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***OSTEOCEPHALUS CABRERAI* (Spiny-backed Treefrog) and *LEPTODACTYLUS MYSTACEUS* (Amazonian White-lipped Frog). INTERSPECIFIC AMPLEXUS.** The hylid *Osteocephalus cabrerai* occurs mainly on edges of streams, and is distributed in Amazonian Colombia and Peru, the Guiana Shield, the Orinoco Delta in Venezuela, and Brazilian central Amazon (Jungfer et al. 2010. Zootaxa 2407:28–50). Despite this wide distribution, there is little information on the reproductive biology and natural history of this species (Lima et al. 2011. Phyllomedusa 10:137–142). The leptodactylid *Leptodactylus mystaceus* is an abundant species occurring from Venezuela to southern Brazil (Affonso et al. 2011. Check List 7:198–199) and it was reported previously in a case of interspecific amplexus with the hylid *Boana multifasciatus* (Avelar et al. 2018. Herpetol. Rev. 49:299–300). At ca. 2200 h on 24 April 2012 on Highway AM-240, Community São Francisco, Presidente Figueiredo, Amazonas, Brazil (2.01277°S, 59.82115°W; WGS 84), we observed interspecific amplexus between a male *O. cabrerai* and female *L. mystaceus*. This behavior was observed on the edge of a small stream within an upland forest. The two specimens were in axillary amplexus on the ground and maintained their position during ca. 15 min. of observation. At the same place, there were other specimens of *O. cabrerai* on small bushes vocalizing, but none of them were observed in amplexus. To our knowledge, this is the first report of interspecific amplexus between *O. cabrerai* and *L. mystaceus*.

We thank the Instituto Nacional de Pesquisas da Amazônia for research support. AMSN thanks particularly the support for the Capes-INPA research grant (Process: 88887.312051/2018-00). DMMM thanks particularly the support for the CNPq research grant (Process: 141878/2018-5). RS acknowledges the FAPEAM for the Ph.D. scholarship (002/2016 – POSGRAD 2017).

FIG. 1. Male *Osteocephalus cabrerai* amplexing a female *Leptodactylus mystaceus* in Presidente Figueiredo, Amazonas, Brazil.

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***PELOPHYLAX KURTMUELLERI* (Balkan Water Frog) and *PELOPHYLAX EPEIROTICUS* (Epirus Water Frog). DEFENSIVE BEHAVIOR.** Specific antipredatory postures are known for many species of the family Ranidae (Toledo et al. 2011. Ethol. Ecol. Evol. 23:1–25). Here, we provide the first observations of defense posture in two species of *Pelophylax* (Ranidae) that inhabit wetlands of the southwestern Balkans from lowlands to hilly areas (Speybroeck et al. 2016. Field Guide to the Amphibians and Reptiles of Britain and Europe. Bloomsbury Publishing, London. 432 pp.).

The first observation (adult male *P. kurtmuelleri*; Fig. 1A) was observed at 2348 h on 12 October 2014 near Doxa Lake, Peloponnese, Greece (37.93100°N, 22.28300°E; WGS 84; 875 m elev.). The second observation (adult female *P. kurtmuelleri*; Fig. 1B) was observed at 1300 h on 24 September 2015 near Osum River, Uznovë, Albania (40.685°N, 20.011°E; WGS 84; 66 m elev.). The third observation (subadult *P. epeiroticus*; Fig. 1C) was observed at 0914 h on 31 October 2018 in Kaifa Lake, Peloponnese, Greece (37.51700°N, 21.59700°E; WGS 84). In all cases we observed defensive posture known as partial body-raising (Toledo et al. 2011, *op. cit.*). All these frogs were captured from the water surface and after a few minutes of ex-situ photography presented the defense behavior. The frogs remained in typical posture from 3–10 min without stretched legs. The body-raising concluded for a few seconds, then resumed for the same time interval when the photographer got up. All the individuals kept this posture when the photographer raised quickly from the height of their eyes. The individuals retained their eyes open throughout the duration of defense, and the back legs were vertically stretched.

Similar types of defensive behaviors have been reported in other species of frogs (*Bufo bufo*, *Bufotes viridis*, *Hyla arborea*, and *P. esculentus*; Hinsche 1928. Biologisches Zentralblatt. 46:296–305). Interestingly, the body-raising defense behavior

FIG. 1. Adult male of *P. kurtmuelleri* from Lake Doxa, Greece (A), adult female of *P. kurtmuelleri* from Uznovë, Albania (B), and subadult individual of *P. epeiroticus* from Kaifa Lake, Greece (C) displaying body-raising defense posture.

has never been observed in the closely related but terrestrial genus *Rana*, where current members of mainly aquatic or semi-aquatic frogs (*Pelophylax*) were historically classified. The most common defense behavior of *Rana* is immobility posture known as "eye-protection" (see e.g., Haberl and Wilkinson 1997. Brit. Herpetol. Soc. Bull. 61:16–20; Jablonski et al. 2019. Herpetol. Bull. 147:19–20), which is not reported for the genus *Pelophylax*. This difference may be explained by differences in predation pressure experienced by the two groups.

The photography from Greece were conducted under the permission of the Greek Ministry of Environment and Energy (7646538-8; protocol number 167886/538). This study was supported by the Slovak Research and Development Agency under the contract no. APVV-15-0147.

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***PSEUDACRIS ORNATA* (Ornate Chorus Frog). ALBINISM.** Albinism has been recorded in Bufonidae, Hylidae, Ranidae, and Scaphiopodidae (Jameson and Myers 1957. Herpetologica 1:74; Dyrkacz 1981. SSAR Herpetol. Circ. 11. 31 pp.). Within Hylidae, true albinism has been noted for *Trachycephalus mesophaeus*, *T. venulosa*, *Hypsiboas albomarginatus* (White-edged Treefrog), and *Pseudacris [Hyla] regilla* (Pacific Treefrog; Jameson and Myers 1957, *op. cit.*; Sazima 1974. J. Herpetol. 8:264–265; Motte and Cacciali 2009. Bol. Asoc. Herpetol. Esp. 20:65–67, de Oliveira et al. 2013. Herpetol. Notes 6:577–578). Dyrkacz (1981, *op. cit.*) also reported partial albinism in one specimen of *Hyla arenicolor* (Canyon Treefrog), unconfirmed abnormal coloration in *P. regilla*, and one leucistic *Pseudacris triseriata* (Western Chorus Frog). Additionally, hypomelanism has been reported within the Hylidae (Turner 2017. Od. Nat. 55:22–28).

Albinistic individuals lack all coloration; the individuals described in this note lacked all melanin including in the skin, mucosa, and eyes, and are therefore classified as true albinos (Bechtel 1995. Reptile and Amphibian Variants: Colors, Patterns, and Scales. Krieger Publishing Company, Malabar, Florida. 206 pp.). Here, we report the second confirmed case of albinism in the genus *Pseudacris*.

On 9 February 2018, multiple egg masses were collected from Alapaha River Wildlife Management Area, Irwin County, Georgia, USA (31.51819°N, 83.34823°W; WGS 84) and held under refrigeration ca. 4.5°C for 11 d before being transferred to aquaria at room temperature. Hatching began on 12 February 2018 and was completed by 25 February 2018. Tadpoles with abnormal coloration were evident 9 d later. Four individuals were transferred to a plastic cup with Maidencane (*Panicum hemitomon*) and a bubbler and were fed rabbit chow ad libitum. Of the four tadpoles, one died on 5 March 2018. One albino tadpole grew extremely slowly and died 25 May 2018. The remaining two tadpoles were transferred to a larger container with *P. hemitomon* and a bubbler on 13 May 2018. The container was exposed to indirect sunlight and the tadpoles appeared to be growing and developing limb buds. One tadpole died following a water change on 1 June 2018 and was submitted to the Georgia Museum of Natural History (GMNH 51918). This individual had been growing and undergoing development, and other than pigmentation, was normally developed (Fig. 1). We expect it would have completed metamorphosis without the stress of a water change. The remaining albino tadpole completed metamorphosis on 27 June 2018 (Fig. 2). The metamorphic individual lacked any pigmentation including within and around the eye. The animal exhibited normal behavior with the exception of an apparent visual impairment. The metamorph hopped and burrowed normally and responded to shadows, but it appeared to only feed on fruit flies using tactile cues. The individual died on 11 September 2018 and was preserved in 10% formalin and stored in 70% ethanol (GMNH 51919).

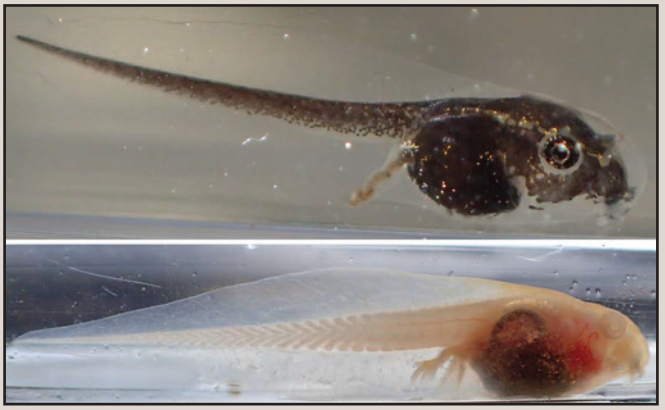

FIG. 1. Wild-type *Pseudacris ornata* (top) and albino *P. ornata* tadpole (bottom).

FIG. 2. Albino *Pseudacris ornata* metamorph with US dime for size comparison (left) and wild-type *P. ornata* (right).

While there are many causes of albinism, spontaneous mutations in the TYR gene, which is responsible for coding the tyrosinase enzyme, have resulted in amphibian albinism (Miura et al. 2017. Genes Genet. Syst. 92:189–196). Tyrosinase catalyzes the production of tyrosine, which is necessary for the production of melanin and is converted to the thyroid hormones thyroxine (T4) and triiodothyronine (T3). T4 and T3 regulate cell growth and differentiation and are essential to successful metamorphosis. The developmentally normal albinistic metamorph is significant because it is generally assumed that selective pressures (Pash et al. 2007. Herpetol Bul. 100:8; Marinuzzi et al. 2016. Cuad. Herpetol. 30:69–73) and disruption of these metabolic pathways limit the occurrence of albinism in nature. However, normal metamorphosis is possible and the presence of genetically albino individuals within populations may signal high genetic diversity, and is therefore, worthy of further inquiry.

Work approved under authority of University of Georgia IACUC AUP # A2018 02-019-Y1-A0 and Georgia Department of Natural Resources Scientific Collecting Permit #1000602439. This material is based upon work supported by the National Science Foundation Graduate Research Fellowship Program under Grant No. 049347-06. Any opinions, findings, and conclusions or recommendations expressed in this material are those of the author(s) and do not necessarily reflect the views of the National Science Foundation.