

## LETTERS

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### OBSERVATION OF THE CHIMANGO CARACARA (*MILVAGO CHIMANGO*) FEEDING ON COMMON LESSER TOADS (*BUFO FERNANDEZAE*)

The Chimango Caracara (*Milvago chimango*) is a member of Falconidae that occurs throughout southern South America: Argentina, Chile, Uruguay, Paraguay, and southern Brazil (Olrog 1995, Las Aves Argentinas, Editorial El Ateneo, Buenos Aires, Argentina). Various studies have described the Chimango Caracara as an opportunistic predator and scavenger. Its diet has been reported to include arthropods, gastropods, worms, vertebrates, vegetables, and carrion (Barros Valenzuela 1960, *Rev. Univ.* 44–45:31–37, Nuñez and Yañez 1981, *Not. Mens. Mus. Nac. Hist. Nat. Chile* 25.5–9, Nuñez et al. 1982, *Bol. Mus. Nac. Hist. Nat. Chile* 39:125–130, Cabezas and Schlatter 1987, *An. Mus. Hist. Nat. Valparaíso* 18:131–141).

On 5 November 2001, from a distance of ca. 50 m, we observed a Chimango Caracara feeding upon a dead adult common lesser toad (*Bufo fernandezae*). We made this observation in Los Porteños (34°53'45"S, 58°05'02"W), a suburban region of La Plata city (Buenos Aires Province, Argentina), where land uses include cattle ranching, floriculture, and horticulture. At the time of our observation, the caracara was perched on a fence post 1 m in height, which was located in a pasture. This fence post was situated 20-m south of a small, temporary pond where the common lesser toad breeds (pers. obs.) and ca. 30-m south from the caracara's nest. The nest was in a eucalyptus tree (*Eucalyptus* sp.) located along the edge of the pond. The caracara was pecking at the toad's belly and swallowing pieces torn from the frog's viscera and foreleg muscles. This observation constitutes the first report of the common lesser toad in the Chimango Caracara's diet.

Between September 2001 and February 2002, once a wk, we visited the site and examined the ground around fence posts in a fence line that passed within 200 m of the caracara's nest. During our visits, we frequently saw the caracara perched on this fence line. We found 15 carcasses of the common lesser toad, remains of a Rufous Hornero (*Furnarius rufus*), a mouse (unknown species), and bones of a criolla frog (*Leptodactylus ocellatus*) around these perching sites.

Toad carcasses found at perching sites typically had been eviscerated through a ventral hole. The skeleton and dorsal skin remained intact and in some cases the carcasses were without legs. All toad carcasses found were deposited at the herpetological collection of the Instituto de Limnología Platense "Dr. Raúl A. Ringuelet" under the number ILPLA A 491. Snout-vent length of the toad carcasses averaged 60.1 mm ( $\pm 4$  mm [SD], range = 55.6–68 mm,  $N = 16$ ).

The common lesser toad, along with other species of *Bufo*, has a very thick and glandular-dorsal skin and two prominent post-cephalic glands in a dorso-lateral position (parotoid glands). These glands secrete substances that are noxious or toxic to some predators (Duellman and Trueb 1986, *Biology of Amphibians*, The Johns Hopkins Univ. Press, Baltimore, MD U.S.A.). Despite this fact, several birds have been reported to feed on the common lesser toad including the Red-backed Hawk (*Buteo polyosoma*), Burrowing Owl (*Athene cunicularia*), American Kestrel (*Falco sparverius*; Gallardo 1974, *Anfibios de los Alrededores de Buenos Aires*, Editorial Universitaria de Buenos Aires, Argentina) and Cattle Egret (*Bubulcus ibis*; Torres et al. 2000, *Cuad. Herpetol.* 14:81).

Contrary to Gallardo's (1974) field reports, Huertas and Vallejo (1988, *Bol. Soc. Zool. Urug.*, 2° época, 4:46–49), based on laboratory observations, reported that the American Kestrel, which typically kills and eats a variety of non-bufonid anuran species, does not kill and eat the common lesser toad (including small-juvenile toads which have more toxins than adults), perhaps being unable to avoid irritation caused by the secretion of the toad's dorsal glands.

Corn (1993, *Herpetol. Rev.* 24:57) and Brothers (1994, *Herpetol. Rev.* 25:117) reported that the American Crow (*Corvus brachyrhynchos*) and Common Raven (*Corvus corax*) fed on the congeneric, and also toxic, boreal toad (*Bufo boreas*), eviscerating them from the ventral side, as described above. Species that feed successfully on the common lesser toad and other bufonids may be able to do so by making ventral holes in the frog's bodies. This method of consumption may help the predator avoid the noxious substances.

We captured and weighed several common lesser toads in order to assess their potential energetic value to the caracara. The toad's small body size ( $\bar{x} = 15.62$  g  $\pm 4.28$  g SD, range = 10.26–24.88 g,  $N = 9$ ) along with its toxicity suggests little energetic benefit relative to handling cost, for the caracara (body mass ca. 300 g). However, during the breeding season, when rainfall is high, toads are numerous and are often observed concentrated around ponds (pers.

obs.). This seasonal abundance of the common lesser toad might compensate for what might otherwise be a marginal resource.

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### CONSUMPTION OF A RINGED KINGFISHER (*MEGACERYLE TORQUATA*) BY A WHITE-TAILED HAWK (*BUTEO ALBICAUDATUS*) IN SOUTHEASTERN BRAZIL

The White-tailed Hawk (*Buteo albicaudatus*) is a poorly known species ranging from southern Texas to northern Argentinean Patagonia (Farquhar 1992, *The Birds of North America*, No. 30, Washington, DC U.S.A.). Few data are reported on its diet, which comprises insects, rodents, reptiles, and birds (Farquhar 1992, Sick 1993, *Birds in Brazil: a natural history*. Princeton Univ. Press, Princeton, NJ U.S.A.). Virtually no data are published on its ecology in South America.

We observed a feeding event by the White-tailed Hawk in the 2300 ha Itirapina Ecological Station (22°12'S, 47°54'W), State of São Paulo, Brazil. On 23 April 1998, at 1300 H, while driving a car through the savannah grassland, we observed an adult White-tailed Hawk feeding on dead Ringed Kingfisher (*Megaceryle torquata*). The fresh kingfisher remains were in a small tree, ca. 2 m above the ground. As we approached, the hawk flew away and the remains fell to the ground. Only the complete cranium, cervical vertebrae, ulna, metacarpals, phalanges, and some rectrices were left by the hawk when we inspected the carcass. The Ringed Kingfisher is a piscivorous and semiaquatic bird associated with rivers, ponds, lakes, and reservoirs, occurring from extreme southern Texas to southernmost South America (del Hoyo et al. 2001, *Handbook of the birds of the world*. Lynx Edicions, Barcelona, Spain). The nearest aquatic environment, a reservoir, was located ca. 2 km away from the observation site. It is possible, therefore, that the kingfisher could have been passing over the grassland savannah when captured. This may have been the case as the White-tailed Hawk is known to kill and consume prey in or nearby the site of predation (M.A.M. Granzinoli pers. obs.). The Brazilian subspecies, *B. a. albicaudatus*, has a mass ranging from 850–884 g (del Hoyo et al. 1994.) The Ringed Kingfisher body mass ranges from 305–341 g (Sick 1993). Therefore, the kingfisher represented 34.5–40.1% of adult mass of the hawk. Other authors have reported consumption of birds by White-tailed Hawks, but few with a mass of more than 300 g (see Farquhar 1992). However, 43 of 259 pellets from the State of Minas Gerais in southeast Brazil contained birds and, except for one individual with a mass of 72 g, all the others were less than 40 g (M.A.M. Granzinoli and J.C. Motta-Junior unpubl. data). According to the latter study, which evaluated the hawk's diet over a 1-yr period, birds are relatively uncommon prey, totaling 11.1% of consumed biomass of this species. Thus, the present observation suggests that this hawk subspecies can also prey upon larger birds occasionally. Also, we note that White-tailed Hawks are known to scavenge on dead animals (Farquhar 1992) and that the kingfisher carcass we found may not have been captured and killed by the hawk. Nonetheless, we suggest that the feeding event we observed was the result of predation and our record documents the consumption of a relatively large bird in the diet of the White-tailed Hawk.

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