

***Iguana iguana*. Predation by Tayras (*Eira barbara*).** Green Iguanas are the largest lizards in Central America, reaching a total length of 2 m and a weight of 4 kg (Savage, 2002). These herbivorous and frugivorous lizards are ecologically plastic and fairly abundant in their habitats, and their large size and active foraging behavior make them easy to locate by predators. Many mammal, bird, and reptile species prey on the eggs and different age classes of *I. iguana* (Greene et al., 1978), and this lizard also an important dietary component of many human communities (Savage, 2002).

On 13 December 2008, one of us (RO) witnessed a predation attempt by two Tayras, *Eira barbara* (Mammalia: Mustelidae), on an *I. iguana* at Earth University, Provincia de Limón, Costa Rica (10°12'49"N, 83°35'12"W; WGS 84), elev. 40 m. An adult male *I. iguana* had jumped or fallen from a tree, and quickly was pursued by two young *E. barbara*. The mustelids evidently were attracted by the sound of the falling animal, and chased the iguana for about 20 m until they cornered it along a creek (Fig. 1). At first, the *Eira* seemed puzzled as to what to do with the large reptile, but eventually one of them bit the lizard on the head and neck (Fig. 2), and soon after the other began to concentrate on the tail (Fig. 3). Excited from the chase, and perhaps stimulated by the taste (or scent) of blood, the Tayras began to make guttural noises and appeared to lose interest in their surroundings. The trio struggled for a while, partially in the water, but at a certain point the *Iguana* liberated itself and with a burst of speed escaped, as the young *Eira* appeared confused. The photographs were taken by RO ca. 10 m from the scene, and at times the *Eira* acknowledged his presence by exposing their teeth and growling. The episode lasted about 10 minutes.

Galef et al. (1976) reported on a predation event involving an adult Tayra and a Green Iguana at Barro Colorado Island, Panama. In eastern Colombia, Tayras are known to hunt in pairs around the base of large trees, and to attack *Boa constrictor* of considerable size (Defler, 1980).



Fig. 1. Two young Tayra (*Eira barbara*) pursue and begin to examine an adult male *Iguana iguana*.



Fig 2. One of the Tayras bites the *Iguana* on the head, before biting its neck.



Fig 3. The second Tayra joins in, concentrating and biting the tail of the *Iguana*.

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***Norops woodi*. Predation by a Red-headed Barbet (*Eubucco bourcierii*).** Anoles often are preyed by birds classified in several different taxonomic families (Poulin et al., 2001; Cantwell and Forrest, 2013). Many of these predators are insectivorous and/or frugivorous bird species, and the frequency with which they prey on anoles varies from site to site (e.g., islands), season of the year (e.g., dry season), food abundance, and prey availability (Wunderle, 1981; McLaughlin and Roughgarden, 1989; Aborn and Froehlich, 1995; Pérez-Rivera, 1997; Poulin et al., 2001; Lopes et al., 2005; Losos, 2009; Cantwell and Forrest, 2013; Sandoval-Comte et al., 2014). Moreover, predation by small birds on herpetofauna frequently is considered an opportunistic interaction, because it requires great effort (Pérez-Rivera, 1997; Acosta and Morún, 2014). Here we present predation information upon a *Norops woodi*, an anole from the highlands of Costa Rica and western Panama whose natural history remains little known (Savage, 2002), by a barbet (*Eubucco bourcierii*) that inhabits the same elevational belt and habitat (Stiles and Skutch, 1989). We also report the use of the dewlap by the anole as a possible visual advertising signal against a potential predator in field conditions.

On 17 March 2014, on a trail to Cerro Chirripó (Canton de Pérez Zeledón, Provincia de San José, Costa Rica (9°27'N, 83°33'W; WGS84), elev. ca. 1,500 m, we observed a mixed flock of birds containing Red-headed Barbets (*Eubucco bourcierii*) foraging. We then saw a male barbet attacking a male *N. woodi* by striking the lizard's head against a branch (ca. 4 m in height) with its beak. The anole was displaying its dewlap (extending and retracting it) prior to and during the attack. After struggling for at least 10 minutes both animals fell to the ground, where the barbet killed and ingested the anole (Fig. 1). The capture behavior, subjugation, and consumption of the anole was similar to that reported for other songbirds and small non-passerine birds on other herpetofauna (Hendricks and Hendricks, 2002; Sandoval et al., 2008; Acosta and Morún, 2014; Sandoval-Comte et al., 2014).

Information on the display behavior of anoles is lacking in most descriptions of bird attacks (Van Riper et al., 1979; Aborn and Froehlich, 1995), and we hypothesize that *N. woodi* sent a signal either to the barbet (e.g., indicating that the predator has been detected) or to conspecifics (e.g., indicating eminent attack). The use of visual signals at the presence of opportunistic predators with sharp vision (Leal, 1999), such as small birds, may be a stereotypic response of anoles to predation attempts by birds (Aborn and Froehlich, 1995; Pérez-Rivera, 1997). For example, Leal (1999) reported similar behavior in *Anolis cristatellus* using predator models under controlled conditions. Also, anoles are capable of identifying common and opportunistic avian predators, which likely reduce the probability of successful attacks by birds (Leal, 1999; Cantwell and Forrest, 2013). Despite this fact, attacks on anoles may occur with relative frequency since barbets and similar-sized birds can consume meat, arthropods, and small vertebrates (Ripley, 1945; Sandoval-Comte et al., 2014).