

*F. rhinocerotus* (~80 mm total length) captured by a previously unobserved large adult male *F. oustaleti* (~600 mm total length). The larger chameleon was on a bush about 0.5 m high, and extended its tongue over at least 0.3 m to make the capture. The smaller chameleon's skull was crushed instantly between the predator's jaws. *F. oustaleti* is the largest of all known chameleon species (Glaw and Vences, *op. cit.*; Henkel and Schmidt, *op. cit.*), and this observation substantiates other reports that small vertebrates, as well as the more typical insect fare, are dietary components for this species.

On 12 July 1997, an adult Crested Coua, *Coua cristata*, was observed capturing a female adult *F. oustaleti* (~300 mm total length). The interaction had begun prior to our encountering the chameleon. The chameleon clung to a slender stem ca. 0.5 m off the ground. The *C. cristata* pecked at the chameleon four times, at roughly one minute intervals, hopping backwards between pecks. The chameleon rose in a defensive position to meet each peck with its two forelegs outstretched and its mouth wide open, its tail wrapped around the stem for balance. After being pecked the fourth time, it fell to the ground; the *C. cristata* picked it up in its beak and ran off into the undergrowth. Crested Couas are known to feed by carefully searching dense foliage and inspecting branches (Langrand 1990. Guide to the Birds of Madagascar. Yale University Press, New Haven, Connecticut. 364 pp.); such detailed investigative behavior might explain how it detected the cryptic chameleon.

During July 1997, we found > 17 skulls of *F. oustaleti* beneath the nest of a buzzard, *Buteo brachypterus*, in a large tree. The skulls were clean, not in regurgitated pellets. *Buteo brachypterus* often sit on observation posts in forests (Langrand, *op. cit.*). This may reflect survey behavior that could contribute to this raptor's apparent success as a chameleon predator despite their crypsis.

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**GAMBELIA WISLIZENII** (Leopard Lizard). **OPHIOPHAGY.** Predation on vertebrates is well known in leopard lizards (*Gambelia*). Other lizards comprise most vertebrate prey (Pack 1922. Proc. Biol. Soc. Washington 35:1-4, Knowlton and Thomas 1936. Copeia 1936:64-66, McCoy 1967. Amer. Midl. Nat. 77:138-146, Tanner and Krogh 1974. Herpetologica 30:63-72, Pianka and Parker 1976. Herpetologica 32:95-114), but small mammals are also occasionally eaten (Pietruszka et al. 1981. J. Herpetol. 15:249-250). Notably, unlike the closely related

*Crotaphytus collaris*, which are known to eat snakes (Best and Pfaffenberg 1987. Southwest Nat. 32:415-426; Baird 2000. Herpetol. Rev. 31:104), *Gambelia wislizenii* is not recorded as being ophiophagous. Here, we document an instance of *G. wislizenii* having taken a Western Shovel-nosed Snake, *Chionactis occipitalis*.

At ca. 1000 h on the 29 May 2003, we captured an adult male *G. wislizenii* on the Barry M. Goldwater Range (BMGR), Yuma Co., Arizona (32°27'38.5"N, 114°28'48.9"W [datum: WGS84]; elev. 116 m). The animal was first spotted fleeing from under a creosote bush (*Larrea tridentata*) in a dune area before eventually disappearing into a hole ca. 80 m away. We retrieved the exhausted animal from the hole and noticed its stomach was greatly distended. Opening the mouth revealed the tail of a snake protruding from

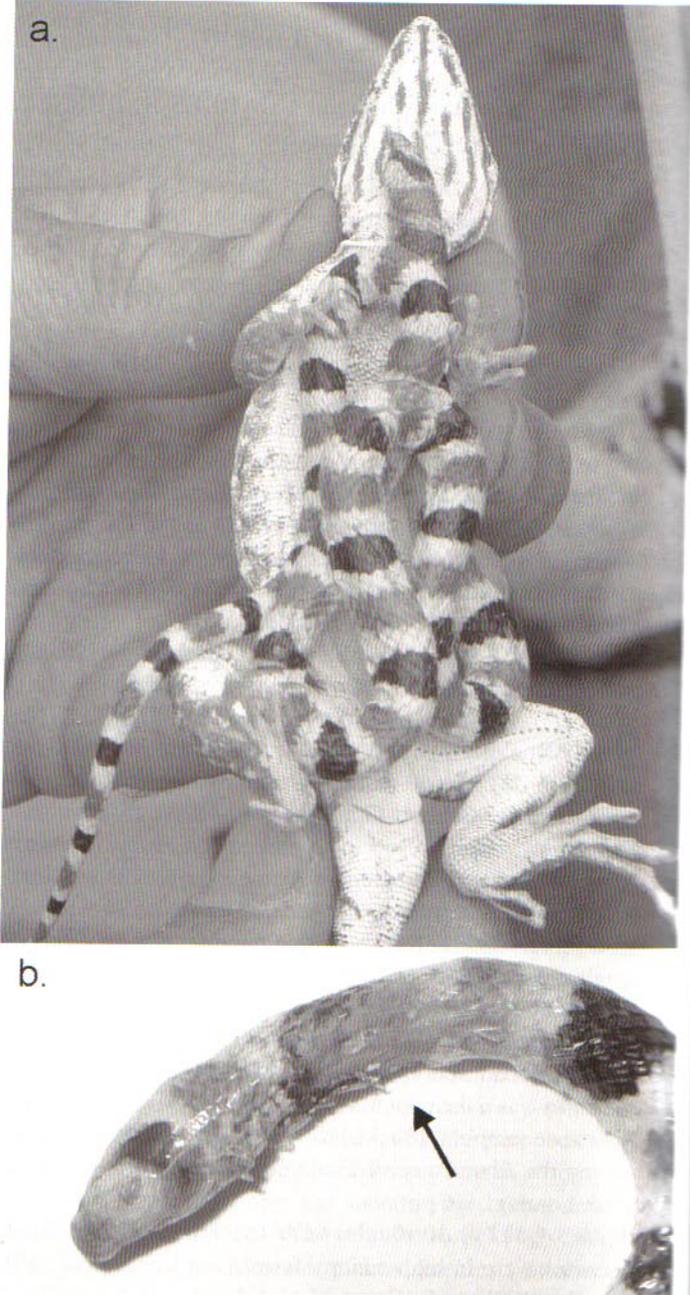


FIG. 1. a) Adult *Chionactis occipitalis* eaten by *Gambelia wislizenii*. b) Arrow denotes bite mark posterior to the head.

the esophagus; removal of the snake revealed that the *G. wislizenii* (103.5 mm SVL, 33.5 g) had eaten a *C. occipitalis* (340.3 mm total length, 7.8 g). Thus, the prey was over 3 times the length and weighed 23% of the body mass of the *G. wislizenii* (Fig. 1a). We found four bite points on the *Chionactis*, all within the first 18 cm of the head. The most substantial of these bites was 5 mm behind the head (Fig. 1b), having torn the skin away, leaving the underlying musculature exposed.

Although *Crotaphytus* is known to immobilize prey by crushing the head, the "torso compression" behavior evidenced here is consistent with that of *Gambelia* feeding on other vertebrates (Lappin 1999. Ph.D. Dissertation, Univ. California, Berkeley; Pietruszka et al. 1981. J. Herpetol. 15:249–250). The predominantly fossorial and crepuscular/nocturnal activity of *C. occipitalis* (Brattstrom 1952. Herpetologica 8:61–63) would appear to make it an unlikely prey item for *G. wislizenii*. However, rather extensive diurnal activity has been reported for *C. occipitalis* in this region (Rorabaugh 2002. Sonoran Herpetol. 15:32–33), suggesting it may be more common in the diet of diurnal predators than we would predict from this initial observation.

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**GAMBELIA WISLIZENII** (Long-nosed Leopard Lizard). **ARBOREAL BEHAVIOR.** In the North American southwest, leopard lizards (genus *Gambelia*) are characteristically ground dwelling (Stebbins 2003. A Field Guide to Western Reptiles and Amphibians, 3<sup>rd</sup> ed., Houghton-Mifflin, New York. 533 pp.; Smith 1946. Handbook of Lizards, Comstock Publishing Co., Ithaca, New York. 557 pp.). In *G. wislizenii*, climbing is not mentioned in several substantive ecological studies of this species (Parker and Pianka 1976. Herpetologica 32:95–114; Tanner and Krogh 1974. Herpetologica 30:63–72), and to our knowledge, only a few records exist of climbing in this species. Clark (1974. Trans. Kansas Acad. Sci. 77:68) observed a *G. wislizenii* perched 30 cm off the ground in a shrub, and Miller and Stebbins (1964. The Lives of Desert Animals in Joshua Tree National Monument. University of California Press, Berkeley. 452 pp.) mentioned collecting an individual on top of a "massive rock 30 feet from the ground." Crowley and Pietruszka (1983. Anim. Behav. 31:1055–1060) commented that this species often climbs into shrubs or onto rocks, but did not provide additional information. For this reason, we augment the limited data on climbing in *G. wislizenii* with an observation from the Mojave Desert of California (USA).

At 0930 h (PST) on 13 September 2003, we observed a juvenile (70 mm SVL, 7.6 g, sex undetermined) *G. wislizenii* perched on the vertical stump of a dead Joshua Tree (*Yucca brevifolia*). The site, 9 km NW of Piñon Hills, Los Angeles County (117°42'W, 34°29'N [datum: WGS84]; elev. 1070 m), is on the edge of the Mojave Desert in Joshua tree woodland and creosote scrub habitat. The lizard was perched 117 cm above the ground in full sunlight and oriented 15–20° from vertical on the 134-cm high stump.

Air temperature at time of capture was estimated at 32.0°C (data from Saddleback Butte 22 km to the NW).

Arboreality in other desert lizards is sometimes attributed to thermoregulatory behavior (e.g., Adolph 1990. Ecology 71:315–327), but climbing is probably not an important part of the thermoregulatory repertoire of *G. wislizenii* because this behavior seems infrequent (but see Crowley and Pietruszka, *op. cit.*, for an alternative view). Detailed accounts of thermoregulatory behavior in *G. wislizenii* are lacking, although McCoy (1967. Amer. Midl. Nat. 77:138–146) describes diel activity consistent with the thermoregulatory pattern well known for many desert lizards, seeking shade during the hotter parts of the day and basking in the sun either on the ground or on rocks in the morning and late afternoon. *Gambelia wislizenii* may use arboreal perches to survey for and ambush Side-blotched Lizards (*Uta stansburiana*), a common prey item that is abundant at this site and sometimes is observed to climb Joshua Trees (SCA, pers. obs.).

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**GERRHONOTUS PARVUS** (Pygmy Alligator Lizard). **MAXIMUM SIZE.** *Gerrhonotus parvus*, an anguillid endemic to Nuevo León, Mexico, is known from only three specimens 55.0–71.7 mm SVL in size (Knight and Scudday 1985. Southwest. Nat. 30: 89–94; Banda-Leal et al. 2002. Southwest. Nat. 47:614–615). The largest, an adult female (71.7 mm SVL), was maintained in captivity for five years before being described as the paratype (Knight and Scudday, *op. cit.*). Here, we report on additional individuals of *G. parvus* that increase the known maximum size.

Since the collection of the third known specimen in May 2001 (Banda-Leal et al., *op. cit.*), we have found four additional *G. parvus*. These lizards, all adult males, ranged in size from 65.8 to 76.5 mm SVL. All were found in arid transition woodland characterized by oak (*Quercus* sp.), agaves (*Agave* spp.), sotol (*Dasylirion* sp.), and extensive outcrops of limestone at elevations of 1600–1650 m. The largest of the four, found dead in a canyon bottom near San Isidro, Municipio Santiago, Nuevo León, on 11 October 2004, represents the largest known *E. parva*. It had an unbroken tail 130.0 mm long, and a mass of 8.1 g.

The largest *G. parvus* (UANL 6675) was deposited in the Universidad Autónoma de Nuevo León herpetological collection. Research and collecting were conducted under the authority of SEMARNAT scientific research permits OFICIO NÚM/SGPA/DGVS/01612 and 01454 issued to DL.

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