



FIG. 1. *Corallus grenadensis* ascending to a higher perch with prey, a fledgling *Mimus gilvus* (Tropical Mockingbird), in a coil of its posterior body.

it was empty. Numerous Mockingbirds were observed flying and perching among the oleanders, but none approached the empty nest.

Although this is the first record of predation on *M. gilvus* by *C. grenadensis*, the most intriguing aspect of the predation event was transportation of the dead bird to a higher perch in the oleander bush before commencing deglutition. Similar prey-handling behavior has previously been observed in *C. grenadensis* with *Rattus* (Henderson, *op. cit.*), and in *C. hortulanus* with *Iguana iguana* (da Costa Silva et al. 2012. *Reptiles and Amphibians* 19:187–190) and with a *Caluromys philander* (Bare-tailed Woolly Opossum; da Silva and Henderson 2014. *Reptiles and Amphibians* 21:86–92). We assume dead prey is carried to a higher perch where the boa is less vulnerable to predation while in the defensively compromising behavior of deglutition.

Henderson's fieldwork with *Corallus grenadensis* was funded by the Mary & Terry Kohler Special Charitable Trust, to which he is most appreciative.

RICHARD A. SAJDAK, 4 Callingham Rd., Pittsford, New York 14534, USA (e-mail: rich@sajdak.us); **ROBERT W. HENDERSON**, Milwaukee Public Museum, Milwaukee, Wisconsin 53233, USA (e-mail: henderson@mpm.edu).



FIG. 2. *Corallus grenadensis* commencing to swallow the prey tail-first.

CROTALUS CERBERUS (Arizona Black Rattlesnake). DIET. *Crotalus cerberus* inhabits mesic mountain ranges of the Mogollon Rim and Madrean sky islands of western New Mexico and central Arizona (Stebbins 2003. *A Field guide to Western Reptiles and Amphibians*, 3rd ed. Houghton Mifflin Co., New York, New York. 514 pp.). Recently promoted from a subspecies of *Crotalus viridis* (Western Rattlesnake) to full species status (Douglas et al. 2002. *In* Schuett et al. [eds.], *Biology of the Vipers*, pp. 11–50. Eagle Mountain Publishing, Eagle Mountain, Utah.), few diet records have accumulated for *C. cerberus*. Primarily a diurnal generalist predator, *C. cerberus* may ambush or actively forage among downed woody debris on the forest floor, where it has been documented to consume approximately 15 species of small mammals, three genera of lizards, and three genera of birds: nuthatches (*Sitta* sp.), *Myiarchus cinerascens*



FIG. 1. *Crotalus cerberus* consuming a juvenile *Turdus migratorius* (American Robin).

(Ash-throated flycatcher), and quail (*Callipepla* sp.) (Bergamini et al. 2014. Rare Herpetofauna & Small-mammal Species of Kaibab National Forest, Northern Arizona. Final report to the U.S. Forest Service - FS agreement no. 12-CS-11030700-025. Northern Arizona University, Flagstaff. 76 pp.; Loughran et al. 2012. Herpetol. Rev. 43:114–115). Here we document *C. cerberus* preying upon a species of true thrush.

At 1415 h on 13 July 2014, TF observed an adult *C. cerberus* in the process of consuming a juvenile *Turdus migratorius* (American Robin) in a young *Pinus ponderosa* (Ponderosa Pine) thicket atop a ridge in the Apache-Sitgreaves National Forest, Arizona, USA (34.3908°N, 110.9034°W, WGS 84; 2286 m elev.; Fig. 1). The snake was observed using the base of a pine tree with the posterior portion of its body as leverage in order to consume the prey. TF watched the snake for 10 min during which time it made little progress consuming the bird. This observation supports the perception of *C. cerberus* as a generalist predator, capitalizing on the spatial foraging overlap of ground-dwelling passerines.

PHILIP N. VOGRINC, Department of Biological Sciences, University of Arkansas, Fayetteville, Arkansas, 72701, USA (e-mail: pnvogrin@uark.edu); **TYLER FILES**, 904 Burrow Rd, Arkadelphia, Arkansas 71923, USA (e-mail: tylerfiles55@gmail.com); **JENNY BERVEN**, Rocky Mountain Bird Observatory, Fort Collins, Colorado 80521, USA (e-mail: Jenny.Berven@rmbo.org).

CROTALUS HORRIDUS (Timber Rattlesnake). BEHAVIOR. Waldron et al. (2006. Herpetologica 62:389–398) proposed the use of three behavioral seasons (foraging, breeding, and hibernation) to assist in the interpretation of habitat use by *C. horridus*. However, upon emergence from hibernation, other investigators have noticed that *C. horridus* typically move a short distance from the den and then become fossorial (Sealy 2002. In Schuett et al. [eds.], Biology of the Vipers, pp. 561–578. Eagle Mountain Publishing, Eagle Mountain, Utah), or conceal themselves in transitional habitat, consisting of rocks, logs and leaf litter (Beaupre and Douglas 2012. In Dey et al. [eds.], Proceedings of the 4th Fire in Eastern Oaks Conference, pp. 192–204. USDA Forest Service Northern Research Station General Technical Report NRS-P-102). Our observations with *C. horridus* in the Tar Hollow State Forest (THSF) region of Ohio, USA, also show this post emergence period of concealment, suggesting that recognition of a fourth behavioral season with specific habitat components is appropriate.

From 2013–2016, seven individual *C. horridus* were radio-monitored approximately two times per week at THSF (Table 1). Upon emergence in the spring, they immediately dispersed from the den for an average of 42 m (range = 3–113 m) and concealed themselves under leaf litter, coarse woody debris, or in Greenbriar (*Smilax rotundifolia*)/leaf tangle thickets. Once concealed, the snakes were sedentary for up to seven weeks.

The purpose of this post emergence concealment period is not clear. Beaupre and Douglas (*op. cit.*) suggested the behavior was to “insulate the animals from temperature changes while physiologically acclimatizing to the warmer temperatures outside the den crevice.” Snakes do undergo many physiological changes entering and leaving hibernation (reviewed in Agugliaro 2011. Ecophysiology of Hibernation in Timber Rattlesnakes [*Crotalus horridus*]. PhD Dissertation, University of Arkansas, Fayetteville), and an acclimatization period upon emergence seems logical, but insulation from temperature changes may be less important. Ruben (1976. Herpetologica 32:323–325) reported a thermal advantage from

TABLE 1. Concealment Behavioral Seasons for seven *Crotalus horridus* over four years at Tar Hollow State Forest (THSF) region of Ohio, USA. ¹Distance moved from the den entrance to the concealment location.

Year	Minimum days in concealment	Maximum days in concealment	Distance moved (m) ¹
2013			
Snake 3	22	27	59
Snake 4	15	15	58
Snake 8	24	28	22
2014			
Snake 3	1	27	59
Snake 4	7	18	41
Snake 8	37	50	20
Snake 9	24	26	12
2015			
Snake 3	1	8	59
Snake 4	1	8	12
Snake 8	21	25	3
Snake 9	1	6	46
2016			
Snake 9	25	29	113
Snake 31	6	12	44
Snake 32	8	18	30
Snake 33	6	12	49
Average	13	20	42

nocturnal use of ground litter by *Thamnophis sirtalis*, but during the concealment period for *C. horridus* the sedentary snakes are under cover both day and night and forgo basking openly, even on warm, sunny days.

There are recognizable habitat components used by *C. horridus* during the concealment behavioral season in the THSF region. When implementing forest management practices, land management agencies and landowners should ensure that accumulated leaf litter, coarse woody debris, and/or Greenbriar thickets are protected in a no disturbance zone around dens. At THSF, our data suggest that a minimum distance of 120 m around a den is reasonable.

DENIS CASE (e-mail: deniscase@localnet.com), **MARGARITA APANIUS**, 23071 SR 327, Laurelville, Ohio, USA; **DOUG WYNN**, The Ohio State University, Columbus, Ohio, USA.

CROTALUS HORRIDUS (Timber Rattlesnake). GUT OBSTRUCTION. Fecal contents in the hindgut of large-bodied viperids are known to remain for prolonged periods prior to defecation (Lillywhite et al. 2002. In Schuett et al. [eds.], Biology of the Vipers, pp. 497–506. Eagle Mountain Publishing, Eagle Mountain, Utah), and in compacted form may occasionally present an obstruction (Lillywhite 2014. How Snakes Work: Structure, Function, and Behavior of the World's Snakes. Oxford University Press, New York. 241 pp.). On 8 October 2009 in Warren County, New York, USA (ca. 43°N latitude), a young adult male *C. horridus* was captured near its den along with several others. During processing, a hard, smooth object was detected by palpation immediately anterior to the vent, but because of its large size, an attempt to squeeze it through the cloaca was impossible. The object obstructed the gut and evidently could not have been