Herpetological Review

Volume 42, Number 3 – September 2011

years ago in heavily grazed rangeland, and this account marks the first sighting of California Red-legged Frogs at this location. The pond and its surroundings are devoid of vegetation; the newly transformed frogs were basking in shallow water or sought cover in refugia created by deep cow tracks at the pond edge. I also observed, collected, and dispatched seven adult American Bullfrogs present at the pond and analyzed their stomach contents. Among the seven American Bullfrogs (five gravid females and two males), each of four females (SVL 136–144 mm) had one newly transformed juvenile (SVL 26–31 mm) California Red-legged Frog in their stomach, and two of them had two each. Each of the seven American Bullfrog stomachs also contained at least one California Newt (*Taricha torosa*) larva (≤ 3) and aquatic insects (notonectids, ≤ 13).

Predator-prey interactions are seldom witnessed in the wild due to their short duration and disturbance by observer presence (Major 1990. Ibis 132:608–612), but predation events may be inferred from the stomach contents of predators. The above incident, and those described by Cook and Jennings (2001, *op. cit.*) and Cook (2002, *op. cit.*), suggest that predation by American Bullfrogs on California Red-legged Frogs might be more widespread than previously observed. Both species occupy the same ponds with some regularity (Cook and Jennings 2007. Herpetologica 63[4]:430–440). Considerable overlap occurs in the preferred diet of adult American bullfrogs and California Red-legged Frogs (Hayes and Tenant 1985. Southwest. Nat. 30[4]:601–605), and continued loss of habitat concentrates resources, bringing these two species together with greater frequency.

In a controlled experiment (Corse and Metter 1980. J. Herpetol. 14[3]:231–238) adult American Bullfrogs that were force-fed a diet of juvenile conspecifics completely digested their meal in 41 h. At the Sonoma Co. stock pond described above, two of the American Bullfrogs had each eaten two juvenile California Red-legged Frogs. If each adult American Bullfrog ate two California Red-legged Frogs, given the observed rate of digestion described above, the seven adult American Bullfrogs present could potentially consume all 23 of the observed juvenile California Red-legged Frogs over a four-day period. Adult California Red-legged Frogs probably prey on juvenile American Bullfrogs, but the coexistence of these two frog species at ponds may belie a dynamic predator-prey relationship that favors the larger American Bullfrogs. The presence of American Bullfrogs in historical California Red-legged Frog habitat could pose a serious threat to the recovery of this threatened species.

American Bullfrogs were collected under a California fishing license (059753-12). I thank D. G. Cook for his continued support.

JEFFERY T. WILCOX, University of California, Berkeley, Blue Oak Ranch Reserve, 23100 Alum Rock Falls Rd., San Jose, California 95127, USA; jtwilcox@berkeley.edu.

***SCINAX NASICUS* (Lesser Snouted Treefrog) and *SCINAX ACUMINATUS* (Mato Grosso Snouted Treefrog). REFUGIA.** *Scinax nasicus* occurs in Paraguay, northern and central Argentina (south to Córdoba and Buenos Aires provinces), Uruguay, eastern Bolivia, and southern Brazil. *Scinax acuminatus* occurs in southern Mato Grosso and Mato Grosso do Sul (Brazil), Paraguay, Bolivia (Santa Cruz), and northern Argentina (Frost 2011. Amphibian Species of the World: an Online Reference. Version 5.5, 31 Jan 2011. Electronic database accessible at http://research.amnh.org/vz/herpetology/amphibia/, American Museum of Natural History, New York). From Sept–Dec 2009, we conducted surveys ca. 10 km NE Corrientes City, Argentina (27.4321°S, 58.7466°W). The study site

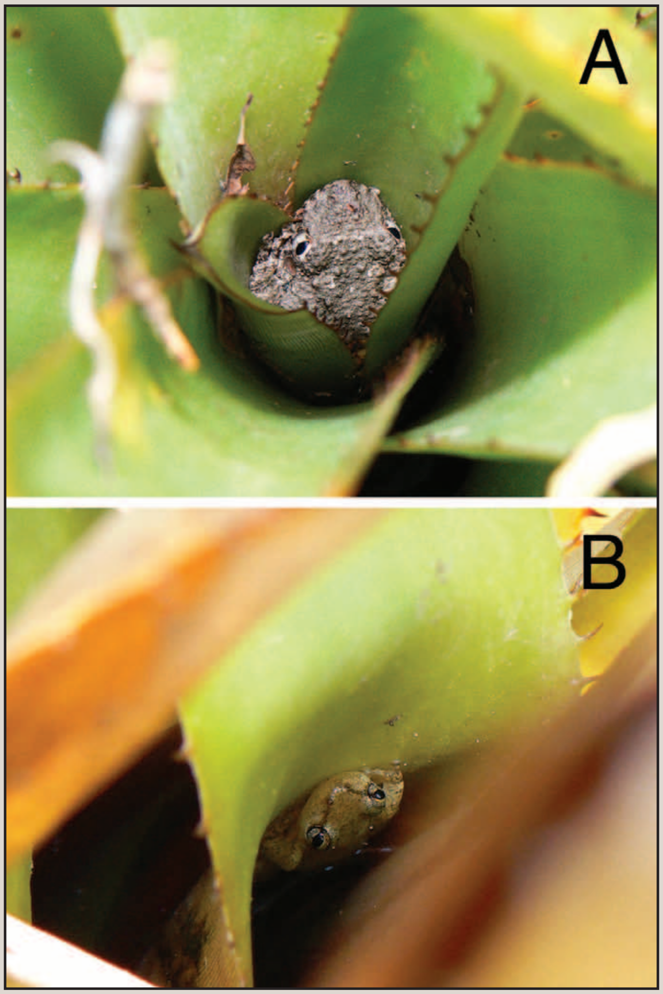

Fig. 1. A) *Scinax acuminatus* and B) *Scinax nasicus* hidden inside the axils of *Aechmea distichantha*.

is part of the Chacoan Domain, Oriental Chaco District (Cabrera and Willink 1980. Biogeografía de América Latina. Secretaría Federal OEA. Monografía 13:1–122; Carnevali 1994. Fitogeografía de la Provincia de Corrientes. Gobierno de la provincia de Corrientes e INTA, 324 pp.), and is characterized by the presence of numerous temporary, semi-permanent, and permanent water bodies. Mean annual precipitation is 1500 mm and mean annual temperature is 23°C. According to Carnevali (1994, *op. cit.*), the original plant formation at this site was *Schinopsis balansae* "quebracho" forest, which is currently extremely degraded and largely replaced by sclerophyllous forest with a prevalence of *Prosopis affinis, P. nigra, Acacia caven, Celtis* sp., and numerous colonies of *Aechmea distichantha* and *Bromelia* sp.

Numerous amphibian species are associated with bromeliads, using them strictly as shelter or for entire life cycle, reproducing and feeding inside the plant axil (Peixoto 1995. Rev. Univ. Rural, Sér. Ciênc. da Vida 17[2]:75–83). In the study area, the bromeliad *Aechmea distichantha* mainly is used as a refuge for various species of amphibians and reptiles. This species has a high structural complexity and the capacity to store water for long periods (phytotelmata), such that individual plants harbor a diversity of arthropods and thus provide shelter and food for amphibians.

In the study period we found *Scinax nasicus* (N = 60) and *S. acuminatus* (N = 5) using *A. distichantha* as refugia (Figs. 1A, B).

Often, we recorded more than one frog per plant. In some cases, we found up to five specimens of *S. nasicus* (juveniles) inhabiting the same plant, each positioned in different leaf axils. *S. acuminatus*, however, was found with much less frequency. The observations were made between 9000 to 1800 h and in all cases, the frogs were hidden, with no evidence of activity such as eating or vocalization. Unfortunately, in September 2010, the study area habitat was completely lost due to land conversion by property owners.

MARTA I. DURÉ (e-mail: martadure@yahoo.com) and **EDUARDO F. SCHAEFER** (e-mail: eclschaefer247@yahoo.com.ar), Centro de Ecología Aplicada del Litoral CECOAL-CONICET, Ruta 5, Km 2,5. C.P. 3400, Corrientes, Argentina.

TESTUDINES — TURTLES

***CHELONIA MYDAS AGASSIZII* (East Pacific Green Seaturtle) DIET.** The East Pacific Green Turtle is considered the most carnivorous of all Green Seaturtle subpopulations worldwide (Bjorndal 1997. *In* Lutz and Musick [eds.], The Biology of Sea Turtles, pp. 199–231. CRC Press, Boca Raton, Florida). Novel Green Turtle diet items have been reported, including the Sea Pen, *Ptilosarcus undulatus* (Seminoff et al. 2002. Copeia 2002:266–268), pelagic red crabs, *Pleuroncodes planipes* (Lopez-Mendilaharsu et al. 2005. Aquat. Conserv. Mar. Freshwater Ecosyst. 15:259–269), tunicates and crustaceans (Amorocho and Reina 2007. Endang. Species Res. 3:43–51), hydrozoans, scyphozoans, nematodes, annelids, mollusks (Carrion-Cortez et al. 2010. J. Mar. Biol. Assoc. U.K. 90[5]:1005–1013), and sponges, *Craniella* sp. and *Suberites aurantica* (Rodriguez-Baron 2010. MS thesis. Centro Interdisciplinario de Ciencias Marinas [CICIMAR-IPN]. 98 pp.). It has been suggested that such dietary diversity is a response to the energy requirements of these animals in the early life stages, facilitating nutritional (e.g., protein) gains for development and maturation (Bjorndal 1985. Copeia 1985[3]:736–751) and optimizing digestion time (Amorocho and Reina 2008. J. Exp Mar. Biol. Ecol. 360:117–124). It has also been noted that *C. mydas* diet is influenced by resource availability (Balazs 1980. NOAA Tech. Memo. NOAA-TM-NMFS-SWFS-7; Garnett et al. 1985. Wildl. Res. 12:103–112) and that diet selection is linked to the composition and capacity of the hind-gut microflora, which may change as turtles grow and/or occupy different habitats (Bjorndal 1980. Mar. Biol. 56:147–154).

During two field trips in 2009 we collected food samples from the esophagi of 21 Green Turtles (body mass 14–65 kg, and straight carapace length [SCL ± 0.1 cm] 40.3–73.4 cm; mean SCL = 54.83 ± 8.36 cm) captured at Laguna Ojo de Liebre (LOL; 27.5833–27.9166°N, 113.9666–114.1666°W) located in the El Vizcaino Biosphere Reserve, Baja California Sur, Mexico. The anemone *Palythoa ignota* was present in 18 of the total samples, and it comprised 68.76% of the total volume. Turtle mean body condition index (BCI) was 1.48 (range = 1.25–2.06), similar to the values reported for previous studies (Koch et al. 2007. Mar. Biol. 153[1]:35–46; Seminoff et al. 2003. J. Mar. Biol. Assoc. U.K. 83:1355–1362) which indicates that animals were in good health (Bjorndal et al. 2000. Ecol. Appl. 10:269–282). To our knowledge, this is the first report of targeted anemone consumption by *Chelonia mydas agassizii*. The fact that *P. ignota* occurred in such high proportion among a substantial number (85.7%) of turtles suggests that this colonial cnidarian is a major food resource for these turtles at LOL, and that Green Turtles have the capacity to assimilate nutrients from this invertebrate species (Bjorndal 1990. Bull. Mar. Sci. 47[2]:567–570). We thank the Grupo Tortuguero de las Californias A.C. for their assistance in the logistics field work.

JUAN M. RODRIGUEZ-BARON and **RAFAEL RIOSMENA-RODRIGUEZ,** Marine Botany Research Program, Marine Biology Department, UABCS, Apartado Postal 19-B, km 5.5 Carretera al Sur, La Paz B.C.S. 23080, Mexico (e-mail: juanmaroba@gmail.com); **JEFFREY A. SEMINOFF,** NOAA-National Marine Fisheries Service, Southwest Fisheries Science Center, 8604 La Jolla Shores Drive, La Jolla, California 92037, USA; **GUSTAVO HERNANDEZ-CARMONA,** CICIMAR-IPN, Av. Instituto Politécnico Nacional, Col. Playa Palo de Santa Rita, C.P. 23096 La Paz, B.C.S. México.

CHELONIIDAE (Marine Turtles). HATCHLING PREDATION. Sea turtle hatchlings are preyed on by a wide variety of predators (Stancyk 1982. *In* K. A. Bjorndal [ed.], Biology and Conservation of Sea Turtles, pp. 139–152. Smithsonian Institution Press, Washington, D.C.). However, reports of snakes preying on sea turtle hatchlings are rare. Hendrickson (1958. Proc. Zool. Soc. Lond. 130[4]:455–535.) stated that egg collectors on the east coast of Peninsular Malaysia observed mangrove snakes (*Boiga dendrophila*) and pythons (*Python reticulatus*) in the act of swallowing baby turtles (presumably *Chelonia mydas* hatchlings). LeBuff (1990. The Loggerhead Turtle in the Eastern Gulf of Mexico. Caretta Research, Inc. 216 pp.) noted a black racer, *Coluber constrictor priapus*, discovered in a *Caretta caretta* nest on the Gulf Coast of Florida but did not mention actual predation on eggs or hatchlings. Foote et al. (2000. Proc. Sea Turtle Symp. 18:189–190) mentioned the coachwhip as a predator on sea turtles on the Gulf Coast of Florida but did not provide details. Here we provide the first documentation of an Eastern Coachwhip, *Coluber* (= *Masticophis*) *flagellum flagellum*, preying on a hatchling sea turtle (apparently a *C. caretta*).

Since 1997 we have conducted sea turtle nesting surveys daily along the northern 9.7 km of Jupiter Island on the east coast of Florida in Martin Co. St. Lucie Inlet Preserve State Park comprises the northern 4.3 km of this survey area. Surveys are conducted every morning throughout the sea turtle nesting season (March–October). Three species of sea turtles (*Caretta caretta*, *Chelonia mydas*, and *Dermochelys coriacea*) nest every year in this area and *Lepidochelys kempii* has been documented nesting on three occasions (in 2005, 2008, and 2009). In addition to recording all sea turtle emergences, we also mark a sample of nests for the purpose of documenting nest fate and reproductive success. During the surveys, the beach is checked for hatchling tracks in an effort to document hatchling disorientation.

During the survey on the morning of 29 August 29 2010, one of us (IA) observed the tail of a *C. f. flagellum* protruding from an Atlantic Ghost Crab (*Ocypode quadrata)* burrow low on the beach at St. Lucie Inlet Preserve State Park (Fig. 1). As the burrow was approached, the snake's head appeared from an adjacent burrow approximately 30 cm to the south. As the snake emerged, a live sea turtle hatchling was observed in its jaws. The snake retracted into the burrow when approached, but reemerged after several minutes. As the snake began to emerge, a wave washed over the burrows, filling them with water and causing the snake to emerge rapidly with the hatchling still in its jaws (Fig. 2). The snake retreated quickly into the dunes, and no further observations were made. The snake was estimated to be approximately 150 cm long.

Based on direct observations and examination of photographs, the hatchling appeared to be a *C. caretta* though it would not be possible to distinguish it from a *L. kempii* or *Eretmochelys*

ISSN 0018-084X

VOLUME 42, NUMBER 3
SEPTEMBER 2011

Herpetological Review

The Official News-Journal of the

SOCIETY FOR THE STUDY OF AMPHIBIANS AND REPTILES

SSAR BUSINESS 323
NEWSNOTES 324
MEETINGS 325
CURRENT RESEARCH 326
OBITUARIES 330
INSTITUTIONAL PROFILE 336
HERPETOCULTURE NOTES 368
GEOGRAPHIC DISTRIBUTION 383
NATURAL HISTORY NOTES 405
PUBLICATIONS RECEIVED 455

POINTS OF VIEW

Plural versus Singular Common Names for Amphibian and Reptile Species
KEVIN DE QUEIROZ 339

ARTICLES

Skilled Forelimb Movements and Extractive Foraging in the Arboreal Monitor Lizard *Varanus beccarii* (Doria, 1874)
R. W. MENDYK and H.-G. HORN 343

Urban Students and Urban Serpents: The Effects of Hands-on Learning in Student Perception of Snakes
E. GANGLOFF 349

Status and Distribution of the Rim Rock Crowned Snake, *Tantilla oolitica*
K. N. HINES 352

Noteworthy Records of Amphibians and Reptiles from Zacatecas, México
I. T. AHUMADA-CARRILLO, O. VÁZQUEZ-HUIZAR, J. VÁZQUEZ-DIAZ, and U. O. GARCÍA-VÁZQUEZ 397

New and Noteworthy Records of Amphibians and Reptiles from Reserva de la Biósfera Bosawas, Nicaragua
S. L. TRAVERS, J. H. TOWNSEND, J. SUNYER, L. A. OBANDO, L. D. WILSON, and M. A. NICKERSON 399

New County Records from Grundy County, Tennessee on the Mid-Cumberland Plateau of Southern Tennessee, USA
A. W. CANTRELL, Y. WANG, and C. J. SCHWEITZER 403

TECHNIQUES

A New Technique for the Production of Large Numbers of Clay Models for Field Studies of Predation
J. YEAGER, C. WOOTEN, and K. SUMMERS 357

Toes versus Swabs? Evaluation of the Best Tissue Source for Detection of *Batrachochytrium dendrobatidis* in Field-Caught Amphibians
P. A. BURROWES, A. ALICEA, A. V. LONGO, and R. A. JOGLAR 359

Comparison of Immobilization Methods for PIT Tagging Three-toed Amphiuma (*Amphiuma tridactylum*)
J. A. POJMAN, SR., J. A. POJMAN, JR. and C. L. FONTENOT, JR. 362

Photographing Herpetofauna in Nature
Y. L. WERNER 364

HERPETOCULTURE

Observations on the Captive Reproduction of *Colosthethus pratti* (Boulenger, 1899)
R. L. HILL, J. B. KAYLOCK, R. W. GAGLIARDO, E. K. TIMPE, E. GRIFFITH, and H. ROSS 365

AMPHIBIAN DISEASES

Confirmed Amphibian Chytrid in Mount Mulanje Area, Malawi
W. CONRADIE, J. HARVEY, A. KOTZÉ, D. L. DALTON, and M. J. CUNNINGHAM 369

Rapid Assessment of the Presence of *Batrachochytrium dendrobatidis* in Bolivian Andean Frogs
I. DE LA RIVA and P. A. BURROWES 372

Additional Reports of the Amphibian Chytrid Fungus *Batrachochytrium dendrobatidis* from Georgia, USA
R. L. HILL, M. G. LEVY, E. K. TIMPE, and J. B. KAYLOCK 376

Occurrence of *Batrachochytrium dendrobatidis* in Amphibian Populations of Okomu National Park, Nigeria
A. A. IMASUEN, M. S. O. AISEN, C. WELDON, D. L. DALTON, A. KOTZE, and L. H. DU PREEZ 379

BOOK REVIEWS

The Chinese Alligator, Ecology, Behavior, Conservation and Culture
Reviewed by R. WHITAKER 448

Hunters in the Trees: A Natural History of Arboreal Snakes
Reviewed by A. FIGUEROA 449

Amphibians and Reptiles of Margarita, Coche, and Cubagua
Reviewed by C. L. BARRIO-AMORÓS and O. M. LASSO-ALCALÁ 451

Common Kingsnakes—A Natural History of *Lampropeltis getula*
Reviewed by J. BOUNDY 453