

al. 2011. *Herpetol. Rev.* 42:90). At 1900 h on 26 May 2013, on the margin of a pond in the municipality of Corumbá, Mato Grosso do Sul State, Brazil (18.232492°S, 55.745097°W, datum: SAD 69), we observed *P. platensis* predation by *Hoplias* cf. *malabaricus* (Fig. 1). The diet of *Hoplias* is made up mostly of fishes (Lowe-McConnell 1975. *Fish communities in tropical freshwaters: their distribution, ecology and evolution*. Longman, London. 337 pp.), however, one study confirmed their predation on *Rhinella ornata* (Haddad and Bastos 1997. *Amphibia-Reptilia* 18:295–298). This is the first record of *P. platensis* being consumed by *Hoplias*.

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RHINELLA CRUCIFER (Sapo Cururuzinho; Striped Toad), **HINDLIMB MALFORMATION**. The widespread occurrence of deformities of frogs has recently been perceived as a major environmental problem and should be reported in the scientific literature (Johnson et al. 2003. *Cons. Biol.* 17:1724–1737.). During a nocturnal survey on 10 July 2004, RBF collected a calling male of *Rhinella crucifer* (SVL = 63 mm) at the margin of a 3 × 3 m natural pond in the district of Alto Nova Almeida, municipality of Marechal Floriano, Espírito Santo state, Brazil (40.828208°W, 20.404561°S, datum WGS84; elev. 835 m). This specimen (MBML

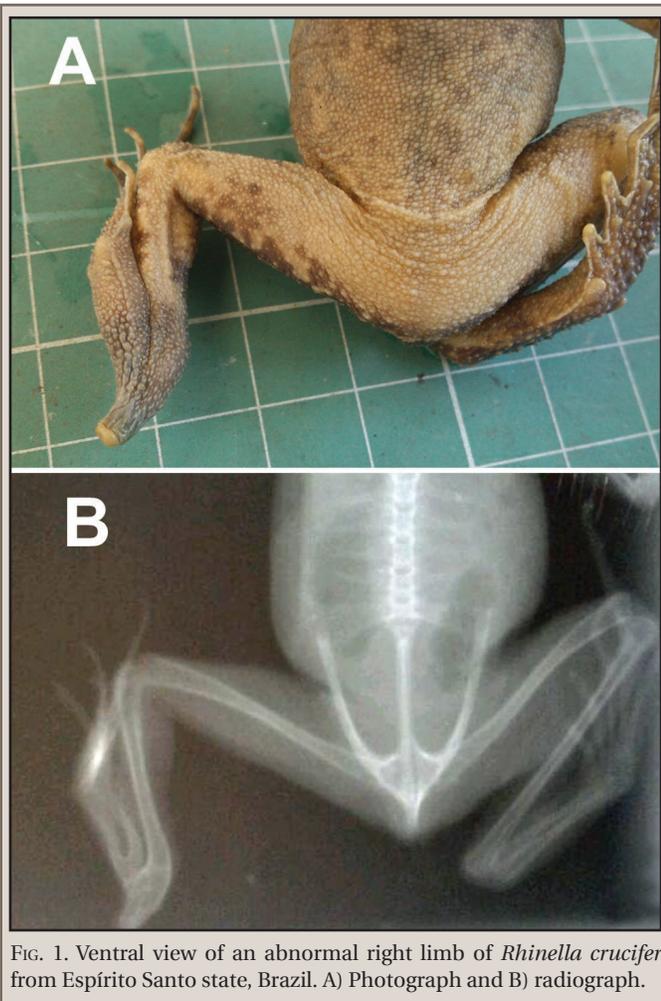


FIG. 1. Ventral view of an abnormal right limb of *Rhinella crucifer* from Espírito Santo state, Brazil. A) Photograph and B) radiograph.

7640) is deposited in the Zoological Collection of Museu de Biologia Mello Leitão, Santa Teresa municipality, Espírito Santo state, Brazil. This specimen has an abnormal right leg with a 3 mm outward curved, swollen, and calcified projection on the joint formation of its tibiofibula-tarsus (Fig. 1A). A radiography revealed that the right leg (27.3 mm) has a longer distal portion of its tibiofibula compared to the left leg (23.3 mm; Fig. 1B). It is likely that these anomalies originated during either embryonic or metamorphic stage of this *R. crucifer* due to the curvature of the distal portion of these bones. However this limb deformity did not prevent this specimen from reaching adulthood.

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TRACHYCEPHALUS TYPHONIUS (Common Milk Frog). **PRE-DATION**. Frogs are preyed upon by a great variety of invertebrates (Toledo 2005. *Herpetol. Rev.* 36:395–400), vertebrates (Centeno et al. 2010. *Herpetol. Rev.* 3:91–92), and even carnivorous plants (Duellman and Trueb 1994. *Biology of Amphibians*. Johns Hopkins University Press, Baltimore. 670 pp.). Herein, we describe an *in situ* observation of predation of a juvenile *Trachycephalus typhoni* (Hylidae) by the mantis *Stagmatoptera binotata* (Mantidae: Stagmatopterinae). At 0938 h on 18 March 2013, in a residence in the municipality of Santana, State of Amapá, Brazil (0.036311°N, 51.162481°W, datum WGS84; elev. 26 m), we observed the mantis holding the frog with its raptorial forelegs. The observations lasted 15–20 min. The mantis was an adult female measuring 68 mm. The role of mantis predation is well known in literature; however, reports of mantids preying upon anurans are scarce and only occasional (Pombal Jr. 2007. *Rev. Bras. Biol.* 24:841–843). Data here presented constitute the first record of *S. binotata* preying upon *T. typhoni*.

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TESTUDINES — TURTLES

ACTINEMYS MARMORATA (Western Pond Turtle). **NEST PRE-DATION ASSOCIATION**. *Actinemys marmorata* is one of two native turtles in California, and a Species of Special Concern (Jennings and Hayes 1994. *Amphibian and Reptile Species of Concern*. California Department of Fish and Game, Sacramento, California. 255 pp.). This turtle also occurs in Oregon and Washington, where it is listed as critically sensitive and endangered, respectively. The species has experienced significant

habitat loss, alteration, and fragmentation over a majority of its range (Bury et al. 2012. Northwest Fauna 7:1–128). Habitat disturbances frequently occur in the uplands associated with the turtle's nesting habitat, limiting nest-site access and reducing recruitment rates. We report an additional confounding impact: an unexpected association between manmade infrastructure (fencing) and a high level of nest-site predation on a population of *A. marmorata*.

Moorhen Marsh, part of the Peyton Slough Marsh Complex, is a 21-acre constructed freshwater wetland owned and operated by the Mt. View Sanitary District (MVSD) in Martinez, California. Built in 1974, Moorhen Marsh is bordered by the Shell-Martinez Oil Refinery, MVSD's wastewater treatment plant, and Interstate 680 (Fig. 1). The marsh is managed by the MVSD primarily as habitat for native wildlife, including migratory birds and sensitive species, and for environmental education and research. *Actinemys marmorata* has been a focus of study on this site for several years, including efforts to determine the timing, location, and extent of nesting habitat. In the course of this study, we observed significant predation of recently constructed nests (predation was assumed based on excavated nests and empty and/or fragmented eggshells). A total of 18 predated turtle nests were found over a nearly two-month period (8 June–22 July 2013). Sixteen nests were determined to be those of *A. marmorata*; the other two were believed to have been made by *Trachemys scripta* (Red-eared Slider), a nonnative in California. All predated nests were located within 10 m of open water. Three *A. marmorata* nests were on a 3-m wide levee, within 1 m of the water's edge. A single *A. marmorata* nest was on a slope that borders the aquatic habitat and the treatment plant, within 5 m of the water. The remaining 12 *A. marmorata* nests and the two *T. scripta* nests (i.e., the great majority of predated nests) were found along the western and southern boundaries of the refinery's chain-link security fence that borders the project site (Fig. 1).



FIG. 1. Locations of predated Western Pond Turtle nests (red dots) within Moorhen Marsh, east of Martinez, California. Yellow dots indicate predated Red-eared Slider nests. Dashed blue line delineates chain-link boundary fencing.

We determined—through tracks, trails, direct observation, and camera stations—that the fence line was functioning to direct and concentrate potential predators along the western and southern borders of the marsh. Coincidentally, the fence impeded the upland extent to which *A. marmorata* could travel within the project site. Common use of the fence-line route by Red Fox (*Vulpes vulpes*), Gray Fox (*Urocyon cinereoargenteus*), Striped Skunk (*Mephitis mephitis*), Raccoon (*Procyon lotor*), and other species had created areas of patchy soil along the fence. This combination—open soil/grassland microhabitat, conditions ideal for turtle nesting—likely caused *A. marmorata* to nest in sites closely associated with predator pathways. Although we do not know the overall percentage of nests lost to predation, we observed the loss of 16 *A. marmorata* nests in 45 days. We speculate that approximately 30 adult female *A. marmorata* occupy the marsh; if our count is accurate, this attrition would represent a significant level of predation to nesting turtles on the site.

It appears clear that some barriers to movement (e.g., low-hanging chain-link fence) may be associated with increased predation events for nesting turtles. We recommend, when feasible, increasing the gap between fencing and the ground to allow turtles increased access to upland areas for nesting. If other barriers are constructed in the presence of turtle habitat, careful consideration should be given to reducing the potential for concentrated predation, particularly for declining species such as *A. marmorata*.

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APALONE FEROX (Florida Softshell). TOLERANCE TO FIRE ANTS. Many species of terrestrial reptiles are reported to have had fatal encounters with red imported fire ants (*Solenopsis invicta*) (Allen et al. 2004. Am. Midl. Nat. 152:88–103). The ants prefer disturbed areas in full to partial sun (Tschinkel 1988. Ann. Entomol. Soc. America 69:76–81), which coincides with preferred nesting habitat for many turtles (Ernst and Lovich 2009. Turtles of the United States and Canada. 2nd ed., Johns Hopkins Univ. Press, Baltimore, Maryland. 827 pp.). Hatchlings of numerous turtle species have fallen victim to fire ants, particularly once eggs have pipped (Landers et al. 1980. Herpetologica 36:353–361; Mount et al. 1981. J. Alabama Acad. Sci. 52:71–78; Conners 1998. Herpetol. Rev. 29:235; Buhlmann and Coffman 2001. J. Elisha Mitchell Sci. Soc. 117:94–100). Montgomery (1996. Bull. Chicago Herpetol. Soc. 31:105–106) reported several observations of adult *Terrapene carolina* killed by fire ants. Whiting (1994. Herpetol. Rev. 25:25) observed a *Pseudemys texana* female abandon her nest prematurely after being stung by about 150–200 fire ants, and Ferrell (2006. Herpetol. Rev. 37:343) observed a female *Trachemys scripta* abandon her nest with one egg after being stung by fire ants. In all of these cases, adults and nests were a meter or more away from nearby ant mounds. Here we report an observation of an *A. ferox* that tolerated numerous fire ant stings while nesting directly on a fire ant mound. On 17 April 2009, we observed an adult female (CL 385 mm, PL 304 mm, 5932