach or surpass the local extinction rates (Sax *et al.*, 2000) and with this, diversity patterns are affected. From a conservation perspective, it is urgent to eradicate the exotic populations of the Golden Tegu (*Tupinambis teguixin*) in San Andres to protect the populations of native vertebrates on this island (Rueda-A, 1999). Tegu lizards were introduced in San Andres since 1975 (Pacheco, 2012). In addition, *Hemidactylus frenatus*, another gecko species from Asian origin and nowadays

worldwide introduced, appears to be a potential competitor of *A. georgeensis* in San Andres and Providence (Caicedo-Portilla and Dulcey-Cala, 2011). In contrast, in Roncador Cay there is no major predators on *Aristelliger*, no individuals of *Hemidactylus* were found, and there seems to be sufficient microhabitats to maintain a stable population of the Screeching Lizard. Colombian authorities should improve control measurements to prevent Navy personnel, occasional tourists and fishermen to accidentally bring alien species into Roncador Cay.

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