

ODONTOPHRYNUS CARVALHOI (Carvalho's Escuerzo). **EYE MALFORMATION.** *Odontophrynus carvalhoi* is an explosive breeder inhabiting open fields amidst lotic and lentic environments with herbaceous vegetation at high altitudes in north-eastern Brazil (Lisboa et al. 2010. Check List 6:493–494; Costa et al. 2017. Bol. Mus. Biol. Mello Leitão 39:95–115). Abnormalities reported for Brazilian anurans include a variety of chromatic aberrations (Souza et al. 2021. Herpetol. Notes 14:31–41), and a case of anophthalmia in a dead *O. carvalhoi* (Brito et al. 2011. Herpetol. Bull. 118:38–40). Abnormalities may hinder anuran development causing early mortality. Nevertheless, herein, we present a record of a female *O. carvalhoi* in amplexus with an eye opacity resembling a cataract (Fig. 1). The observation occurred during fieldwork on 1 April 2019, in the Baturité massif, Municipality of Guarimiranga, northeastern Brazil (WGS 84, 4.27044°S, 38.93858°W; WGS 84; 912 m elev.). This abnormality was classified according to Meteyer (2000. Field Guide to Malformations of Frogs and Toads: with Radiographic Interpretations. Biological Science Report USGS/BRD/BSR-2000-005, U.S. Department of the Interior, U.S. Geological Survey. 16 pp.). The voucher specimen was deposited in the Herpetological Collection of Universidade Regional do Cariri (URCA-H 16041), Crato, Brazil. Although similar eye opacities have been reported for tadpoles, attributed to intraocular infections (Kelehear et al. 2011. Herpetologica 67:378–385), we present the first record for an adult *O. carvalhoi*. Although morphological abnormalities affect few individuals in nature (Lannoo 2008. The Collapse of Aquatic Ecosystems: Malformed Frogs. University of California Press, Berkeley, California. 288 pp.), for example less than 2% of individuals (Ascoli-Morrete et al. 2019. Austral Ecol. 44:1025–1029), cases of amphibian abnormalities may be on the rise. In addition, in Brazil, the causes of most of the rapid declines in amphibians are still unknown (Alton and Franklin 2017. Clim. Chang. Resp. 4:1–6.). Thus, further studies investigating the increase and causes of these abnormalities are important, especially in the mountainous regions in the state of Ceará which are home to a rich and endemic amphibian fauna.

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FIG. 1. A female *Odontophrynus carvalhoi* with an eye opacity in amplexus, in the municipality of Guarimiranga, Ceará, northeastern Brazil. The right eye was normal.

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PRISTIMANTIS ACHATINUS (Cachabi Robber Frog). **PREDATION.** The anuran *Pristimantis achatinus* occurs from the lowlands of Panama through Colombia (Pacific lowlands, valleys of the Cauca and Magdalena rivers and in both foothills of the Western and Central Cordilleras) to southwestern Ecuador (Rojas-Rivera et al. 2013. Cat. Anf. Rept. Colomb. 1:35–44; Frost 2021. Amphibian Species of the World: An Online Reference. Version 6.1; <https://amphibiansoftheworld.amnh.org>; 10 May 2021). In Colombia and Ecuador, *P. achatinus* has been reported as prey for the arachnid *Heterophrynus armiger* (Wizen and González de Rueda 2016. Herpetol. Rev. 47:440–441), the viper *Bothrops asper* (Boada et al. 2005. Herpetozoa 18:77–79), and the frog *Leucostethus fraterdanieli* (Cárdenas-Ortega and Herrera-Lopera 2016. Herpetol. Rev. 47:438). Here, we report the first record of predation of *P. achatinus* by a bird, *Rupornis magnirostris* (Roadside Hawk; Accipitridae).

At 1300 h on 5 March 2021, we observed an adult *R. magnirostris* ingesting an adult *P. achatinus* headfirst while perched on a wooden fence (Fig. 1) in the urban area of the Municipality of Villamaría, Caldas, Colombia (5.04299°N, 75.50782°W; WGS 84; 1920 m elev.). After this initial event, three other similar predation events were observed. Each event lasted ca. 60 sec. Both species are commonly found in urban settings and low vegetation areas. The record reported here of *R. magnirostris* preying on a frog is not uncommon, since the consumption of anurans (e.g., *Boana pulchella*, *Leptodactylus ocellatus*, *Rhinella dorbignyi*) by this bird has been recorded in several places throughout its range (Dickey and Van Rossem 1938. Zool. Ser. Field Mus. Nat. Hist. 23:1–60; Panasci and Whitacre 2000. Wilson Bull. 112:555–558; Souza et al. 2003. Herpetol. Rev. 34:232; Baladrón et al. 2011. J. Raptor Res. 45:257–261).

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FIG. 1. Predation event of *Pristimantis achatinus* by an adult *Rupornis magnirostris* in Caldas, Colombia.

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PSEUDACRIS CRUCIFER (Spring Peeper). ENDOPARASITES.

Pseudacris crucifer occurs in eastern North America east of a line from eastern Texas, USA to Winnipeg, Canada, except for the southern half of the Florida Peninsula (Green et al. 2013. North American Amphibians, Distribution and Diversity. University of California Press, Berkeley, California. 340 pp.). We examined the body cavity of one female *P. crucifer* from Oklahoma (29 mm SVL) collected in March 2001 from Cherokee County (35.697°N, 98.871°W; WGS 84) and deposited in the Sam Noble Oklahoma Museum of Natural History, University of Oklahoma (OMNH) as OMNH 38753. The body cavity was opened by a mid-ventral incision and the interior was searched for helminths utilizing a dissecting microscope. Two cysts were found on the body wall. They were removed, cleared in lactophenol, and opened. Their contents were found to contain larval digeneans. They were regressively stained in hematoxylin, mounted in Canada balsam, cover-slipped, studied utilizing a compound microscope and identified as two metacercariae of *Clinostomum* sp. after comparison with Olsen (1974. Animal Parasites: Their Life Cycles and Ecology. Dover Publications, Inc., New York, New York. 562 pp.): "the oral sucker is surrounded by a collar-like fold and the testes are tandem with the ovary." *Clinostomum* sp. has an indirect life cycle, utilizing snails as first intermediate hosts, the cercariae leave the snail and penetrate animals serving as the second intermediate host, where they develop into metacercariae. *Clinostomum* sp. matures in birds that eat infected amphibians harboring mature metacercariae (Muzzall and Kuczynski 2017. Comp. Parasitol. 84:55–59). There are reports of unidentified metacercariae in *P. crucifer* from Michigan (Muzzall and Peebles 1991. J. Helm. Soc. Washington 58:263–265) and from Wisconsin (Yoder and Coggins 2007. J. Parasitol. 93:755–760). Voucher specimens were deposited in the Harold W. Manter Laboratory, University of Nebraska (HWML) as *Clinostomum* sp. (HWML 112238). *Clinostomum* sp. in *P. crucifer* is a new host record.

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RANA DRAYTONII (California Red-legged Frog). COLORATION.

Rana draytonii has been described as brown, grey, olive, reddish, and/or yellow with dark patches dorsally, and having dark bands on the legs (Storer 1925. Univ. California Publ. Zoo. 27:1–342; Slevin 1928. Occas. Pap. California Acad. Sci. 16:1–152; Stebbins 2003. Western Reptiles and Amphibians, Houghton Mifflin Co., New York, New York. 533 pp.). This accurately describes the variety of the thousands of specimens we have encountered in the field. In October 2004, however, a post-metamorphic individual (45 mm SVL) of a completely atypical coloration was encountered. Herein, we describe an unusual color pattern in a *R. draytonii* that was found at the Lomita Canal in Millbrae, San Mateo County, California, USA.

Rather than the characteristic combination of tan, brown, and tomato red, this individual displayed brilliant orange across



FIG. 1. Atypical coloration in a *Rana draytonii* from San Mateo County, California, USA.

its body (Fig. 1). The specimen was encountered among thick cattails (*Typha* sp.), in a canal paralleling the western shoreline of the San Francisco Bay (37.61116°N, 122.39473°W; WGS 84). *Rana draytonii* typically have a white speckled venter, while this individual had a creamy orange ventral side, free of any dark coloration. The underlying mechanisms that led to the orange coloration of the individual described here are unknown, as it is the first description of such coloration in California. Riemer (1954. Copeia 1954:45–48), in referencing the coloration of *Masticophis lateralis euryxanthus* (Alameda Whipsnake) suggested that "a number" of species of terrestrial vertebrates found in the area of the San Francisco Bay appear to be more richly supplied with yellow, orange, and red pigments. Citing seven different species, six of which are sympatric with *R. draytonii*, Riemer (1954, *op. cit.*) was clearly referencing typical coloration of these species. It is unclear whether the morph seen here suffers from the loss of or under expression of certain pigments (i.e., amelanistic). Amphibians are reported to use carotenoids for skin pigmentation, and because carotenoids are only obtainable through the diet, color degradation could result from limited carotenoid availability (Ogilvy et al. 2012. Anim. Conserv. 15:480–488). It is also possible that this atypical coloration was developed through a genetic mutation. We believe this is the first report of atypical coloration in this threatened species.

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RANA ONCA (Relict Leopard Frog). GROWTH, SEXUAL MATURITY, and SIZE.

Although *Rana onca* was once believed extinct, genetic analyses published in 2001 confirmed that the species had persisted (Jaeger et al. 2001. Copeia 2001:339–354). Since then, native populations (Bradford et al. 2004. Southwest. Nat. 49:218–228) have been supplemented by establishing populations at new sites as part of a multi-agency conservation effort (U.S. Fish and Wildlife Service 2016. Fed. Reg. 81:69425–69442). Following the translocation of recently metamorphosed *R. onca* into a pond refugium habitat within the Las Vegas Valley, Nevada (Saumure et al. 2021. In P.S. Soorae [ed.]. Global Conservation Translocation Perspectives: 2021. Case Studies from Around the Globe, pp. 76–81. International Union for the Conservation of Nature, Gland, Switzerland), four individuals grew rapidly,