

Maryland. 827 pp.). This small turtle has been documented as a prey item for many species including raccoons, foxes, large wading birds, water snakes, Snapping Turtles, and Largemouth Bass (Ernst and Lovich, *op. cit.*; Mitchell 1994. The Reptiles of Virginia. Smithsonian Institution Press, Washington, DC. 353 pp; Meylan 2006. Biology and Conservation of Florida Turtles. Chelon. Res. Monogr. No. 3. Chelonian Research Foundation. Lunenburg, Massachusetts). Following is the detailed description of the first confirmed observation of *S. odoratus* being preyed upon by the Black Vulture (*Coragyps atratus*). This observation was made during an invasive species removal project at Comal Springs in New Braunfels, Texas, USA (29.71671°N, 98.13287°W, WGS84; elev. 632 m), on 1 March 2014.

Comal Springs is a large spring-fed lake that has a series of centrally located small islands. SWCA Environmental Consultants was hired by the City of New Braunfels and the Edwards Aquifer Authority to remove all Blue Tilapia (*Oreochromis aureus*), Vermiculated Sailfin Catfish (*Pterygoplichthys disjunctivus*), and Nutria (*Myocastor copypus*) from the ecosystem. To remove the Nutria, a series of 15 Havahart live traps were placed throughout the ecosystem where signs of Nutria indicated habitat use. Two of the islands in the middle of the lake had obvious dens on them. While scouting these islands, it was observed that they were used by a large Black Vulture rookery. While setting several traps on the island we noticed bone middens, and some of these contained *S. odoratus* carapaces. A long-term turtle population survey in this habitat had previously indicated a massive population of *S. odoratus* (Munscher, unpubl. data). Although we did not directly witness these turtles being preyed on, we did observe (13 May 2014) an adult female *S. odoratus* being chased by a Black Vulture. The turtle had probably just laid eggs and was making her way back to the lake. The vulture was actively following and stalking the turtle but the attempted predation was interrupted by our approach; the turtle was a marked specimen in our data set.

Although we did not directly observe turtle deaths on the islands and therefore cannot be positive that they were not killed by some other predator, we believe this represents black vulture predation. During our three-year invasive species removal project, we captured five Nutria on these islands, but did not capture a raccoon, possum, or other possible mammalian predator. We note that none of the shells had any signs of being chewed on by a mammal, suggesting that the turtles were killed by an avian predator (Ernst and Lovich, *op. cit.*) more prone to attack the fleshy parts of the turtle.

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TERRAPENE CAROLINA CAROLINA (Eastern Box Turtle). HIGH ELEVATION RECORD. *Terrapene carolina carolina* is a widespread chelonian species occurring in a variety of mesic forest types throughout eastern North America (Dodd 2001. North American Box Turtles: A Natural History, University of Oklahoma Press, Norman. 231 pp.). This species generally occurs at elevations ranging from sea level (Dodd 2001, *op. cit.*) to 1219 m (Huheey and Stupka 1967. Amphibians and Reptiles of Great Smoky Mountains National Park. University of Tennessee Press, Knoxville. 98 pp.) although individuals tend to become less

frequently encountered as elevations increase (Dodd 2001, *op. cit.*).

On 7 September 2015 at approximately 1650 h, we encountered an adult female *T. c. carolina* (SCL: 15.3 cm) along a densely vegetated margin of a remnant woods road at an elevation of ca. 1663 m, less than 100 m from the summit of Haw Knob (1668 m elev.) located on the Tennessee (Monroe Co.) and North Carolina (Graham Co.) state line along the Cherokee and Nantahala National Forest proclamation boundary in the Unicoi Mountain region (35.30986°N, 84.02733°W; WGS84). The *T. c. carolina* was initially observed semi-concealed under a dense herbaceous cover of *Rubus allegheniensis* (Allegheny Blackberry), *Ageratina altissima* (White Snakeroot), *Dennstaedtia punctilobula* (Hayscented Fern), and *Carex pensylvanica* (Pennsylvania Sedge). The surrounding habitat is representative of the Northern Hardwood Forest community, dominated by *Fagus grandifolia* (American Beech), *Betula alleghaniensis* (Yellow Birch), *Acer saccharum* (Sugar Maple), *Aesculus flava* (Yellow Buckeye), with understory thickets of *Rhododendron catawbiense* (Catawba Rhododendron), *Acer pensylvanicum* (Striped Maple), *Hydrangea arborescens* (Wild Hydrangea), and *Viburnum lantanoides* (Witch Hobble).

Observations of *T. c. carolina* above 1219 m elev. are sparse and are primarily limited to two noteworthy records: 1387 m elev. in Buncombe Co., and another at 1341 m elev. in Watauga Co., both in North Carolina (Palmer and Braswell 1995. Reptiles of North Carolina. University of North Carolina Press, Chapel Hill. 412 pp.). Palmer and Braswell (1995, *op. cit.*) also report an exceptional record of 2007 m at the parking lot of Mount Mitchell, but suggested the record may represent a released individual and therefore is not considered here. Our observation is noteworthy as it represents a substantial elevational record increase of approximately 276 m above the Buncombe Co., North Carolina record. Despite the paucity of records, it is evident this species may occur in low numbers at very high elevations in the southern Appalachians. Although extralimital elevation records support *T. c. carolina* as a generalist, adaptations to extremes in abiotic conditions and physiological adaptations warrant further study.

A photo voucher of the female *T. c. carolina* has been deposited at the Museum of Natural History at Auburn University as AUM AHAP-D 1138.

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TRACHEMYS SCRIPTA ELEGANS (Red-eared Slider). PREDATION. *Trachemys scripta elegans* is native to the southern USA and northeastern Mexico but has been introduced over a vast geographic scale, primarily via the pet trade, and is now one of the most wide-spread invasive reptiles (Kraus 2009. Alien Reptiles and Amphibians: a Scientific Compendium and Analysis. Springer Science + Business Media B.V., Dordrecht, Netherlands. 564 pp.). *Trachemys s. elegans* became established

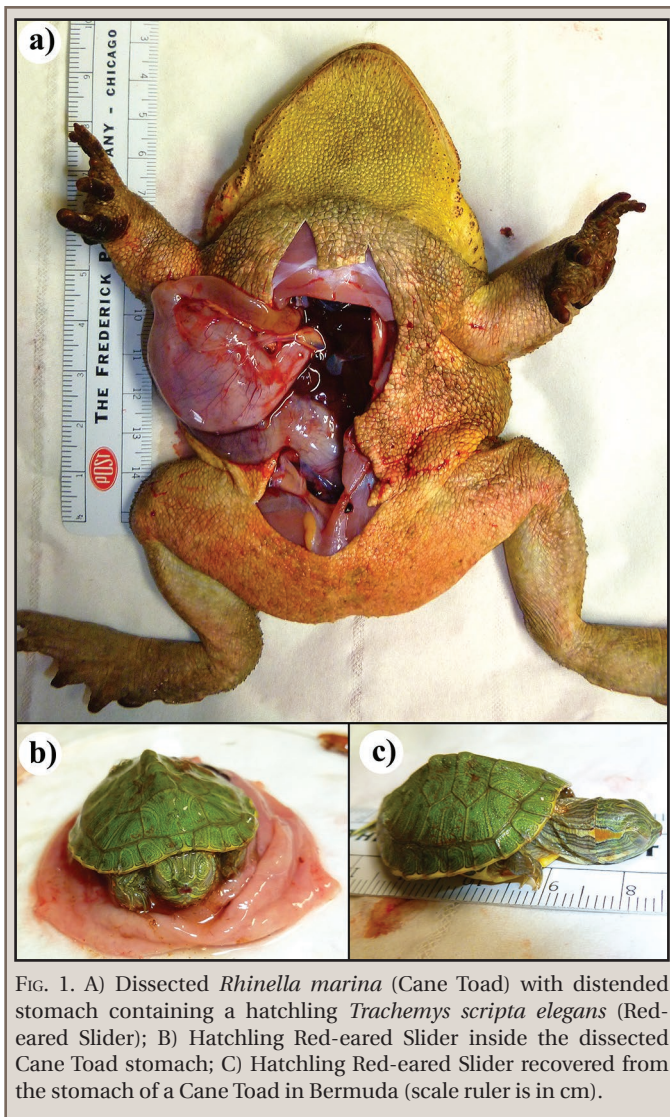


FIG. 1. A) Dissected *Rhinella marina* (Cane Toad) with distended stomach containing a hatchling *Trachemys scripta elegans* (Red-eared Slider); B) Hatchling Red-eared Slider inside the dissected Cane Toad stomach; C) Hatchling Red-eared Slider recovered from the stomach of a Cane Toad in Bermuda (scale ruler is in cm).

in Bermuda in the 1980s and is now distributed island-wide (Outerbridge 2008. *Chelon. Conserv. Biol.* 7:265–269; Kraus 2009, *op. cit.*). *Trachemys s. elegans* may compete for nesting sites with the only native non-marine turtle species, *Malaclemys terrapin* (Diamond-backed Terrapin). *Malaclemys terrapin* was thought to be introduced to Bermuda until a fossil shell was discovered and dated as being at least 400 years old, consequently, the species is now considered native (Parham et al. 2008. *Biol. Lett.* 4:216–219). *Rhinella marina* (Cane Toad) was introduced to Bermuda from Guyana to control garden pests in the 1800s and is now widely established throughout Bermuda (Lever 2001. *The Cane Toad. The History and Ecology of a Successful Colonist.* Westbury Publishing, Otley, West Yorkshire, 230 pp.; Bacon et al. 2006. *Appl. Herpetol.* 3:323–344). Cane Toads eat a broad range of prey items, including some vertebrates such as Blind Snakes (Pizzatto et al. 2012. *Herpetol. Rev.* 43:469–471; Kelehear 2014. *Herpetol. Rev.* 45:339) and even nestling birds (e.g., *Passer domesticus* [House Sparrow]; Beckmann and Pizzatto 2011. *Herpetol. Rev.* 42:592). Herein I report a hatchling *T. s. elegans* in the diet of *R. marina* in Bermuda.

At 2110 h on 28 September 2015, I collected an adult male *R. marina* (snout–urostyle length = 113.3 mm, head width = 48.3 mm) from near the edge of a small human-made pond on

a golf course at Fairmont Southampton, Southampton Parish, Bermuda (32.2539°N, 64.8308°W; WGS84). The following day the toad was euthanized and dissected for the purpose of parasitological studies. At dissection it was found to have a fully intact hatchling *T. s. elegans* in its stomach (Fig. 1). Hatching occurs April–August in Bermuda and midline carapace length of hatchlings can be as small as 20 mm (Outerbridge 2008, *op. cit.*) Based on the small size of the turtle (midline carapace length = 28.7 mm), the presence of a faint umbilical scar, and the time of year, the turtle was likely a fairly recent hatchling. However, since the umbilical scar was rather faint, it is doubtful that it was predated during its first voyage to water post-hatching. Therefore the toad likely preyed upon the turtle while it was in the water, presumably from the shallows at the pond edge.

Although this observation is not unwelcome, as *T. s. elegans* is invasive in Bermuda, this trophic interaction probably does not occur very often. Over the period 23 September 2015 to 7 October 2015 I collected and dissected 62 adult *R. marina* from a total of five sites surrounding freshwater ponds in Bermuda (32.3083°N, 64.7610°W; 32.2721°N, 64.7977°W; 32.2539°N, 64.8308°W; 32.2629°N, 64.8705°W; 32.3281°N, 64.7064°W; WGS84), and this was the only toad that contained turtle remains.

Because anurans are gape-limited predators and generally do not possess teeth, records of anurans preying upon turtles are scarce; *Lithobates catesbeianus* (American Bullfrog) is an exception, it has consumed several species of hatchling turtles (Dodd 2013. *Frogs of the United States and Canada.* 2 vols. The John Hopkins University Press, Baltimore, Maryland. 982 pp.). To my knowledge, this is the first report of a Cane Toad preying on a turtle (Lever 2001, *op. cit.*).

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CROCODYLIA — CROCODILIANS

ALLIGATOR MISSISSIPPIENSIS (American Alligator). DIET. The food habits of *Alligator mississippiensis* have been thoroughly examined in populations occupying many habitat types; however, dietary information from spring-fed rivers and other lotic ecosystems are scant (Rosenblatt et al. 2015. *Oecologia* 178:5–16). On 2 October 2014, an adult male *A. mississippiensis* (SVL = 130.5 cm; total length = 248 cm) was found dead, floating in the Ocklawaha River, Marion Co., Florida, USA (29.215759°N, 81.985069°W; WGS 1984). When necropsied, we discovered the stomach contained a number of prey items as well as non-prey materials. Prey item remains included seven *Pomacea paludosa* (Apple Snail; 3.47 g), seven dipteran larvae (fly larvae; 0.19 g), two adult coleopterans (Dytiscidae and Elmidae; combined 0.47 g), one *Procambarus spiculifer* (Spring Crayfish; 0.66 g), and one *Pterygoplichthys* sp. (Loricariidae, unidentified species of sucker-mouth armored catfish; 185.66 g). Non-prey material included 0.26 g of submerged aquatic vegetation, 28.35 g of coarse woody debris, and one large stainless steel bush hook (10 cm length,