

dorsolateral field near the tail. Some of the spots and bars of the upper and lower lateral fields, respectively, were fused to or superimposed upon the lateral stripes (Fig. 1B). The tail was blue laterally and olive dorsally. The upper parts of forelimbs were hues of green and the forearms were shades of blue, both areas with indistinct gray-white marking. The hindlimbs were olive dorsally, and shades of blue elsewhere, with gray-white markings. The thoracic and abdominal scales were sky blue, some with darker edges. The ventral surfaces of the limbs and tail were a mixture of blue and cream-white (Fig. 1C).

We used a standard histological protocol to prepare reproductive tissues for light microscopy. Gonadal tissues were dehydrated in a graded series of ethanol, cleared in xylene, embedded in paraffin, sectioned with a rotary microtome into 10  $\mu\text{m}$  sections, stained with Harris hematoxylin and counterstained with eosin. We designated this lizard to be a gynandromorph due to the presence of an abnormal sexual anatomy characteristic of both sexes. No ovaries were observed; however, paired Müllerian ducts (oviducts) of moderate development were positioned lateral to small (< 5 mm in length), paired rudimentary gonads (Fig. 1D). These gonadal structures appeared slightly orange in coloration upon gross inspection. Histological examination of the left gonadal mass (Fig. 1E) revealed a differentiated ovoid testicular mass immediately adjacent to numerous mesonephric derivatives including efferent ductules of the ductuli efferentes and a ductus epididymis with ductules of variable size and epithelial height. Adrenal tissue was aggregated along the cauda of the epididymis (Fig. 1E). The testicular mass, enveloped by a thin connective tissue tunic, was organized into tightly packed medullary cords (Fig. 1E) that appeared to be precursors to seminiferous tubules. These cords averaged 35.3  $\mu\text{m}$  in diameter (range, 31.6–43.3  $\mu\text{m}$ ; N = 10). The germ cells of the cords did not appear to be mitotic. The cytoplasm of the germ cells of the cords was slightly basophilic throughout the testicular mass. Numerous blood vessels were interspersed among these presumptive seminiferous tubules, and the tubules generally lacked lumina. Numerous spherical efferent ductules were dispersed along the entire medial margin of the testicular mass. Those ductules adjacent to the caudal region of the testicular mass (Fig. 1E) averaged 40.2  $\mu\text{m}$  in diameter (range, 33.3–48.3  $\mu\text{m}$ ; N = 10). The low simple columnar epithelia of these ductules exhibited stereocilia, and the apical cytoplasm of these cells were slightly acidophilic.

The cauda portion of the epididymis was more developed than either the caput or the corpus, which were poorly organized. The anteriormost mesonephric ductules of the cauda exhibited simple columnar epithelia that averaged 27.3  $\mu\text{m}$  in height (range 20.0–36.0  $\mu\text{m}$ ; N = 10). The epididymal duct within the cauda exhibited irregular, greatly-expanded segments (Fig. 1E). These hypertrophied ductal tubules exhibited a low simple columnar epithelium (Fig. 1E) with the epithelial cell layer averaging 11.5  $\mu\text{m}$  in height (range 9.8–14.6  $\mu\text{m}$ ; N = 10) in height. The epithelial cells also exhibited conspicuous stereocilia averaging 12.6  $\mu\text{m}$  in height (range 10.3–14.6  $\mu\text{m}$ ; N = 10). Finally, acidophilic cellular debris was observed in epididymal ductules leading to the ductus deferens.

This is only the second publication known to us in which terminology specifically in reference to gynandromorphism has been employed to describe the reproductive organs in a specimen of a whiptail lizard species. Mitchell and Fouquette (1978. Copeia 1978:156–159) described an adult (Arizona State University 15323; 67 mm SVL) of *Cnemidophorus inornatus arizonae* (= *Aspidoscelis inornata arizonae* sensu Reeder et al. 2002. Am.

Mus. Novit. 3365:1–61) collected 10 July 1975 from 7 km SE of Willcox, Cochise Co., Arizona, with male reproductive organs in the left side of the body cavity and female organs in the right side of the cavity. These authors, albeit based on morphology, explicitly rejected the hypothesis that the specimen in question was a tetraploid hybrid involving triploid *A. uniparens* which was also present at the Arizona site. More recently, Cole et al. (2010. Am. Mus. Novit. 3698:1–43) chose to use the terminology “apparently female (but intersex) laboratory hybrid” to describe a genetically confirmed allodiploid individual (American Museum of Natural History 153158; 81 mm SVL) of *A. inornata arizonae* ()  $\times$  *A. tigris marmorata* ().

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**BRACHYLOPHUS BULABULA (Fiji Banded Iguana). PREDATION.** Documented predation of any South Pacific iguana is rare, as all three species remain very uncommon and restricted in range. Two previous studies have reported food habits of wild Pacific Boas (*Candoia bibroni*), and neither found evidence of these boas preying on *Brachylophus* (McDowell 1979. J. Herpetol. 13:1–92; Harlow and Shine 1992. J. Herpetol. 26:60–66). One

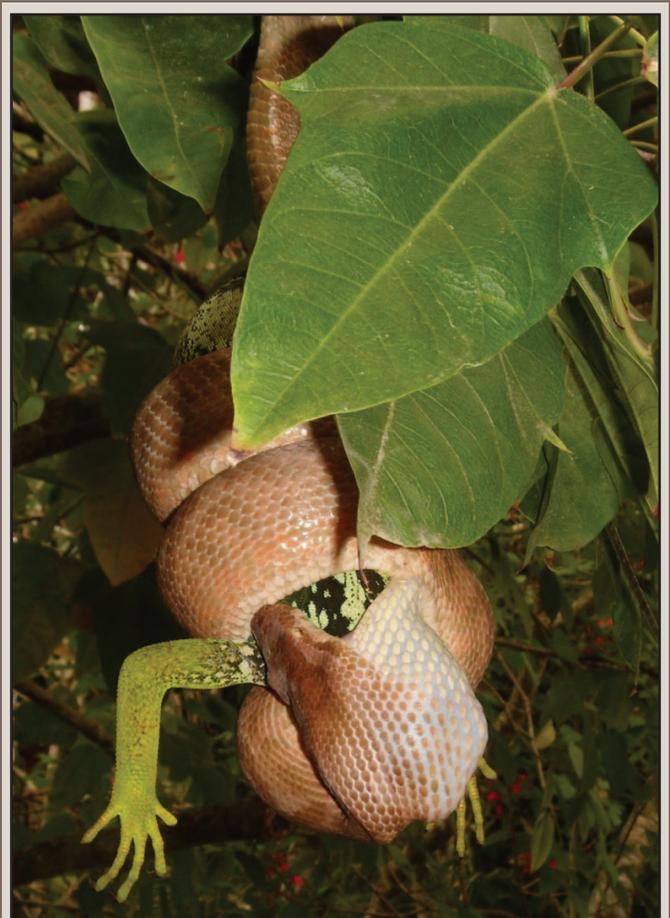


FIG. 1. *Candoia bibroni* preying on *Brachylophus bulabula* on Wakaya Island, Fiji.

second-hand account (Gibbons and Watkins 1982. *In* Burghard and Rand [eds.], *Iguanas of the World*, pp. 418–441. Noyes Publ., Park Ridge, New Jersey) reported that a *B. fasciatus* was observed being eaten by a *C. bibroni* on Vanuabalavu Island in Fiji. We report here a verified observation of predation on *B. bulabula* by a *C. bibroni* (Fig. 1.) on Wakaya Island in Fiji (17.60°S, 179.00°E) from 17 October 2008. The predation event involved an adult *B. bulabula*, being consumed by an adult *C. bibroni*. Adult *B. bulabula* weigh approximately 125 g (RNF, unpubl. data), making this iguana a significantly larger prey item than skinks and geckos, which are reported to constitute most of the diet for *C. bibroni* (McDowell, *op. cit.*; Harlow and Shine, *op. cit.*).

*Candoia* and *Brachylophus* are known to co-occur on many islands in Fiji (Fisher and Harlow, unpubl. data), although the island with the highest known density of *Brachylophus* iguanas apparently lacks *Candoia* (Harlow and Biciloa 2001. *Biol. Conserv.* 98:223–231). It is possible there is a previously undocumented top down effect of these snakes on iguanas when they co-occur on small islands.

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**CROTAPHYTUS COLLARIS COLLARIS (Eastern Collared Lizard). FRUGIVORY.** Lizards of the genus *Crotaphytus* are commonly viewed as being strictly carnivorous, feeding mainly on insects and occasionally on small vertebrates (McGuire 1996. *Bull. Carnegie Mus. Nat. Hist.* 32:1–143). However, in May 2011, one of us (JJC) observed an individual *Crotaphytus collaris* ingesting *Morus* sp. fruit. The observation was made during a two-year study of the behavioral ecology of *C. collaris collaris* in the Smoky Hills region of central Kansas, USA. The individual was an adult male, perched within a ~1 m *Morus* sp. tree. Our observation constitutes the first documentation of frugivory in *C. collaris* in the northeastern portion of its range, as well as the first documentation of any crotaphytid ingesting *Morus* sp. fruit. Literature discussing the diet of crotaphytid lizards reference occasional herbivory (Best and Pfaffenberger 1987. *Southwest. Nat.* 32:415–426; Blair and Blair 1941. *Am. Midl. Nat.* 26:230–232; Ellis and Henderson 1913. *Univ. Colorado Stud.* 10:39–129; Fitch 1956. *Univ. Kansas Publ. Mus. Nat. Hist.* 8:213–272), and frugivory is noted specifically in three reports (Banta 1960. *Wasmann J. Biol.* 18:309–311; Montanucci 1971. *Herpetologica* 18:183–197; Turner et al. 1969. *Herpetologica* 25:247–257). These reports note ingestion of *Lycium* sp. fruit by *C. bicinctores* (as *C. collaris baileyi*) in southern Nevada (Banta 1960, *op. cit.*), *C. reticulatus* in southern Texas and northern Mexico (Montanucci 1971, *op. cit.*) and *Gambelia wislizenii* (as *C. wislizenii*) in southern Nevada (Turner 1969, *op. cit.*). Collectively, these observations suggest fruit might be a standard dietary component of crotaphytid lizards throughout their geographic range, despite the traditional view of crotaphytids as strictly carnivorous.

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**DRACO QUINQUEFASCIATUS (Five-banded Gliding Lizard).**

**REPRODUCTION.** *Draco quinquefasciatus* inhabits lowland rainforest particularly in peat swamp forest. It forages on tree trunks looking for ants, termites and small insects. This gliding lizard is widely distributed from Trang in southern Thailand to Peninsular Malaysia, Sumatra and Borneo (Cox et al. 1998. *A Photographic Guide to Snakes and other Reptiles of Peninsular Malaysia, Singapore and Thailand*. New Holland Publishers, UK. 144 pp.). The total length of this species is up to 27 cm and the female can lay up four eggs per clutch (Cox et al. 1998, *op. cit.*). A clutch of two eggs (measuring 16.8 and 17.2 mm) were reported as obtained from the buttress leaf litter within a dipterocarp forest (Das 2007. *A Pocket Guide of Amphibians and Reptiles of Brunei*. Natural History Publications [Borneo], Kota Kinabalu, Sabah. 200 pp.). Here I report on a maximum clutch size for *D. quinquefasciatus*.

On 11 February 2011, between 2100 and 2200 h, an adult female *D. quinquefasciatus* was caught at Sungai Sedim (5.250574°N, 100.465147°E; elev. < 200 m), Kedah, Malaysia. This specimen was captured while perching on a tree trunk (ca. 3–4 m above ground). For further inspection, the lizard was euthanized and dissected and four whitish eggs in the uterus were found. The oval-shaped eggs were measured and the mean  $\pm$  SD (range, N) length, diameter and weight of the eggs were 14.5  $\pm$  0.58 mm (14–15, 4), 7.5  $\pm$  0.58 mm (7–8, 4) and 601  $\pm$  13.6 mg (587–615, 4), respectively. Later the specimen (11USM-SDM-DQ01) was fixed with 10% formalin, stored in 70% ethanol and deposited at School of Pharmacy, Universiti Sains Malaysia for reference.

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**ENYALIUS BRASILIENSIS. DEATH-FEIGNING.** *Enyalius brasiliensis* is an Atlantic forest species of Brazil, inhabiting areas with humid vegetation and closed canopies (Jackson 1978. *Arq. Zoo.* 30:1–79). Almost nothing is known about the ecology of the genus *Enyalius* and information available is restricted to accounts of feeding habits and microhabitat use (Jackson, *op. cit.*; Sousa et al. 2008. *Iheringia Sér. Zool.* 98:260265; Van Sluys et al. 2004. *Braz. J. Biol.* 64:353–356; Vanzolini 1972. *Pap. Avulsos Zool.*



FIG. 1. Death-feigning posture in a female *Enyalius brasiliensis*.