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**Martha M. Muñoz, Anthony Herrel, Kristen Crandell, & Mahmood Sasa**

## **Natural history of aquatic anoles from Costa Rica and Panamá**

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There are five known species of mainland aquatic anoles, four of which are located in Costa Rica (*Anolis aquaticus* and *A. oxylophus*) and Panamá (*A. lionotus* and *A. poecilopus*). Relatively little is known about the natural history, morphology, and performance characteristics of these anoles. In the summer of 2008, along with a team of great field assistants, we collected data on habitat preference, behavior, morphology, and jumping and clinging performance for both Costa Rican species.

While perch dimensions did not differ between *A. aquaticus* and *A. oxylophus*, we did find significant differences in substrate preference. Specifically, we found *A. aquaticus* in rockier habitat than that used by *A. oxylophus*, which contained a broad variety of perch types. This species perches on rocks more than any other substrate, even those that are in greater abundance, such as leafy vegetation. In contrast, the habitat for *A. oxylophus* is composed mainly of leafy vegetation, but this species prefers a wide variety of substrates, including those that are less common, such as logs.

Because *A. aquaticus* utilizes rough surfaces like rocks as perches, it cannot rely entirely on its expanded toepads for clinging. However, there are no significant differences in claw morphology, including sharpness, length, or depth, between the two species that would suggest that *A. aquaticus* is more adept at clinging to rough surfaces than is *A. oxylophus*. Furthermore, although *A. aquaticus* possesses longer hindlimbs than does *A. oxylophus*, it is the slower runner of the two species. *A. oxylophus* possesses broader toepads, which may aid in better clinging and, therefore, running on a broad, smooth surface such as the dowels we used in our sprinting trials. In general *A. aquaticus* has relatively longer limbs and a longer jaw than *A. oxylophus*. The longer lower jaw translates into a more powerful bite, and may reflect differences in diet between the two species.

In the summer of 2009, we collected similar data for *A. lionotus* and *A. poecilopus*, the two Panamanian aquatic anoles. We are currently assembling and organizing the complete dataset for all four species in our study.