

1986. *Biology of Amphibians*, McGraw-Hill, New York, 670 pp.). In some *Bufo* species this is accompanied by a lateral tilting of the body towards the predator (Hanson and Vial 1956. *Herpetologica* 12:141-149). P. Harlow (pers. comm.) suggests that *U. laevigata* is toxic and the presence of enlarged parotoid glands (Tyler et al. 1981. *Aust. J. Zool. Suppl. Ser.* 79:1-64) supports this suggestion. The orange patches on the front of the thigh in *U. laevigata* may represent hidden aposematic coloration similar to that seen in *Bombina variegata* (Duellman and Trueb, op. cit.). There is, however, no evidence at present to support this speculation. Further work on defensive behavior and toxicity of Australian frogs appears warranted.

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CROCODYLIA

CROCODYLUS ACUTUS (American Crocodile). **SOCIAL BEHAVIOR.** Crocodylians have some of the most highly developed social behaviors of any reptile. Many of the advertisement displays used by crocodylians involve stereotyped body posturing, headslapping, and loud vocalizations referred to as roars or bellows. Nevertheless, the one published study of *C. acutus* social behavior (Garrick and Lang 1977. *Am. Zool.* 17:225-239) did not verify the presence of a vocal component to the advertisement display.

While maintaining a pair of *C. acutus* in Venezuela (Funa Pecuario Masaguaral; 8°34'N, 67°35'W) for captive breeding purposes, I had the opportunity to observe male advertisement displays on six occasions (7 April, 28 September, 5 December 1988, 13 February, 21 March, and 18 April 1989). The timing of these displays largely coincided with the species' courtship (November–January) and nesting (February–March) seasons on Masaguaral. The male (3.3 m TL) entered a head-elevated, tail-arched posture in shallow water, similar to the posture described in Garrick and Lang (op. cit., Fig. 2f) for *C. acutus* subaudible vibrations. From this posture, the male proceeded to headslap 2 to 3 times, then produced 1 to 5 loud roars (mean = 2.5 roars per advertise-

ment display). All displays occurred in the morning (0656 to 0857 h) and were very similar to the advertisement display of male Orinoco crocodiles (*C. intermedius*) that were housed at the same crocodile breeding facility (pers. obs.). The female (2.8 m TL) never produced headslaps or roars.

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LACERTILIA

ANOLIS CHLOROCCYANUS (Hispaniolan Green Anole). **BEHAVIOR.** On 18 June 1991, on natural vegetation at the Casa de Campo resort complex near La Romana, La Romana Province, República Dominicana, we observed two instances of aggressive behavior in *Anolis chlorocyanus*. On the first occasion at 1410 h, ca. 1.5 m above the ground on a small tree (DBH = 10 cm), a large male (SVL estimated by eye at ca. 65 mm) was observed with the entire head of a female *Anolis cristatellus* (SVL ca. 40 mm) in its mouth. During the 2-3 min span of observation, the *A. chlorocyanus* made concerted efforts to reposition the *A. cristatellus* in an apparent effort to facilitate swallowing. The latter was struggling frantically, thrashing its entire body. Finally, during one attempt at realignment, the *A. cristatellus* managed to escape, fell to the ground, and rapidly disappeared into the undergrowth. We did not observe initiation of the encounter, and the *A. cristatellus* appeared to be too large for consideration as food, but we assume that the *A. chlorocyanus* was treating the *A. cristatellus* as prey. Aggression or territorial defense, however, cannot be ruled out.

The second observation of aggressive behavior was between two large (ca. 65 mm SVL) male *A. chlorocyanus*. At 1430 hrs, at a height of ca. 3 m on a small tree (DBH = 18 cm), one male was observed with its mouth completely encompassing the head of the other. Again, initiation of the encounter was not observed, and we assumed it to be a territorial dispute gone awry (interlocking jaws being a much more common situation). After less than two minutes, the latter individual managed to escape and fell to the ground. This lizard immediately climbed an adjacent tree to

the same height as that still occupied by the first animal, then dewlapped repeatedly before further ascending the tree, precluding additional observation. Interestingly, the male in the grasp of the other had assumed a bright blue color, in vivid contrast to the bright green of the second individual and that normally associated with active males. It retained this color throughout the period of observation.

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SERPENTES

AGKISTRODON PISCIVORUS PISCIVORUS (Eastern Cottonmouth). **DIET.** On 4 May 1991 at ca. 1600 h, while on a herpetology class field trip, we discovered a dead red-bellied water snake (*Nerodia erythrogaster erythrogaster*, ca. 1.3 m TL) lying near the shore at Steel Creek Bay, a wetland on the Savannah River Site in Barnwell County, South Carolina. The snake was on land, ca. 1 m from the water's edge and 1 m from the edge of a dirt road bordering the wetland. No visible cause of death was apparent, but the snake obviously had been dead for several hours based on the odor. The snake was placed alongside the road for the class to examine and left in this spot.

After dark, at 2100 h, we stopped at the same location to show a new member of the field trip the dead water snake. To our surprise the water snake was found in the water being consumed by an *Agkistrodon p. piscivorus* (also ca. 1.3 m TL) which had swallowed the first several centimeters of the dead snake.

When several students got out of the vehicle, the cottonmouth quickly released its grip and swam away. We again put the dead snake back on land when we left the area. Upon returning to the site at 2130 h we found the *A. piscivorus* now on land with ca. 30 cm of the water snake in its mouth. During the next 20 min the *A. piscivorus* released its hold and backed off of the water snake completely two times. On both occasions the cottonmouth returned to the water snake and continued trying to swallow it. When the cottonmouth released the water snake for the third time, it retreated to the water. However, as we left the area, the cottonmouth was swim-