Three presumably wild-caught *Cuora flavomarginata,* two males and one female, were obtained in 1974 from a commercial source. These specimens appeared to be fully mature at this time, though no initial measurements are available. This group produced numerous fertile eggs and healthy hatchlings each year, until the female died accidentally several years ago. The two males are still alive and healthy at this writing (June 2018). The age of sexual maturation in this species has been estimated as six or seven years for wild individuals (Ota et al., *op. cit.*); thus a conservative estimate of age for the two males discussed here would be 50 years. Given that these turtles appeared to be fully mature when obtained, they could be several years older than this estimate.

One of the two living male *C. flavomarginata* reported here has developed very noticeable macrocephaly (Fig. 1), with the postocular dorsal musculature greatly hypertrophied. Although this species is considered relatively "big-headed" within its genus, and males are noted to have broader heads than females (Ota et al., *op. cit.*), true macrocephaly has apparently not been described in this species. Based on observations of numerous captive specimens and on published photographs of others (e.g., Vetter and van Dijk 2006. Terralog: Turtles of the World Vol. 4: East and South Asia. Edition Chimaira, Frankfurt am Main. 160 pp.), the male specimen described here appears to display exceptional head development.

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***RHINOCLEMMYS PUNCTULARIA* (Spot-legged Turtle). DOUBLE-CLUTCHING.** The reproductive biology of *Rhinoclemmys punctularia* is not well known. It has been reported that females deposit one or two eggs per clutch in March and April (Vogt 2008. Amazon Turtles. Gráfica Biblos, Lima. 104 pp.), and nesting was also recently reported in a captive specimen in July (Soares et al. 2017. Herpetol. Rev. 48:85–86). Other species of this genus have varied reproductive strategies. Because of the lack of specific published data on how many times per year species of *Rhinoclemmys* nest, it is important to document cases of individual turtles nesting in a single season so that more accurate estimates of annual reproductive potential for these species can be calculated (Páez 2012. *In* Páez et al. [eds.], Biologia y Conservacion de las Tortugas Continentales de Colombia, pp. 189–203. Serie Editorial Recursos Hidrobiologicos y Pesqueros Continentales de Colombia,. Instituto de Investigacion de Recursos Biologicos Alexander von Humboldt, Bogotá).

In Colombia, *Rhinoclemmys annulata, R. diademata, R. melanosterna,* and *R. nasuta* nest year-round (Páez, *op. cit.*). However, with the exception of *R. diademata,* which nests every two months and has an estimated reproductive potential of 6–18 eggs per year, it is unclear how many times per year individual females of these species will nest. *Rhinoclemmys nasuta* has been reported to nest twice a year, while *R. funeria* and *R. pulcherrima* nest up to four times a year, and *R. puncutlaria* nests year-round (Bonin et al. 2006. Turtles of the World. Johns Hopkins University Press, Baltimore, Maryland. 416 pp.); however, no citations were provided for these data. In Mexico, Legler and Vogt (2013. Turtles of Mexico: Land and Freshwater Land Forms. University of California Press, Berkeley, California. 416 pp.) noted that *R. areolata* lays up to five clutches annually and *R. pulcherrima* up to four clutches per year, whereas the number of clutches laid by *R. rubida* is unknown.

A captive female *R. punctularia* maintained at the Centro de Estudos de Quelônios da Amazônia – CEQUA, of the Instituto Nacional de Pesquisas da Amazônia, Manaus, Amazonas, Brazil, was observed nesting on 8 July 2016 at 1430 h and then again at 0930 h on 22 August 2016, representing an inter-nesting interval of 45 days. The first clutch consisted of one egg (38 g; 71 × 31 mm) (Soares et al. *op. cit.*); the second clutch was comprised of two eggs measuring 66 × 28 mm and 42 g, and 60 × 26 mm and 36 g, respectively. The female, which measured 235 mm in straight line carapace length and 2085 g after oviposition, is part of a colony of six males and eight females originally collected from the Manaus area of Brazil that have been maintained in captivity for 22 months. The indoor terrarium housing the colony measures 10 × 10 m, features six ponds each measuring 1 m in diameter and 20 cm deep, and is maintained on natural light and temperature cycles, with two 2 × 4 m windows allowing natural light to enter the structure. One nest was constructed adjacent to a palm tree trunk and the second nest at the base of a small palm tree, both in silica sand. The nesting female was positively identified during both nesting events by its PIT tag number. This is the first record of double-clutching from direct nesting observations of captive *R. punctularia.*

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SQUAMATA — LIZARDS

***ANOLIS GARMANI* (Jamaican Giant Anole). HERMAPHRODITISM.** Hermaphroditism, a condition in which both male and female reproductive organs are expressed in an individual, is rare among higher vertebrates. Some cases have been reported in the Reptilia (e.g., Risley 1941. J. Morphol. 68:101–121), and in lizards, documented cases appear to be limited to lacertids: *Lacerta viridis* (Tayler 1918. Proc. Zool. Soc. Lond. 88:223–230), *Darevskia saxicola* (Lantz 1923. Bull. Soc. Zool. France 48:289–290; Darevsky 1966. J. Ohio Herpetol. Soc. 1966:115–152); anguids: *Hyalosaurus koellikeri* (Bons and Bons 1969. Compt. Rend. l'Acad. Sci 268:695–696); varanids: *Varanus exanthematicus* (Frye et al. 1999. Proc. Assoc. Reptil. Amphib. Vet. 1999:59–62), *V. acanthurus* (Brown 2008. Biawak 2:87–88); and phrynosomatids: *Sceloporus occidentalis* (Goldberg 1989. Copeia 1989:486–488).

In November 2015, a captive-bred adult *Anolis garmani* maintained at Audubon Zoo was presented to veterinary staff due to lethargy, inappetence, and overall decline in health, and subsequently euthanized due to concerns over quality of life. Upon gross necropsy and histopathological analysis, this animal, a suspected female, was determined to be hermaphroditic with both male and female reproductive organs that showed signs of active folliculogenesis and spermatogenesis.

Upon its arrival in mid-2010, this animal was originally housed together with an adult male *A. garmani.* Together, this pair produced more than 30 eggs (most of which were non-viable) over the course of one year, resulting in at least two live offspring and several mid-term and full-term embryos that died during incubation. From mid-2011 onward, this animal was periodically transferred between enclosures housing additional *A. garmani* of both sexes. Although eggs continued to be laid in these enclosures over the next several years, it was unclear which animals produced them. Eggs were also received when this her-

maphroditic individual was housed with up to seven female *A. garmani*; however, since no attempts were made to incubate these eggs, it is unclear whether this individual was also capable of successfully reproducing in a male capacity. Post-mortem histopathological analysis of the animal noted some follicular degeneration with yolk resorption, suggesting full female reproductive capabilities at the time of death.

As far as it can be determined, this represents the first documented case of hermaphroditism in a dactyloid iguanian. This case highlights the importance of necropsy examinations and post-mortem histopathological analyses for detecting internal anatomical and developmental aberrations that would otherwise go unnoticed in living specimens.

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***LIOLAEMUS CHALTIN*. PREFERRED AND CRITICAL THERMAL TEMPERATURES.** *Liolaemus chaltin* is distributed in northwestern Argentina and southern Bolivia between 3400–3750 m elev. in the Puna ecoregion (Lobo and Espinoza 2004. Copeia 2004:850–867; Quinteros 2012. Herpetologica 68:100–120). Lobo and Espinoza (*op. cit.*) report that these lizards seek refuge in grasses (*Festuca* sp.) and thorny shrubs (*Adesmia* sp.), feed on arthropods, and lay 4–5 eggs from September to November. The average field body temperature (T_b) recorded by these authors in January 1995 and 1996, between 1000 and 1800 h was 31.3 ± 2.7 °C (range 25.3–36.9; N = 40). This note aims to provide additional information on the thermal biology of *L. chaltin*.

Five *L. chaltin* (4 adult males and 1 juvenile female) were collected 30 km N of Villazón, Potosí, Bolivia (21.83°S, 65.62°W, WGS 84; 3551 m elev.) on 5 October 2015. Lizards were transported in cloth bags to the laboratory of the Colección Boliviana de Fauna (CBF) in La Paz, Bolivia. They were kept in a terrarium measuring 60 × 30 × 35 cm (length × width × height) and acclimatized two-weeks prior to laboratory thermal data collection. The terrarium was set in direct sun as a heat source and lizards had access to places to hide and bask. They were fed crickets and mealworms three times a week, and had free access to water. Individuals were held in captivity for two months before being deposited as voucher specimens (CBF 4301–4305). No specimens died and no injuries were observed during or after laboratory tests. Individual snout-vent lengths (SVL) were measured with a vernier caliper (0.05 mm), and weights (W) were taken with a CM 60-2N Kern Electronic Pocket Balance (± 0.01 g) before starting data collection.

Preferred temperature (T_{pref}) is an estimate of the optimal temperature a lizard would attain without biotic and abiotic constraints, generally measured in a thermal gradient (Hertz et al. 1993. Am. Nat. 142:796–818). A thermal gradient was created in a glass terrarium (120 × 40 × 40 cm) that was divided internally into four 10-cm wide lanes separated by 10-cm high opaque walls. A 100-watt incandescent bulb was placed on the same end of each lane, registering substrate temperatures from 15 to 80°C. A 42-watt fluorescent bulb was suspended in the middle of the terrarium to standardize ambient lighting. Light bulbs were turned on at 0730 h, and specimens were placed in the middle of the thermal gradient at 0800 h. Preferred temperatures of individuals were measured every hour from 0900 to 1700 h for two days, obtaining 18 records per individual. To determine body temperatures, the tip of the thermocouple connected to a digital thermometer (Fluke 52-II, Everett, Washington, USA) was inserted up to 0.5 cm into the cloaca of each individual. For calculating set point preferred temperatures, central 50% interquartile observations were considered (sensu Hertz et al., *op. cit.*).

The thermal limits at which physiological functions of lizards do not operate correctly are given by critical thermal temperatures (Cowles and Bogert 1944. Bull. Am. Mus. Nat. Hist. 83:265–296; Angilletta et al. 2002. J. Therm. Biol. 27:249–268). Measurements for critical thermal data were performed three weeks after T_{pref} data collection. Critical thermal minimum (CT_{Min}) was taken exposing individuals to a 10 × 10 × 5 cm empty plastic container within a 40 × 30 × 20 cm plastic container filled with ice. Experimental voluntary maximum temperature (T_{vol}), panting temperature (T_{pant}) and critical thermal maximum (CT_{Max}) were taken simultaneously under a 100-watts bulb placed 10 cm above the individuals. After critical thermal records, lizards were placed immediately in another 10 × 10 × 5 cm plastic container at room

TABLE 1. Voucher number code of the Colección Boliviana de Fauna (CBF), sex, snout–vent length (SVL), weight (W), individual preferred temperature (T_{pref} mean ± standard deviation, and range in parenthesis), lower and upper set-point preferred temperature values, critical thermal minimum (CT_{Min}), experimental voluntary maximum temperature (T_{vol}), panting temperature (T_{pant}), critical thermal maximum (CT_{Max}) and thermal tolerance range (TTR) for *Liolaemus chaltin* from Potosí, Bolivia.

CBF	Sex	SVL (mm)	W (g)	T_{pref} mean range (°C)	Lower set point (°C)	Upper set point (°C)	CT_{Min} (°C)	T_{vol} (°C)	T_{pant} (°C)	CT_{Max} (°C)	TTR
4301	♀	36.5	1.15	34.98 ± 0.73 (32.20–37.70)	33.73	35.78	6.30	38.90	39.20	43.50	37.20
4302	♂	52.9	4.22	36.13 ± 1.00 (33.50–37.30)	35.95	36.80	4.80	37.70	41.50	43.60	38.80
4303	♂	53.2	3.91	35.16 ± 1.38 (33.00–36.60)	34.70	35.88	5.90	37.60	40.60	43.50	37.60
4304	♂	51.3	3.65	36.23 ± 1.61 (35.20–37.60)	35.65	36.65	5.40	38.60	40.30	42.50	37.10
4305	♂	52.8	3.03	34.66 ± 1.11 (32.10–38.20)	33.40	35.93	6.30	38.50	40.90	43.10	36.80