

clutches of 6–44 eggs, but clutches exceeding 24 eggs are rare (Fitch 1963. *Copeia* 1963:649–658; Wright and Wright 1957. *Handbook of Snakes of the United States and Canada*. Cornell Univ. Press, Ithaca, New York. 561 pp.). Although information concerning clutch size and husbandry is available for captive *E. o. spiloides* (Merker and Merker 1995. *Reptiles* 3:56–75; Staszko and Walls 1994. *Rat Snakes*. TFH Publications, Neptune City, New Jersey. 208 pp), little is known about the reproductive biology of wild individuals of this subspecies. I report the clutch size of *E. o. spiloides* in Shelby County, Tennessee, USA, at the northwestern extreme of their range (Conant and Collins 1991. *A Field Guide to Reptiles and Amphibians of Eastern and Central North America*. 3rd ed. Houghton Mifflin Co., Boston, Massachusetts. 450 pp.). During 1994–1997, two clutches were obtained from females that were gravid when collected in the field, and one clutch was discovered in a rotting tree stump. Mass ( $\pm 0.5$  g) and SVL ( $\pm 0.5$  cm) were recorded for each female at the time of collection. One female (772.7 g, 124.5 cm) laid 19 eggs and weighed 523.2 g following oviposition. The other female (716.5 g, 122.0 cm) laid eight eggs and weighed 583.4 g following oviposition. Eggs were weighed within 5 h of oviposition; individual egg mass ranged from 10.12–21.74 g (mean  $\pm$  SE = 13.51  $\pm$  0.68). Relative clutch mass (Shine 1980. *Oecologia* 46:92–100) averaged 33.42  $\pm$  8.37%.

The clutch found in the tree stump contained eight eggs positioned ca. 75 cm above ground level in a tree stump measuring 25 cm in basal diameter. Activity by a colony of carpenter ants (*Camponotus* sp.) higher in the stump had encased the snake eggs in a layer of decaying wood grains.

Following either collection or oviposition, eggs were incubated at 26–28°C in plastic boxes containing a 1:2 water:vermiculite (by mass) substrate. Eggs hatched between 30 August and 24 September following an incubation period of 60–62 days. Eleven of the 41 eggs (26.8%) failed to hatch or produced still-born embryos following pipping. The sex ratio of the surviving neonates was 1:1.22 female:male.

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Submitted by **STEPHEN J. MULLIN**, Department of Biology, University of Memphis, Memphis, Tennessee 38152-6080, USA. Present address: Department of Biology, University of Central Arkansas, Conway, Arkansas 72035, USA; (e-mail: smullin@mail.uca.edu).

**EUNETES MURINUS** (Green Anaconda). **CAIMAN PREDATION**. The green anaconda (*Eunectes murinus*) and the spectacled caiman (*Caiman crocodilus*) are two large predators that use very similar habitats in the seasonally flooded savannas of South America. Predation of caimans by anacondas has been reported (Wehckind 1955. *Brit. J. Herpetol.* 2:9–13) and appears to occur often in the llanos (Rivas, unpubl. data). Predation by *Caiman sclerops* on *Eunectes notaeus* has been reported (Medem 1983. *Los Crocodylia de Suramerica II*. Editorial Carrera, Bogota, Colombia. 270 pp.); however, there are no reports of predation by caiman on the larger *E. murinus*. During a seven-year study of the behavioral ecology of the anaconda in the Venezuelan Llanos, we observed spectacled caimans preying on *E. murinus* on three occasions.

On 25 May 1996 we discovered a large caiman (SVL >90 cm) firmly gripping the head of a radio-implanted female anaconda (494 cm total length, 29 kg), who in turn had wrapped herself around the caiman's head and neck. After ca. 15 min. the snake relaxed her coils, apparently losing the struggle with the caiman. When the snake stopped struggling, we interrupted the event to recover the

transmitter. Because this snake had been found severely wounded two months before this observation, it is likely that she was not in top physical shape, and this may have played some role in the attack.

Another observation took place on 29 April 1996 in a roadside channel covered partially by water hyacinth (*Eichhornia*). A caiman (SVL >90 cm) was on the left side of the anaconda, gripping it by the anterior 1/5 of its body. The snake had thrown a loop over the dorsal surface of the caiman and wrapped its posterior body and tail around the caiman's left hind leg. The snake, although much smaller than the caiman, was wrapped so tightly around the hind leg that the head of the caiman was pulled towards its hindquarters. The snake periodically tightened its loop, causing the caiman to flip over to the right and under the water. The caiman repeatedly attempted to drag the snake out of the water, but each time the anaconda managed to flip the caiman and pull it back under water. The wrestling match continued for five hours, often punctuated by both animals submerging for periods of 10–15 min. Finally, as the light faded (1900 h), we saw an unidentified caiman of similar size leaving the area with no snake in its mouth. Five days later we found a dead male anaconda (247 cm total length, 5.5 kg), with wounds from a caiman bite on the anterior 1/5 of its body. The wounds suggest a caiman with estimated measurements of 121 cm SVL, 43 kg mass, and 29.5 cm skull length (Thorbjarnarson, unpubl. data). The snake showed no signs of decomposition, indicating a recent death. We surmise that the snake escaped from the caiman but subsequently died from its wounds. Judging by the relationship of masses, we believe that it was the caiman trying to eat the snake and not vice-versa.

The last observation (19 March 1997) also involved a large caiman (SVL >90 cm) attacking a small female anaconda (152 cm total length, 1.7 kg). The caiman was in a small roadside pool with the snake in its mouth. Upon our approach, the caiman dropped the seriously wounded female anaconda. Although the snake survived, we consider this a predation event because the snake was not struggling when we arrived and thus would not have survived without our intervention.

In total, we have found twelve dead anacondas (six males and six females) during the study. Based on our observations and examination of the anacondas (presence of deep circular bite marks matching the size and position of caiman teeth), we determined that all six males and two of the females were killed by spectacled caimans. Interactions between these two sympatric reptiles seem to be quite common.

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Submitted by **JESUS A. RIVAS**, Department of Ecology and Evolutionary Biology, University of Tennessee, Knoxville Tennessee 37996-0900, USA (e-mail: jrivas@utk.edu), **JOHN B. THORBJARNARSON**, Wildlife Conservation Society, 2300 Southern Boulevard, Bronx, New York 10460-1099, USA, **MARÍA C. MUÑOZ**, Graduate Program in Ecology, Departamento de Biología de Organismos, Universidad Simón Bolívar, Caracas, Venezuela, and **RENÉE Y. OWENS**, World Society for the Protection of Animals, 29 Perkins Street, P.O. Box 190, Boston Massachusetts 02130, USA.