FIG. 1. *Ameivula nigrigula* being consumed by *Lasiodora* sp., Bahia, Brazil.

On 30 November 2017, we observed an adult *Lasiodora* sp. preying on a juvenile *A. nigrigula* in a semiarid area of Itaguaçu da Bahia municipality, in the state of Bahia, Brazil (10.95781°S, 42.38490°W; SAD 69). When first observed, the specimen of *A. nigrigula* was approximately 50% digested, initiated by the head (Fig. 1). Our survey was part of the faunistic monitoring program of UFV Assuruá (license INEMA nº 8598).

ANDRÉ KAUFER LEITE (e-mail: akleite@gmail.com), **MARCELO ALVES DIAS**, and **MOACIR SANTOS TINÔCO**, Lacerta Consultoria, Projetos & Assessoria Ambiental LTDA, Av Tancredo Neves, 939 - s-1305, Caminho Árvores, Salvador, Bahia, Brazil; Centro de Ecologia e Conservação Animal, Universidade Católica do Salvador, Av. Prof. Pinto de Aguiar, 2589, 41740-090, Pituaçu, Salvador, Bahia, Brazil.

***ANDINOSAURA OCULATA* (Tropical Lightbulb Lizard). PREDATION.** Predation of lizards by birds has been well documented and appears to be a common phenomenon in the neotropics (Poulin et al. 2001. J. Trop. Ecol. 17:21–40). It has been suggested that various raptors are significant sources of predation of lizards (e.g., Ferguson-Lees and Christie 2007. Raptors of the World. Hougton Mifflin Company. Boston, Massachusetts.. 320 pp.; Köning and Weick 2008. Owls of the World. Yale University Press, New Haven, Connecticut. 528 pp.). *Andinosaura oculata* is small lizard, 88 mm max SVL (Kizirian 1996. Herpetol. Monogr. 10:85–155) endemic to northwestern Ecuador, and is found mainly in montane cloud forest in the Choco region (Kizirian, *op. cit.*). Its natural history is poorly known and information about predators is unknown.

On 1 July 2016 at 1654 h during fieldwork at Mindo Reserve, province of Pichincha, Ecuador (0.081977°S, 78.764208°W, WGS 84; 1432 m elev.), we found a *Glaucidium jardinii* (Andean Pygmy Owl) perched on a tree 15 m high and holding an adult *Andinosaura oculata* in its talons. *Glaucidium jardinii* typically feeds on other birds (Ridgely and Greenfield 2001. The Birds of Ecuador: Field Guide. Cornell University Press, Ithaca, New York. 740 pp.). This is the first record of predation on *A. oculata* and any other lizard by Andean Pygmy Owl.

We are grateful to Michelle Vela for field assistance and Gabriela Echeverría Vaca for her help with the bird identification.

MANUEL R. DUEÑAS, Fundación Herpetológica Gustavo Orcés, Av. Amazonas 3008 y Rumipamba, Casilla 17 03 448, Quito, Ecuador and División de Herpetología, Museo Ecuatoriano de Ciencias Naturales, Instituto Nacional de Biodiversidad, Calle Rumipamba 341 y Av. de los Shyris, Casilla: 17-07-8976, Quito, Ecuador (e-mail: duenastmanuel@hotmail.com); **JORGE H. VALENCIA**, Fundación Herpetológica Gustavo Orcés, Av. Amazonas 3008 y Rumipamba, Casilla 17 03 448, Quito, Ecuador (e-mail: jorgehvalenciav@yahoo.com).

FIG. 1. *Andinosaura oculata* being preyed upon by *Glaucidium oculata* in Mindo Reserve, Pichincha, Ecuador.

***ANOLIS AQUATICUS* (= *NOROPS AQUATICUS*) (Water Anole). UNDERWATER BREATHING.** Many lizard species use water to escape from threats. Some lizard species swim, either remaining at the surface or diving. Others may use foot-slapping to run over water, surface tension to stay afloat (Hernández-Vázquez 2018. Herpetol. Rev. 49:535), or a combination of the two (Nirody et al. 2018. Curr. Biol. 28:1–6). *Anolis aquaticus* (= *Norops aquaticus*) is a mid-sized semi-aquatic lizard (SVL = 52–77 mm) found in Costa Rica and Panama (Márquez and Márquez 2009. Boletín Técnico Serie Zoológica 8:50–73). *Anolis aquaticus* uses a combination of surface swimming and diving when threatened, jumping from the banks and boulders of its riparian habitat into streams. Once in the water, *A. aquaticus* may swim for a short distance (up to a few meters), or may be carried farther downstream by the current. Anecdotes and my own observations suggest that diving and remaining underwater in an extended dive is an effective antipredator strategy employed by *A. aquaticus*.

Observations on the diving behavior of *A. aquaticus* were made opportunistically in the field in conjunction with other research on this species during June, July, and August of 2015,

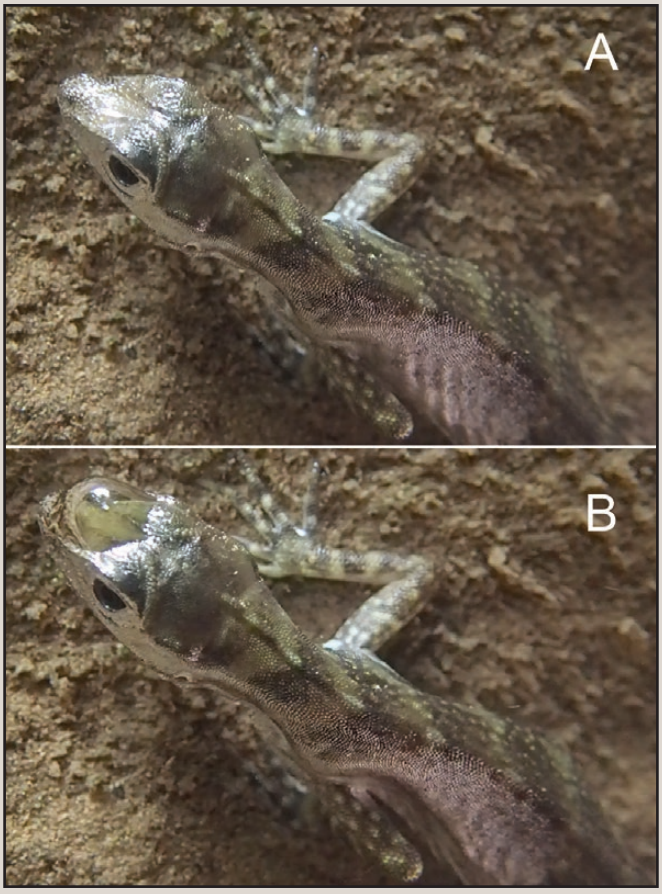

FIG. 1. (A) Inhalation and (B) exhalation of an air bubble by a diving *Anolis aquaticus*.

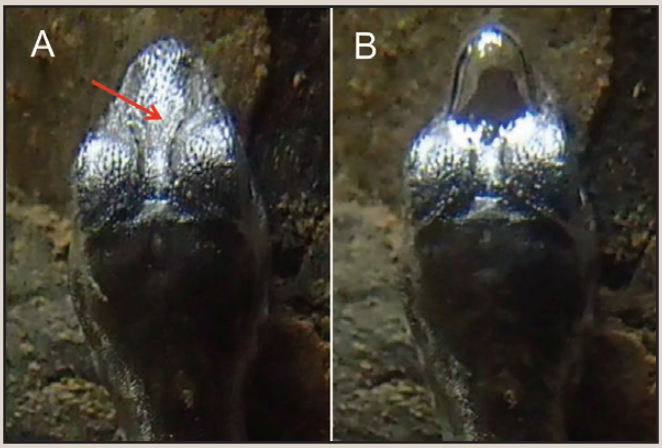

FIG. 2. Dorsal view of an *Anolis aquaticus* head during underwater (A) inhalation, with approximate center of the forthcoming air bubble indicated by the red arrow, and (B) exhalation. Note the edges of the air bubble clinging to the anterior portions of ridges above the eyes.

2016, and 2018 in Coto Brus, Puntarenas, Costa Rica. During this time, I estimate ca. 600 *A. aquaticus* individuals were located and/or processed at three different sites, many of which attempted a water escape upon our field crew's approach. I consequently observed numerous dives with long durations, with the longest recorded dive being ca. 16 min (adult male *A. aquaticus*, July 2015; the subject resurfaced when physically disturbed by the field crew). All diving observations were made in the field

FIG. 3. An adult *Anolis aquaticus* photographed during a dive with an air bubble exhaled to its greatest extent.

following minimal or no handling and manipulation, between 0900 and 1600 h. Once perched underwater, *A. aquaticus* moved infrequently when being observed by our field crew or when filmed, and they tended to select underwater perches that were not in direct line of a strong current.

While filming *A. aquaticus* dives, I observed that all subjects appeared to respire while underwater: their midsections expanded (Fig. 1A) and contracted (Fig. 1B), while an air pocket near their nostrils shrunk and grew, respectively. The air pocket's "bubble" was centered within a depression in the snout that was posterior to the nostrils (Fig. 2A), and the bubble's edges clung to ridges along the eyes and either side of the snout (Fig. 2B). The bubble portion of the air pocket was connected continuously to a thin film of air that extended around the anole's head, eyes, and ears and, in some instances, possibly farther down the body. Air bubble size was proportionally large, with the exhaled air bubble being about as tall as the height of the head (Fig. 3). Most air pockets were recycled, being inhaled and exhaled repeatedly, though a few lost contact with the body's surface. Apparent respiration was occasionally accompanied by an adjustment of the head and throat that resembled a "swallowing" motion. For a video of *A. aquaticus* underwater breathing, please visit https://youtu.be/gDwqWAv1RO4.

Though untested, it is possible that *A. aquaticus* use recycled air from the air pockets clinging to their body surfaces to enable them to respire underwater. This method of respiration would be similar to bringing a "scuba tank" for extended dives. As *A. aquaticus* dives might last a considerable length of time, as can the dives of other semi-aquatic anoles such as *A. oxylophus*, the benefit of such an adaptation is clear. However, although I note that a given air pocket is inhaled and exhaled repeatedly, it is unknown whether *A. aquaticus* extracts any useable amount of oxygen by repeatedly recycling this air. An alternative explanation may be that inhalation and exhalation is simply a carried-over reflex from this lizard's terrestrial physiology. That said, a carried-over reflex for underwater inhalation seems intuitively maladaptive for the majority of air-breathing organisms, and therefore I propose the "scuba tank" explanation and encourage further study.

LINDSEY SWIERK, Department of Biological Sciences, Binghamton University, State University of New York, Binghamton, New York, USA; e-mail: lindseyns@gmail.com.