

closely follow those he summarized, we believe this account documents that same male combat exists within the mating system of *R. capito*.

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RANA PRETIOSA (Spotted Frog). **BASKING BEHAVIOR.** On 16 April 1993, a male *Rana pretiosa* (60 mm SVL) was perched horizontally on a dead cattail (*Typha* sp.) leaf about 30 cm above the water in a 0.2 ha marsh 1 km north of Charleston, Wasatch Co., Utah, USA. Air and water temperatures were 18.5°C and 13.5°C, respectively. The frog was in full sunlight from 1350 until 1415 h when we captured it to obtain measurements. This observation is noteworthy given the aquatic habits of *R. pretiosa* (Nussbaum et al. 1983. *Amphibians and Reptiles of the Pacific Northwest*. Univ. Idaho Press. Moscow, 332 pp.). Several *R. pretiosa* at this site had leeches (*Helobdella stagnalis*; P. Hovingh, pers. comm.), although the individual we observed did not. Basking also may increase growth rates, but there may be other unknown advantages conferred to the animal (Freed 1980, *Physiol. Zool.* 53:433-444). We thank P. S. Corn and P. Hovingh for suggestions regarding this note.

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CROCODYLIA

CAIMAN LATIROSTRIS (Broad-snouted Caiman). **NESTING.** Although *Caiman latirostris* is widely distributed in southeastern South America (Medem 1983. *Los Crocodylia de Sur America*. Vol. 2. Ed. Carrera, Bogota. 270 pp.), the reproductive biology of the species remains poorly known (Thorbjarnarson 1992. *Crocodyles: An Action Plan for their Conservation*. Gland, Switzerland: IUCN). *Caiman latirostris* is considered an endangered species due to habitat destruction and over exploitation (Groombridge 1987. *In* Webb et al. (eds.), *Wildlife Management: Crocodiles and Alligators*, pp 9-21. Surrey Beatty and Sons Pty. Ltd., Sydney), hence information about all aspects of its reproductive biology is needed to formulate plans for the species' conservation. In this note we present data on nest characteristics, clutch size, and egg size from eight nests found on floating grass mats.

This study is part of an environmental impact study carried out by Companhia Energética de São Paulo (CESP) in the area to be inundated by Porto Primavera Dam, Paraná River, on the border between São Paulo and Mato Grosso do Sul states. The surveys were conducted between parallels 20°48' and 22°30' S. Nests were located by flying over the floodplains of the Paraná River and tributaries in a Bell 206 helicopter on 1 February 1993 and 25 February 1994. Studies on reproductive ecology of *C. latirostris* have been hindered mainly because it is difficult to locate their nests. However, searching from the air facilitated finding nests on floating grass mats. We spent about 30 minutes/flight to locate each nest. Aerial surveys of nests are frequently used in studies of crocodiles and alligators (e.g., Webb 1987. *In* Webb et al. (eds.), *op. cit.*, pp. 107-124; Joanen and McNease 1989. *Amer. Zool.* 29:987-998). However, the technique has not been frequently used in South America (Campos 1993. *J. Herpetol.* 27:127-132). Based on our experience, we recommend the use of helicopters to locate nests of *Caiman latirostris*.

TABLE 1. Sizes of broad-snouted caiman nests, eggs, and embryos from the area to be inundated by the Porto Primavera Dam. Nests 1-5 were found in January 1993, and nests 6-8 during February 1994. LE = mean egg length, WE = mean egg width, and SD = standard deviation.

#	nest			eggs			embryos	
	length (cm)	width (cm)	height (cm)	number	LE ± SD (mm)	WE ± SD (mm)	length (mm)	age (days)
1	150	150	—	—	—	—	65	19
2	108	105	52	24	74 ± 3	41 ± 2	160	35
3	120	110	40	17	63 ± 2	41 ± 1	73	21
4	102	100	40	24	67 ± 3	44 ± 1	123	32
5	98	95	45	33	68 ± 2	44 ± 1	140	33
6	102	100	45	23	64 ± 4	40 ± 1	220	60
7	135	111	50	22	69 ± 4	40 ± 1	198	45
8	113	100	40	8	72 ± 2	42 ± 1	210	58
mean	116.0	108.9	44.5	21.6	68.4	42.4	148.6	37.9
SD	18.2	17.5	4.9	7.6	4.5	1.9	59.6	15.4

We inspected five nests of *C. latirostris* in 1993 and three nests in 1994. The nests were located on floating grass mats dominated by *Cyperus prolixus* and *Scirpus cubensis*. Other common macrophyte species were *Cyperus surinamensis*, *Setaria geniculata*, and *Habernaria* sp. We measured the height, length, and width of each nest, and counted and measured the eggs. We also removed one egg from each nest and measured the total length of the embryo. We used Crawshaw's table (1989, Nesting Ecology of the Paraguayan Caiman (*Caiman yacare*) in the Pantanal of Mato Grosso, Brazil. Unpubl. M.S. Thesis, Univ. Florida, Gainesville). developed for *C. crocodilus yacare*, to estimate the age of the egg from the size of the embryo.

Females were present at two nests. Nests contained 8–33 eggs. The nest with 8 eggs was partially inundated. The mean clutch size overall was 21.6, and excluding the partially inundated nest was 23.8 eggs ($N = 6$, $SD = 5.2$) (Table 1). The estimated age of embryos indicates that laying occurred in late December, while hatching occurred during early March in both years. The clutch sizes found in this study were smaller than those reported in earlier studies (Larriera 1993. *In* Verdade et al. (eds.) Proceedings of the 3rd Workshop on Conservation and Management of the Broad-winged Caiman, pp 61–69. ESALQ/USP, Piracicaba, Brasil). This is the first report of *C. latirostris* nesting on floating grass mats. We thank V. Pott for identifying the plants, and M. Cotovicz and E. Dantas for helping in the field.

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TESTUDINES

GOPHERUS POLYPHEMUS (Gopher Tortoise). **BURROW ASSOCIATE**. The burrow system created by *Gopherus polyphemus* plays an important part in the ecology of the upland ecosystem, providing shelter from extreme temperatures, light, fire, and predation. Jackson and Milstrey (1989. *In* J. E. Diemer et al. (eds.), Gopher Tortoise Relocation Symposium Proceedings. Florida Game and Fresh Water Fish Commission Nongame Wildlife Tech. Rpt. No. 5:86–98) list 362 species recorded from *G. polyphemus* burrows (60 vertebrates and 302 invertebrates). In this note we report a previously unrecorded species utilizing burrows.

A *Lampropeltis getula* (common kingsnake) entered an active *G. polyphemus* burrow on 22 May 1990 at Tenoroc State Reserve located approximately 4 km NE Lakeland, Polk Co., Florida, USA. The female snake (SVL = 97 cm, TL = 109.4 cm) was trapped using a double-opening funnel trap (Fitch 1951. *Herpetologica* 7:77–80), sexed, measured, marked, photographed, and released.

On 16 May 1991, during a *G. polyphemus* burrow survey at the same location, a male *L. getula* (SVL = 129 cm, TL = 137 cm) was trapped in a double-opening funnel trap at an abandoned subadult burrow and processed in the same manner.

Both specimens were caught at burrows associated with open, reclaimed phosphate mined land. Burrows were located within 76 m of foraging habitat, extensive vegetative cover, and shallow water. The interburrow distance was 31.7 m.

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LACERTILIA

ANOLIS UNIFORMIS (NCN). **FEEDING BEHAVIOR**. Insectivorous lizards are often characterized as consuming prey that 1) require low pursuit and handling costs (Greene 1982, *In* D. Mossakowski and G. Roth (eds.), Environmental Adaptation and Evolution, pp. 107–128. Gustav Fischer, Stuttgart) and 2) are limited in size by lizard body size (Schoener 1968. *Ecology* 49:704–726). The maximum prey size for some insectivorous lizards may be best predicted by the circumference of the lizard's mouth (DeMarco et al. 1985. *Copeia* 1985:1077–1080). Some of my observations on *Anolis uniformis* feeding behavior are inconsistent with these characterizations, instead suggesting this species may regularly feed on prey requiring high handling costs and which are only partially consumed.

During May through July 1987, I conducted a field study on the ethology of *A. uniformis* at Los Tuxtlas Tropical Biological Preserve, Veracruz, México. During 59.5 h of focal animal observation, 18 feeding bouts were observed. The majority of these (15; 83%) involved small prey that were consumed whole. On three occasions, however, three different individuals attacked and consumed parts of much larger than average prey (all Diptera). These observations are interesting for two reasons. First, these lizards were not consuming prey whole and all of these insects appeared larger than the lizard's mouth circumference. In one instance, the head, prothorax, and one wing of a large Diptera were consumed. The length of the remaining part suggests this insect, whole, may have been inconsumable by the *A. uniformis*. In a second instance, half of the head capsule of another Diptera was consumed. Using the procedure of DeMarco et al. (*op. cit.*), this prey's circumference was roughly 2.9 times greater than the circumference of the predator's mouth. These lizards seemed to be performing behaviors promoting disarticulation of their prey. Constant mouth opening and closing occurred with the jaw at the juncture of the head and thorax of the flies. The lizards also wiped the insects against the substrate, resulting in wing removal and probably contributing to decapitation.

The second noteworthy aspect of these observations is that although only three of 18 (17%) *A. uniformis* feeding bouts involved large prey, they accounted for more than 94% of the observed handling time. The handling time in these three encounters lasted an average of 39.3 min (21, 37, 60 min), while none of the other 15 bouts lasted more than 10 sec.

For at least some insectivorous lizards, maximum prey size may be more properly related to the size of prey body regions and the ability to disarticulate prey; in such instances, the time devoted to prey handling may be substantial.

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