Crocodilurus amazonicus (Crocodile Tegu). Diet

Table 1. Dorsal color pattern components in the variant of *Aspidoscelis sexlineata viridis* (ASUMZ 33235) from Garden County, Nebraska, USA.

Pattern Component	Location of Component	Color(s)	Extent of Presence
Paired Ventrolateral Stripes (Vestigial)	Dorsal to Ventral Scales	GrayWhite	Head and Body (Indistinct)
Paired Lateral Stripes (Primary)	Dorsal to Ventrolaterals	GrayWhite to GrayTan	Head and Body
Paired Dorsolateral Stripes (Primary)	Dorsal to Laterals	GrayWhite to GrayTan	Head, Body, and Tail
Paired Paravertebral Stripes (Primary)	Dorsal to Dorsolaterals	GrayWhite to GrayTan	Head, Body, and Tail
Single Vertebral Stripe (Secondary)	Along Midsagittal Plane	Tan to Pale Brown	Head and Body
Fields (= Ground Color)	Between Stripes	Predominantly Dark Brown	Body

(Tiger Whiptail) in the *A. tigris* group in the southwestern USA (Dessauer et al. 2000. Bull. Amer. Mus. Nat. Hist. 246:1148). The dusky black pigmentation was also present in the scalation of the thoracic and abdominal surfaces of ASUMZ 33235 (Fig. 2-middle). Equally unexpected was the ventral distribution of pink-red pigmentation on the entire venter, even involving parts of the scales with dusky black pigmentation, a coloration that has not been reported in *A. sexlineata*. Entirely pink-red pigmentation also characterized the ventral aspects of the legs and tail of the female. The typical adult females from the study area had immaculate white venters (Fig. 2-right), whereas males had predominantly white venters with faint hues of blue in the thoracic and abdominal regions and under the legs (Fig. 2-left).

In ASUMZ 33235 the mesoptychial scales bordering the gular fold were abruptly enlarged and the postantebrachial scales on the posterior aspects of the forearms were only slightly enlarged from granular size in both the typical and atypical females depicted in Fig. 2. Moreover, data for the granules = scales around midbody, 72; granules from occipital scales to first row of caudal scales, 182; granules between the paravertebral stripes, 11; and femoral pores, 15 left/16 right were within known ranges of variation (Trauth 1980, *op. cit.*; J. M. Walker, unpubl.).

Examples of extreme color pattern variants among gonochoristic species in both the *A. sexlineata* and *A. tigris* species groups have been reported. With reference to the *A. sexlineata* group, Christiansen and Degenhardt (1969. Texas J. Sci. 21:95–97) reported a variant of *A. gularis* (Texas Spotted Whiptail) from New Mexico with an unusual dorsal pattern in which all traces of the pale stripes had been replaced by spots, and Walker et al. (1996. J. Herpetol. 30:271–275) reported an individual of *A. inornata* (Little Striped Whiptail) that lacked all traces of stripes collected from a population of normally striped lizards in Chihuahua, Mexico. For the *A. tigris* group, both Acre et al. (2012. Southwest. Nat. 57:206–207) and Ballinger and McKinney (1968. Herpetologica 24:264–266) reported individuals of *A. marmorata* (Marbled Whiptail) from Texas and New Mexico, respectively, that were termed patternless morphs because they lacked a contrasting dorsal pattern. Based on data for color pattern variation in *A. gularis* (Walker 1981a. Copeia 1981:826–849; Walker 1981b. Copeia 1981:850–868), *A. inornata* (Wright and Lowe 1993. J. Arizona–Nevada Acad. Sci. 27:129–157; Walker et al. 2009. Herpetol. Rev. 40:276–282; Sullivan et al. 2013. Copeia 2013:366–377), and *A. tigris* (Hendricks and Dixon 1986. Texas J. Sci. 38:327–402), it is evident that the extreme variant of *A. s. viridis* reported herein is in a class apart from the other examples cited because it represents a categorical departure from all previously reported variation in the species (Figs. 1–2). Although the causation of the extreme color pattern variation in ASUMZ 33235 cannot be ascertained, there are only two possible explanations for its existence. Either it was the product of a rare non-genetic developmental anomaly, from which normally patterned offspring would be expected, or it is the result of one or more mutations, from which the aberrant pattern could have possibly been perpetuated in future generations had reproduction occurred.

Field work by JBI, ARH, and LCC leading to the reported discovery was supported by Earlham College Summer Research Funds. Collections of individuals of *A. s. viridis* were made possible under the authority of permit #312 (2013–2014) from the Nebraska Game and Parks Commission issued to JBI.

STANLEY E. TRAUTH, Department of Biological Sciences, Arkansas State University, P.O. Box 599, State University, Arkansas 72467, USA (e-mail: strauth@astate.edu); **ASHLEY R. HEDRICK** (e-mail: arhedri11@earlham.edu), **LAURA C. CORICHI** (e-mail: lccoric10@earlham.edu), **JOHN B. IVERSON,** Department of Biology, Earlham College, Richmond, Indiana 47374, USA (e-mail: johni@earlham.edu); **JAMES M. WALKER**, Department of Biological Sciences, University of Arkansas, Fayetteville, Arkansas 72701, USA (e-mail: jmwalker@uark.edu).

***CROCODILURUS AMAZONICUS* (Crocodile Tegu). DIET**. *Crocodilurus amazonicus* is a medium-sized neotropical lizard widely distributed throughout the Amazon Basin and Orinoco River. It prefers semi-aquatic habitats, often being found near water. There are few published accounts of the ecology and natural history of this lizard. Vanzolini and Valencia (1965. Arq. Zool. São Paulo 13:7–46) described *C. amazonicus* dentition as insectivorous, whereas Presch (1974. Herpetologica 30[4]:344–349) suggested that *C. amazonicus* dentition is adapted for grasping and tearing large prey. Vertebrates have been recorded for the diet of *C. amazonicus*, including anurans, a snake, and fish (Costa et al. 2005. Herpetol. Rev. 36:174–175; Mesquita et al. 2006. J. Herpetol. 40:221–229). The identity of fish species consumed and the method of prey capture remain unknown.

On 25 March 2014 we observed *C. amazonicus* preying on a fish, *Pterophyllum scalare* (Discus Flag) (Fig. 1A, B), on the Rio Solimões in municipality of Iranduba, Amazonas, Brazil

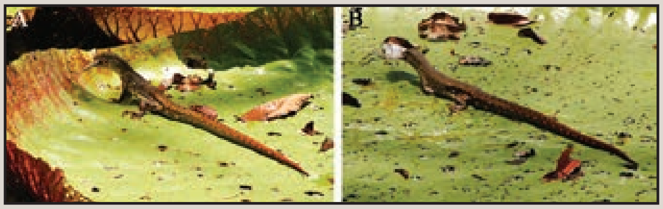

Fig. 1. *Crocodilurus amazonicus* consuming its prey, *Pterophyllum scalare.*

(3.227210°S, 60.004606°W; WGS84). The lizard was seen diurnally active on a lilypad (*Victoria amazonica*) capturing the fish, considerably larger than the lizard's head. On the lilypad and walking on its edges, the lizard quickly stuck its head in the water, grabbing the fish with its teeth. The presence of lilypads might facilitate visualization of prey in the water and prevent the prey from seeing the shadow and reflection of the hunting lizard.

PATRIK F. VIANA, Laboratório de Genética Animal, Instituto Nacional de Pesquisas da Amazônia - Campus II, Av. André Araújo, 2936, 69080-971 Manaus, AM, Brazil (e-mail: patrik.biologia@gmail.com); **DIEGO M. M. MENDES,** Coleção Entomológica, Instituto Nacional de Pesquisas da Amazônia - Campus II, Av. André Araújo, 2936, 69080-971 Manaus, AM, Brazil (e-mail: diego.mello.mendes@gmail.com).

CTENOTUS GRANDIS GRANDIS **(Grand Ctenotus). BIFURCATION.** A common anti-predation strategy in many lizard species is the ability to drop all or part of their tail, caudal autotomy, when attempted predation occurs (Arnold 1984. J. Nat. Hist. 18:127–169; Bateman and Fleming 2009. J. Zool. 277:1–14). Loss of the tail, or part of, allows for the lizard to remove itself from the constraints of the predator and retreat, leaving the predator distracted by or to feed on the tail (Arnold 1984, *op. cit.*; Bateman and Fleming 2009, *op. cit.*; Sownes and Shine 2001. Ecology 82:1293–1303). Following the loss of all or part of a tail, it is often regenerated; however, if the autotomy process is not completed and the tail only partially detaches, the regeneration process may still be triggered if sufficient damage has occurred. In the event of a partial autotomy, if enough muscle and/or bone remain intact, the partially autotomized tail portion may remain and a second regeneration tail may begin to grow in addition to the existing tail, resulting in two tails or bifurcation (Bateman and Fleming 2009, *op. cit.*; Dudek and Ekner-Grzyb 2014. Natura Sloveniae 16[1]:65–66). Tail bifurcation has been recorded in a number of reptiles, particularly lizard species that frequently regenerate tails after loss.

Ctenotus grandis grandis is a large (up to 105 mm SVL) intricately patterned scincid that inhabits arid zone habitats, often dominated by spinifex (*Triodia* spp.) on sandy loam substrates in the western interior of Western Australia to central Northern Territory.

On 6 April 2011, an adult *Ctenotus grandis grandis* with a bifid tail was caught in a pitfall trap as we undertook a faunal survey near Davidson Creek, Western Australia (23.302942°S, 120.234872°E; WGS84). The tail bifurcation occurred along the posterior length, originating approximately mid-way along the tail resulting in two morphologically similar bifid tails. The bifurcation resulted in the growth of a dorsal and ventral length of tail. The length of the ventral (48 mm) bifid tail was slightly longer than the dorsal (32 mm). The upper bifid length was morphologically consistent with the remainder of the anterior length of tail while the lower bifid length was mirrored the ventral surface of the upper bifid tail its entire length. A small kink was present in the dorsal tail length indicating it is likely to be the original tail which possibly suffered multiple injuries resulting in the original tail damage that lead to the bifurcation.

The bifurcation did not appear to interfere with any movement or use of the tail by the animal. No caudal use of behavior such as luring or displays by the animal were observed and no other individuals of this subspecies or other *Ctenotus* species were observed performing any caudal displays at the site. However, the extent of caudal use by *C. g. grandis* and congeners is not well known. This is the first record of tail bifurcation in the *Ctenotus grandis* complex. As bifurcation is recognized as the result of previous injury and not caused by deformity of any form (Lynn 1950. Herpetologica 6:81–84; Bateman and Fleming 2009, *op. cit.*), there is no indication that bifurcation affects the natural behavior of specimens with this abnormality.

RYAN J. ELLIS, Department of Terrestrial Zoology, Western Australian Museum, 49 Kew Street, Welshpool, Western Australia, 6106, Australia; e-mail: Ryan.Ellis@museum.wa.gov.au.

EULAMPRUS QUOYII **(Eastern Water Skink). CANNIBALISM.** *Eulamprus quoyii* is a medium-sized terrestrial diurnal viviparous lygosomine skink widespread in riparian and mesic habitats of the coastal plain, hinterland, and ranges of most of eastern mainland Australia (Cogger 2014. Reptiles and Amphibians of Australia [7th ed.]. CSIRO Publishing, Collingwood, Victoria, Australia. xxx + 1033 pp.). This note documents a case of cannibalism by a large adult *E. quoyii* of a juvenile conspecific and discusses the possible significance of this behavior; parturition of neonates in a clutch at separated sites is also reported.

On 3 January 2014, ~1430 h, on a sunny day, T_A ~31°C, in a suburban backyard in Cooranbong, Lake Macquarie, New South Wales, Australia (33.08°S, 151.45°E, WGS84; 12 m elev.), where *E. quoyii* of all ages and size classes are common, TJA observed a large adult (SVL ~110 mm, total length ~310 mm) *E. quoyii* chasing a recent neonate (SVL ~40 mm, total length ~110 mm) conspecific moving in coarse bark chips in a flower bed, dashing about in a zig-zag fashion. The adult seized the neonate over the midbody and raced off about 3 m to a less exposed area; the adult then bit down hard on the neonate several times, and after ~3 minutes the neonate was limp and apparently dead. This mastication induced caudal autotomy at a point ~50 mm from the tail base, whereupon the adult dropped the body (which did not move), then seized and swallowed the writhing tail indicating a strong attraction towards moving prey. After seizure and swallowing of the autotomized tail portion, the adult searched around, located and picked up the body of the neonate, which it began to manipulate in preparation for swallowing. However, another adult *E. quoyii*, apparently attracted by this activity, attempted to kleptoparasitize the prey item, whereupon the first adult *E. quoyii* ran off on concrete paving around the corner of the house (a distance of ~9 m and out of sight of the pursuing lizard) with the body of the neonate in its mouth, and had almost completed swallowing when it was lost to view. The duration of observation of these events was ca. 10 minutes.

Adult *E. quoyii* at this locality are opportunistic feeders that consume numerous invertebrate species including live and dead spiders and slugs (TJA, pers. obs.); they have also been observed to catch and consume adults of the small lygosomines *Lampropholis delicata* and *Saproscincus mustelina* on several occasions, and have been seen in vigorous pursuit of conspecific neonates (TJA, pers. obs.). Given that neonate *E. quoyii* are only a little larger than adults of these other taxa, this might explain the willingness of adult *E. quoyii* to prey on conspecific neonates and small juveniles. Neonates can run very fast for their size and rapidly learn to hide themselves in narrow crevices when pursued. In over 10 years of observation at the locality, this was the only successful capture of a neonate recorded, although this likely occurs much more frequently. With ontogeny, a size refuge from cannibalism is evidently obtained (at SVL ~60 mm), at which size juvenile *E. quoyii* learn that it is safe to approach mature adults apparently without fear of assault, and also that they can approach adults much more closely from the rear than from head-on (TJA, pers. obs.). There is a reported case of whole-clutch filial