SOCIETY FOR THE STUDY OF AMPHIBIANS AND REPTILES

Publisher of **Journal of Herpetology, Facsimile Reprints in Herpetology, Herpetological Review, Catalogue of American Amphibians and Reptiles, Herpetological Circulars, Contributions to Herpetology, *and* Herpetological Conservation**

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width) was found dead in a seasonal spring at the intersection of W. Sessom Drive and State Street, located in the city of San Marcos, Hays Co., Texas, USA (29.89050°N, 097.93684°W, WGS84; elev. 177 m). The cause of death was not apparent; we speculate poor water quality or internal trauma sustained while emerging from the spring may have been responsible. Ambient water temperature of the spring was 20°C. Water depth at the entrance of the spring was ca. 24.13–25.4 cm. The specimen was found in the water ca. 1.5 m from the mouth of the spring. The specimen was salvaged via hand-held net under TPWD scientific permit number SPR-0707-1387 to RUT. A tissue sample was taken from the tail and was preserved in 90% ethanol. The remainder of the specimen was preserved in 70% ethanol. Specimen identification was verified by Paul T. Chippindale from the University of Texas at Arlington, where the specimen and tissue sample have been deposited at the Amphibian and Reptile Diversity Research Center (UTA-A 61913; Field ID, RUT 01).

We thank P. T. Chippindale for species verification, D. M. Garcia and C. Sheehy III for critical review, F. Weckerly for the use of his caliper, J. Fries, G. Longley, and A. Gluesenkamp for guidance, C. Franklin and J. Campbell for museum assistance, and A. Groeger for use of his equipment. The South Texas Herpetological Association and the East Texas Herpetological Society provided financial support.

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ANURA — FROGS

ACRIS BLANCHARDI **(Blanchard's Cricket Frog). FEIGNING DEATH.** On 21 May 2012 at Boehler Seeps and Sandhills Preserve (Atoka County, Oklahoma USA; 34.16563°N, 95.88901°W) an *Acris blanchardi* was captured in a funnel trap that had been placed along a drift fence. When the frog was first observed, it was actively jumping inside of the trap; however, when it was picked up to remove it from the trap, it immediately opened its mouth, closed its eyes, and slowly began stretching its rear legs into a fully extended position (Fig. 1). It twitched its rear legs as it extended them and continued to twitch them after they were fully extended, but otherwise it remained completely motionless until one of the authors (DTM) gently touched one of its rear feet. When touched, it quickly retracted its legs and closed its mouth (its eyes remained closed). It then sat motionless with its rear legs tucked tightly against its body, its front legs held tightly against its head, and its head pressed down against DTM's hand (the frog was in DTM's hand during this entire process). The frog remained in this position even when it was touched and rolled onto its back.

The frog was then placed upside-down into a container. It did not move for approximately ten minutes, at which point, it righted itself and began moving around in the container. When the container was opened, it jumped out and attempted to flee.

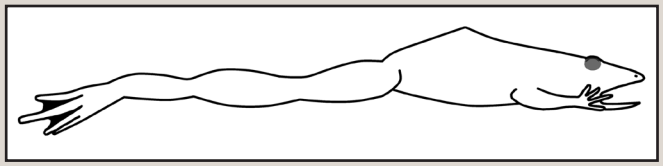

FIG. 1. A drawing of the Blanchard's Cricket Frog (*Acris blanchardi*) feigning death with its rear legs fully extended.

When it was grabbed, however, it immediately resumed its previous position with its head down, eyes closed, and limbs tucked in. When placed back on the ground, it abandoned this position and began actively fleeing. This cycle was repeated several times, however, it only opened its mouth and twitched its legs the first time that it was grabbed.

Death feigning has been previously reported in the Northern Cricket Frog (*A. crepitans*), but in that instance, the frogs remained motionless with their legs held against their body in a position that was similar to what we observed in *A. blanchardi* after touching the frog's foot, but they never extended their rear legs, twitched, or opened their mouths (McCallum 1999. Herptol. Rev. 30:90). It is possible that the differences between our observation and the observations of *A. crepitans* are a result of interspecific differences in behavior. It should be noted, however, that 161 *A. blanchardi* were captured at this site during 2012, and very few of them remained motionless with their limbs tucked in, and, other than this individual, none of them extended their rear legs, twitched, or opened their mouths. This may, therefore, be an isolated occurrence.

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ACRIS CREPITANS **(Northern Cricket Frog). AXANTHISM.** Variability in phenotype and expression of pigments has been well documented in some amphibians (Berns and Narayan 1970. J. Morphol. 132:169–172; Frost et al. 1986. J. Embryol. Exp. Morphol. 95:117–130; Grether et al. 2004. Biol. Rev. 79:583–610; Hoffman and Blouin 2000. Biol. J. Linn. Soc. 70:633–665; Nevo 1973. Evolution 27:353–367). On 7 Sept 2011 a juvenile *Acris crepitans* was found at Harrison Lake National Fish Hatchery in Charles City Co., Virginia, USA. Blue pigmentation was apparent on the dorsum. It was a mottled phenotype of tan/grey, green, and blue. The frog appeared to be an axanthic mosaic animal in that it was not entirely lacking xanthophores (evident in its green coloration). Many other *A. crepitans* have been seen at the hatchery across many years, by many observers, and none have been noticed to exhibit this phenotypic coloration. It is unclear as to whether the coloration was a result of diet, disease, environment, genetic variation, or hormones as all are possible causes (Berns and Narayan 1970, *op. cit.*; Chatzifotis et al. 2011. Aquaculture Nutrition 17:90–100; Frost et al. 1986, *op. cit.*; Grether et al. 2004, *op. cit.*; Hoffman and Blouin 2000, *op. cit.*; Mizusawa et al. 2011. Gen. Comp. Endocrinol. 171:75–81; Nevo 1973, *op. cit.*). It is possible that this animal may be more susceptible to disease, desiccation, or predation (Nevo 1973, *op. cit.*). A review of the literature produced no articles mentioning *A. crepitans* exhibiting the axanthic phenotype. To my knowledge, this is the first reported case of an axanthic mosaic *A. crepitans*.

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AGALYCHNIS CALLIDRYAS **(Red-eyed Treefrog). PREDATION.** *Agalychnis callidryas* is a charismatic representative for neotropical forest conservation and tropical tourism. Predation has been observed in both the egg and larval stages, and close examination of the these life stages has increased our understanding of the ontogenetic differences in predation risk and

the mechanisms behind reducing predation risks in subadults (Warkentin 2000. Anim. Behav. 60:503–510; Warkentin 1999. Behav. Ecol. 10:251–262). Surprisingly, little has been reported on predators of the adult life stage of this species. Careful investigation for this report has resulted in general statements to identify predators of adult *A. callidryas*, with assumptions based on the feeding preferences of potential predators (Savage 2002. The Amphibians and Reptiles of Costa Rica: a Herpetofauna between Two Continents, between Two Seas. Univ. Chicago Press, Chicago, Illinois. 934 pp.).

Adult *A. callidryas* are nearly exclusively arboreal, although reproductive females seek out standing water on the ground from which to absorb moisture (presumably into their bladders), which is used to hydrate internally maturing ova (Pyburn 1970. Copeia 1970[2]:209–218). Although males occasionally are found on the margins of small pools, calling for females, our observations suggest that the majority of vocalizations come from arboreal perches. Adults typically rest during the day within the forest canopy in a shallow state of torpor, often on the underside of leaves. During evenings and rain events, adults are typically found grasping (or alight on) leaves, branches, and vegetative stalks.

The event described here represents a rarely reported observation of the predation of *A. callidryas* in the adult life stage. During the evening of 04 June 2012, in the Fincas Naturales Wildlife Refuge, Quepos, Costa Rica, Central America (9.40444°N, 84.15516°W; elev. 136 m), we detected numerous *A. callidryas* within the herbaceous vegetation throughout the refuge. The vast majority of observed individuals were above ground (approximately 0.5 to 3.0 m), and typically within vegetation of a similar color to the frog. Males vocalized frequently while engaged in saltatory movements.

While slowly walking along a transect, we observed an adult *A. callidryas* leap from the vegetation to the ground. Nearly instantaneously, a nearby adult *Leptodactylus pentadactylus* (South American Bullfrog) moved quickly through leaf litter and grasped the *A. callidryas* by the head and shoulder. The *L. pentadactylus* used its front limbs to maneuver the *A. callidryas* to grasp it by the pelvic area, with the prey's torso and head deep within the predating bullfrog's buccal cavity. When one of us attempted to photodocument the event, the *L. pentadactylus* retreated quickly with its prey into leaf litter, where it presumably consumed the *A. callidryas*.

This observation was doubly rare in that it documented terrestrial predation on adult *A. callidryas*; this and other treefrog species are presumed to be at greatly reduced risk from terrestrial predators because of their arboreal lifestyle. It can be assumed that predation on adult *A. callidryas* occurs more typically by arboreal predators, such as the *Bothriechis schlegelii* (Eyelash Viper) and juvenile *Bothrops asper* (Terciopelo) (Savage 2002, *op. cit.*), both of which were observed within the wildlife refuge during our survey effort.

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AGALYCHNIS CALLIDRYAS (Red-eyed Treefrog), ***CRUZIOHYLA CALCARIFER*** (Gray-eyed Treefrog), ***HYPSIBOAS RUFITELUS*** (Scarlet-webbed Treefrog), and ***LEPTODACTYLUS MELANONOTUS*** (Fringe-toed Foamfrog). **PECCARY WALLOWS AS BREEDING HABITAT.** We surveyed six temporary water-filled depressions used as wallows by Collared Peccaries (*Pecari tajacu*) at La Selva Biological Station, Heredia, Costa Rica in June–July 2012. Fresh tracks confirmed that all wallows were actively used by peccaries during the study period. Four wallows contained tadpoles of one to three amphibian species. We identified tadpoles following Savage (2002. The Amphibians and Reptiles of Costa Rica: A Herpetofauna between Two Continents, between Two Seas. Univ. Chicago Press, Chicago, Illinois. 934 pp.) and Hoffmann (2005. Rev. Biol. Trop. 53:561–568). Wallow #1 contained *Agalychnis callidryas* eggs, tadpoles, and metamorphs, and *Leptodactylus melanonotus* tadpoles and an adult. Wallows #2 and #3 contained *A. callidryas* tadpoles. Wallow #4 contained *A. callidryas* tadpoles, *Hypsiboas rufitelus* tadpoles, and *Cruziohyla calcarifer* eggs, tadpoles, and an adult male. In wallows #1 and #4, we encountered *A. callidryas* and *C. calcarifer* tadpoles at various developmental stages, indicating that multiple clutches were laid at different times. We returned to wallow #1 three times over the two-month survey period, and on our final visit we noted several *A. callidryas* tadpoles at Gosner stage 41 and metamorphs at Gosner stage 42 (Gosner 1960. Herpetologica 16:183–190). We expect these tadpoles would have successfully completed metamorphosis.

To our knowledge, this is the first record of any of these species using peccary wallows as breeding habitat. We were not surprised to find *L. melanonotus* and *H. rufitelus* breeding in peccary wallows because both species seem to be habitat generalists (Savage 2002, *op. cit.*), and will use disturbed habitats such as forest fragments and cattle pastures (pers. obs.). Although *A. callidryas* also utilizes disturbed habitats, we were surprised that *A. callidryas* was the most common species encountered in wallows because this species typically breeds in temporary ponds at least an order of magnitude larger in surface area than our wallows (Donnelly and Guyer 1994. Oecologia 98:291–302). Recent observations of *A. callidryas* adults piggybacking on peccaries (Kuhn et al. 2012. Herpetol. Rev. 43:629) suggest that adult frogs may disperse among wallows by riding on the peccaries. We were even more surprised to observe multiple egg masses and tadpoles of *C. calcarifer* in wallow #4. *Cruziohyla calcarifer* is described by Savage (2002, *op. cit.*) as "…not found near either permanent or temporary ponds." *Cruziohyla calcarifer* has previously been reported using water-filled cavities in the trunks or buttresses of fallen trees (Donnelly 1987. Copeia 1987[1]:247–250). There were no treefalls visible within 30 m of wallow #4. Peccary wallows constitute a previously undescribed breeding habitat for *C. calcarifer*.

Peccaries have long been recognized as ecosystem engineers of breeding habitat for Amazonian amphibians (Gascon 1991. Ecology 72:1731–1746; Zimmerman and Bierregaard 1986. J. Biogeog. 13:133–143; Zimmerman and Simberloff 1996. J. Biogeog. 23:27–46). White-lipped Peccaries in the Amazon create wallows that hold water longer into the dry season than natural depressions. For amphibians, these wallows create novel aquatic habitats that support reproductive activities and increase the anuran biodiversity of forests with peccaries (Beck et al. 2010. J. Trop. Ecol. 26:407–414). Zimmerman and Bierregaard (1986, *op. cit.*) went so far as to recommend that the minimum size of preserves for pond-breeding amphibians in the Amazon should be determined on the basis of the size of reserve required to sustain White-lipped Peccary populations. Schlueter (2005. Herpetol. Rev. 36:160) emphasized the negative effects of peccary loss on Amazonian amphibian populations and diversity.