

(1979, *op. cit.*) describes *C. c. carinata* being attracted to carrion by odor, and this might be the case for *C. n. nubila* as well.

On another occasion, while monitoring active bird nests at the Naval Base, one of us (MAH) observed an iguana scavenging on the decaying remains of a nestling white-winged dove, *Z. asiatica*, which had fallen out of its nest and died several days prior. In addition, researchers using mist nets to capture birds for a banding study at the Naval Base reported observations to us suggesting that iguanas might occasionally take small birds, such as Cuban grassquits (*Tiaris canora*), captured in nets.

These observations of *C. n. nubila*, combined with reports by Iverson (1979, *op. cit.*) for *C. c. carinata*, suggest that probably all *Cyclura* are opportunistic scavengers of vertebrate remains. In contrast, there is no evidence that *Cyclura* prey on living vertebrates under natural conditions. In fact, some *Cyclura* populations co-occur with dense concentrations of breeding seabirds; e.g., *C. c. carinata* with bridled terns (*Sterna anaethetus*) and brown noddys (*Anous stolidus*) on small cays in the Turks and Caicos Islands, and *C. n. caymanensis* with red-footed boobys (*Sula sula*) and magnificent frigatebirds (*Fregata magnificens*) on Little Cayman Island. There is no indication that iguanas actively prey on the eggs or nestlings of these birds (GPG, pers. obs.).

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EUMECES BREVIROSTRIS (Short-nosed Skink). **REPRODUCTION.** *Eumeces brevirostris* is a montane skink that is widely distributed in Mexico (Flores-Villela 1993. Herpetofauna Mexicana. Annotated List of the Species of Amphibians and Reptiles of Mexico, Recent Taxonomic Changes, and New Species. Special Publication No. 17, Carnegie Museum of Natural History. 73 pp.). Reports that *E. brevirostris* is viviparous are summarized in Blackburn (1993. Herpetologica 49:118–132). The purpose of this note is to provide information on the reproductive cycle from a histological examination of reproductive tissue from museum specimens.

Thirty-six *E. brevirostris* were examined: six from the Natural History Museum of Los Angeles County (LACM), 20 from the University of Arizona (UAZ), and 10 from the Field Museum of Natural History (FMNH). The sample consisted of 18 males, mean SVL = 55 mm ± 6 SD, range = 46–64 mm; 16 females, mean SVL = 56 mm ± 5 SD, range = 49–66 mm, and two neonates. Lizards were collected 1938–1979. Specimens were from the Mexican states of Durango, Guerrero, Nuevo Leon, and Puebla. The posterior portion of the body cavity was opened and the left gonad was removed for histological examination except for enlarged, yolked follicles (> 5 mm diameter) or oviductal eggs, which were measured with calipers. Tissues were embedded in paraffin and sections were cut at 5 µm. Slides were stained with Harris hematoxylin followed by eosin counterstain.

Male Cycle: June (N = 6), three males in spermiogenesis, three in late recrudescence with metamorphosing spermatids but no

sperm; July (N = 2), late recrudescence with metamorphosing spermatids but no sperm; August (N = 9) all in spermiogenesis; September (N = 1) spermiogenesis. Minimum size for reproductive activity (spermiogenesis) was 46 mm SVL.

Female Cycle: March (N = 1) two enlarged follicles 5 mm length; April (N = 2) one with five oviductal eggs from 9 April; one with three oviductal eggs from 9 April; June (N = 4) one with two well developed embryos from 5 June; three with no yolk deposition which may have already given birth; July (N = 1) no yolk deposition; August (N = 8) six with no yolk deposition, two with early yolk deposition. Minimum size for reproductive activity (eggs 5 mm length) was 49 mm SVL. Two neonates were collected in June: 19 June SVL = 23 mm; 27 June SVL = 21 mm.

The reproductive cycle of *E. brevirostris* seems similar to that of another high-elevation, viviparous Mexican skink, *E. copei*, which was studied by Guillelte (1983. J. Herpetol. 17:144–148) and Ramirez-Bautista et al. (1996. Southwest. Nat. 41:103–110). In *E. copei*, males have maximum testicular volumes in spring and summer; females begin vitellogenesis in August, ovulate in late autumn, and births occur between May and July (Ramirez-Bautista et al., *op. cit.*). The timing of events in the *E. brevirostris* reproductive cycle appear similar.

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EUMECES LATICEPS (Broad-headed Skink) **DIET.** On 11 September 1997 in Morehouse Parish, Louisiana, USA (32°47'N, 91°52'W) we observed a female *Eumeces laticeps* eating from a peeled banana. Vitt and Cooper (1986. J. Herpetol. 20:408–415) reported finding no plant material in 84 stomachs of *E. laticeps*, but they had observed *E. laticeps* eating muscadine grapes and blackberries, both in the field (Cooper, pers. comm. to GP in 1998). In 1998 we observed a male *E. laticeps* eating a mixture of food, prepared for box turtles, the primary ingredients of which were ground carrots and lean ground beef, oat bran, and Knox® gelatin.

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FURCIFER OUSTALETI (Oustalet's Chameleon). **DIET.** *Furcifer oustaleti* is one of the largest chameleons of Madagascar; adult males can reach 68.5 cm TL (Brygoo 1971. Faune de Madagascar 33:1–318). Chameleons generally catch their prey using their long, protusible tongue. Because of this mechanism, prey mostly consists of invertebrates (Davison 1997. Chameleons: Their Care and Breeding. Hancock House Publishers, Blaine, Washington. 118 pp.). Mammals (mice) and small birds have also been noted as potential prey (Necas 1999. Chamäleons - Bunte Juwelen der Natur. Chimaira, Frankfurt. 249 pp.), but to our knowledge there have been no reports of Malagasy chameleons preying on

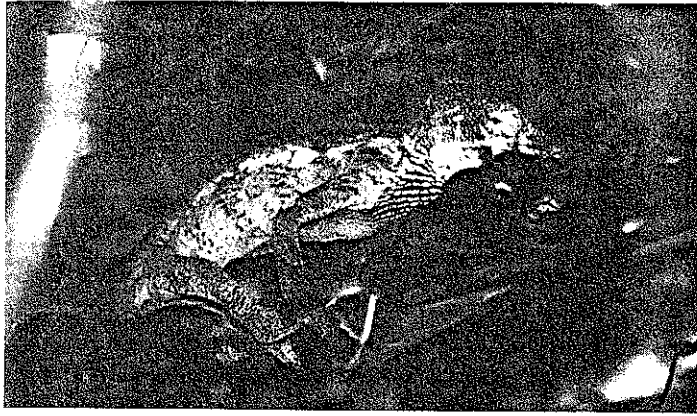


FIG. 1. Adult male *Furcifer oustaleti* carrying a bird in its jaws at Ampijoroa Forest Station.

birds. On 23 May 2000 at ca. 1600 h, one of us (GG) observed an adult male *F. oustaleti* at Ampijoroa Forest Station (16°20'S, 46°47'E, elev. ca. 70 m) on a shrub branch at ca. 2 m height. The lizard was carrying a dead bird in his mouth (possibly a young *Foudia madagascariensis*) (Fig. 1). During the observations (ca. 30 min), the chameleon moved along the branch without leaving its prey, and finally swallowed it completely. The bird was not a hatchling (as recognizable by its well-developed feathers), and therefore almost certainly was not captured in a nest.

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GECKOLEPIS MACULATA (Spotted Fishscale Gecko). **PREDATION.** Few cases of scorpions preying on lizards have been reported: *Centruroides exilicauda* preying on *Phyllodactylus* sp., *Hadrurus arizonensis* on *Cnemidophorus* sp., *Parabuthus villosus* on *Palmatogecko rangei*, and *Opisthophthalmus carinatus* on *Pachydactylus capensis* and *Mabuya striata* (McCormick and Polis 1990. In Polis [ed.], *The Biology of Scorpions*. Stanford Univ. Press, Stanford, California. 587 pp.). The first two examples concern species from North America and the other two from South Africa. No data concerning scorpions preying on Malagasy lizards are available. On 14 March 2000 we observed a scorpion eating a subadult specimen of *Geckolepis* at Montagne des Français, northern Madagascar (12°19'34"S, 49°20'09"E, 335 m elev.). The specimens were found during the day under a stone in degraded dry forest. The *Geckolepis* (SVL ca. 33 mm) had already been partly consumed (tail, left hindleg, and part of digestive tract); it was preserved and deposited in the Zoologische Staatssammlung München (ZSM 527/2000). *Geckolepis* systematics are in need of revision; according to the meristic characters used for species diagnosis in the genus (Angel 1942, *Les lézards de Madagascar*, Mem. Acad. Malgache 36. 139 pp.), the specimen was determined as *G. maculata*. The scorpion was an adult male *Grosphus flavopiceus* with a total length of 85 mm, including the telson; it was deposited at the Muséum national d'Histoire naturelle (MNHN-RS-8539). *Grosphus flavopiceus* is known from

Montagne des Français (Lourenço 1996, *Scorpions* [Chelicerata, Scorpionales], Faune de Madagascar 87. 102 pp.); it lives almost exclusively in dry areas (Lourenço and Cloudsley-Thompson 1998, *Biogeographica* 74:183–187) and is an active predator of prey with rapid movements, similar to most scorpion species from deserts or dry areas.

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HELODERMA SUSPECTUM (Gila Monster). **MORTALITY/PREDATION?** Little is known about potential predators of the venomous Gila monster, but they are suspected to be few (Bogert and Del Campo, 1956. *Bull. Amer. Mus. Nat. Hist.* 109:1–238). As part of a study of the activity of Gila monsters in the Sonoran Desert near Phoenix, we observed the apparent outcome of a predation event involving a male Gila monster and a mammalian carnivore.

An adult male Gila monster, 250 mm SVL (294 g), was initially captured in northern Phoenix, Arizona, on 12 April 2000, surgically implanted with a small radio-transmitter (12 g), and released (1600 m from its capture site) in typical Upland Sonoran Desert dominated by creosote bush, bursage, palo verde, and saguaro cacti. It was relocated once or twice a week over the next fifteen months, during which time it grew 19 mm in length and 26 g in mass. On 27 June 2001 we radio-tracked the male Gila monster, and located the exposed tag and the head and neck of the lizard. The tag was exceptionally clean and exhibited small indentations consistent with the bite marks of a canid or similar-sized carnivore. The tag was imbedded in dry grasses over which an animal had apparently rolled repeatedly. Approximately 10 m from the tag the head and neck of the Gila monster were found with evidence that tissue had been "stripped" from the ribs and vertebral column. The lizard had been radio-tracked on 23 June 2001; at that time it was in a pack rat nest approximately 125 m from the subsequent location of the tag and head.

Although we have no direct evidence, we think that a coyote is the most likely candidate as the predator responsible for killing and consuming the Gila monster. Firstly, other carnivores (e.g., feral dogs, kit or grey foxes, skunks, badgers) have not been observed at the site, which is entirely surrounded by urbanization, over the past two years; coyotes are commonly observed at the site. Secondly, the radio tag was exceptionally clean (as if mouthed repeatedly) and apparently "rolled on," behaviors commonly exhibited by canid predators. Lastly, given the short time that had elapsed since its previous location in a traditional refuge, it seems unlikely that the Gila monster died of some other cause and subsequently was fed upon (as carrion) by a coyote.

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