PHOTOS BY RAHUL BHATT

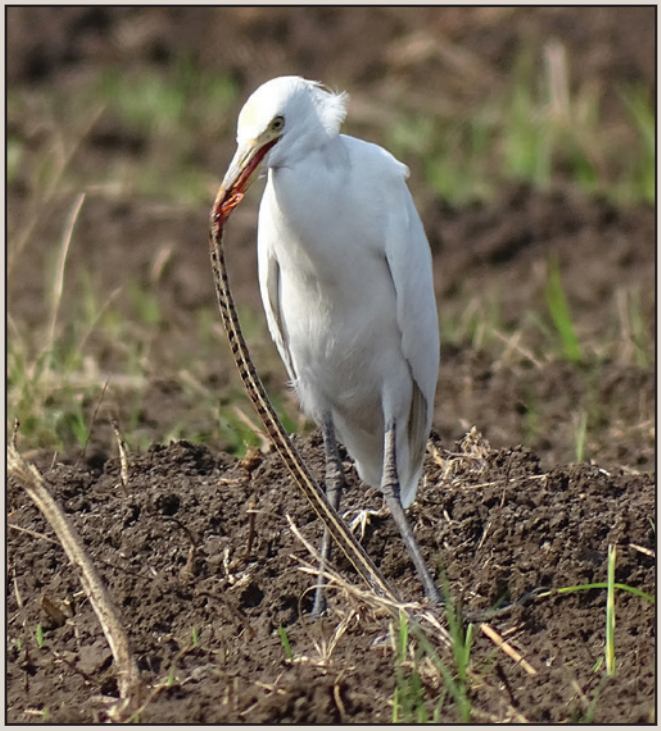

FIG. 1. *Amphiesma stolatum* preyed upon by Cattle Egret (*Bubulcus ibis*) at Vemar Village, Gujarat, India.

12 species of reptiles, including three species of snakes: *Fowelea piscator, Amphiesma stolatum* and *Echis carinatus* (Vyas and Parasharya 2016. IRCF Rept. Amphib. 23:68–73).

At 1304 h on 17 December 2020 in an agriculture field in Vemar Village (22.0305°N, 73.14559°E; WGS 84; 29 m elev.), Karjan, Vadodara, Gujarat, India, we observed an adult *B. ibis* capture an *A. stolatum* by the head by (Fig. 1). Within 3 min, the bird engulfed the entire snake. This is the first direct observation of *B. ibis* consuming *A. stolatum*, confirming that these birds are skilled predators of snakes.

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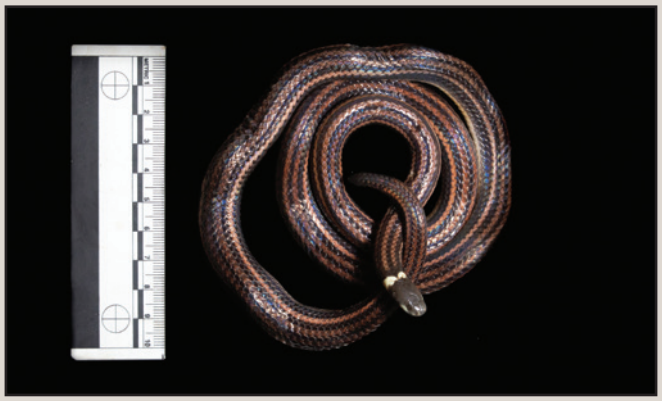
***APOSTOLEPIS THALESDELEMAI*. MAXIMUM SIZE**. *Apostolepis thalesdelemai* is small snake that is characterized by a dorsal pattern with five dark brown stripes on a light brown background (Entiauspe-Neto et al. 2020. J. Herpetol. 54:225–234). It is known from only a few localities in northeastern Brazil, being endemic to the state of Ceará (Nogueira et al. 2019. S. Am. J. Herpetol. 14:1–274; Entiauspe-Neto et al. 2020, *op. cit.*). Due to its restricted range and scarcity of records, several authors recommend it to be listed as a threatened species (Entiauspe-Neto et al. 2020, *op. cit.*). The individual presented here (male, 708 mm SVL, 53 mm tail length, 68 g; Fig. 1) was killed by a cat in the Municipality of Guaramiranga, Ceará, Brazil (4.22286°S, 38.95445°W; WGS 84; 820 m elev.). It is housed in the Herpetological Collection of the Museu de História Natural do Ceará Prof. Dias da Rocha (MHNCER-575). In the past, two synonyms were recognized as full species, *A. mariae* and *A. thalesdelemai* (Borges-Nojosa et al. 2016, *op. cit.*). *Apostolepis mariae* was considered a junior synonym of *A. thalesdelemai* (Entiauspe-Neto et al. 2020, *op. cit.*).



JFIG. 1. *Apostolepis thalesdelemai* (MHNCER-575), from Guaramiranga Municipality, Ceará, Brazil.

Considering the known size range of *A. thalesdelemai* (as currently recognized: 272–613 mm [males]; 257–695 mm [females]; Borges-Nojosa et al. 2016, *op. cit.*; Entiauspe-Neto et al. 2020, *op. cit.*), the individual presented here is the largest specimen known so far.

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***BOA CONSTRICTOR* (Red-Tailed Boa). REPRODUCTION and MATING AGGREGATION.** Boid snakes exhibit variation in mating systems. Male rainbow boas (*Epicrates*) fight conspecific males during the reproductive season (Pizzatto et al. 2006. Herpetol. Bull. 95:16–20; Guedes et al. 2019. Phyllomedusa 1:131–135). In contrast, many other boids engage in mating aggregations in which multiple males court a single female. This is the case for *Boa occidentalis* (Argentine Boa; Bertona and Chiaraviglio 2003. J. Herpetol. 37:510–516), *B. imperator* (Colombian Red-tailed Boa; Schuett et al. 2019. Herpetol. Rev. 50:383–385), and *Eunectes murinus* (Green Anaconda; Rivas and Burghardt 2005. J. Comp. Psychol. 119:447–454). Field data have provided increasing evidence that polygynandry may be the most prevalent mating system in snakes (Rivas and Burghardt 2005, *op. cit.*). Here, we provide the first record of multi-male mating aggregation in *B. constrictor*.

At 0955 h on 16 August 2020 (mid-winter), Roberto Hugo Jank Junior (RHJJ) observed and photographed three adult *B. constrictor* in a multi-male mating aggregation in a pasture area in a cattle breeding property. The aggregation occurred in an open grassy area, surrounded by gallery forest, typical of the Cerrado domain, in the Municipality of Descalvado, São Paulo, Brazil (21.9750°S, 47.7036°W; WGS 84). Based on the photographs and the snakes' behavior and body sizes (Fig. 1), the three aggregated individuals corresponded to two males (ca. 1.5 and 2.0 m total length [TL]) and one female (ca. 2.5 m TL). Although no copulation was observed, we presume that both supposed males tried to copulate with the female, as the tails of the three individuals were intertwined (Fig. 1). On the following two days, RHJJ (accompanied by Jorge Sawaya Jank; JSJ) returned

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FIG. 1. *Boa constrictor* observed on 16 August 2020 tangled together in a multi-male mating aggregation (2M:1F) in the Municipality of Descalvado, São Paulo, Brazil.

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FIG. 2. The same three *Boa constrictor* individuals observed again on 18 August 2020. Note the intertwined tails of the three individuals (arrow).

to the site of the original observation and found the same three individuals tangled and hidden within a patch of vegetation (Fig. 2). At 1148 h on 18 August 2020, the smaller male was observed leaving the mating aggregation. The pair remained in the same position, with their tails intertwined for 1–2 weeks. Thus, the snakes probably continued copulating during this period.

This is the first report of multi-male mating aggregation in *B. constrictor*. In boids and pythonids, mating aggregations can last several days and consist of 2–9 males with a single female (Slip and Shine 1988. Herpetologica. 44:396–404.; Rivas and Burghardt 2005, *op. cit.*). Males tend to stay close to the female until the end of her attractiveness period (Rivas and Burghardt 2005, *op. cit.*). Our record confirms that male and female *B. constrictor* remain aggregated for several days during estrus. In *B. constrictor*, vitellogenesis and spermatogenesis begin in autumn (early dry season), and mating occurs in autumn-winter (Bento et al. 2019. Arq. Bras. Med. Vet. Zootec. 71:1551–1557). The association between increased testicular size, vitellogenesis, and mating indicates that the reproductive cycle of *B. constrictor* is associated or prenuptial (Bento et al. 2019, *op. cit.*; Garcia and Almeida-Santos 2022. Zoo Biol. 74–83). The timing of the mating aggregation observed here (mid-winter) reinforces the preferential mating season of *B. constrictor*.

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***BOA IMPERATOR* (Central American Boa). DIET and MORTALITY.** *Boa imperator* is distributed from southern Mexico to northwestern Colombia (Suárez-Atilano et al. 2014. J. Biogeogr. 41:2371–2384; Card et al. 2016. Mol. Phylogenet. Evol. 102:104–116). The diet of this snake is composed of a variety of small and medium-sized vertebrates, including frogs, reptiles, and birds, but mainly of small and medium-sized mammals (Heimes 2016. Herpetofauna Mexicana Vol. 1: Snakes of Mexico. Edition Chimaira, Frankfurt am Main, Germany. 572 pp.; Barquero-González et al. 2020. Rev. Biol. Trop. 68:336–343; Zamora et al. 2022. Rev. Mex. Mastozool.12:69–72). At least 54 different prey items have been reported for mainland *Boa* spp., but reports of bird consumption are relatively rare (Boback 2005. Copeia 2005:879–884). Most of the birds eaten by *B. imperator* are passerines, although other birds are also eaten, including domestic fowl, New World vultures, and hummingbirds (Boback 2005, *op. cit.*; Platt et al. 2016. Mesoam. Herpetol. 3:162–170).

At 0728 h on 11 September 2019, we found an adult *B. imperator* (35 cm SVL) dying while it was constricting its prey on a secondary road in the CATIE Botanical Garden, Turrialba, Cartago Province, Costa Rica (9.9000°N, 83.6688°W; WGS 84; 612 m elev.; Fig. 1). The snake was apparently run over, since part of its intestines near the tail were protruding; the prey was already dead. Shortly after the snake died, the prey was separated and identified as an immature *Thraupis palmarum* (Palm Tanager). The photographic records of both species are deposited at iNaturalist (observation numbers 32524175, 32524216).

Few birds in the family Thraupidae have been documented in the diet of *B. imperator* in Central America: *Coereba flaveola* (Bananaquit) and *Tiaris bicolor* (Black-faced Grassquit; Reiner et al. 2021. Herpetol. Conserv. Biol. 16:211–224). For Costa Rica only *Thraupis episcopus* (Blue-gray Tanager) has been documented as part of the diet of this snake (Greene 1983. *In* Janzen [ed.], Costa Rican Natural History, pp. 385–386. The University of Chicago Press, Chicago, Illinois), suggesting that our observation would be the first record of *T. palmarum* in the diet of *B. imperator*.

Snake mortality while consuming prey can be the result of different factors such as asphyxiation (De Sousa Germano and Franca 2017. Herpetol. Rev. 48:452; Patel et al. 2017. Herpetol. Rev. 48:869; Adams and Childress 2018. Herpetol. Rev. 49:765), ingestion of toxins (Rhind and Steer 2016. Herpetol. Rev. 47:308–309; Kojima 2017. Herpetol. Rev. 48:211), from attempting to eat too large meal (Christman et al. 2016. Herpetol. Rev. 47:477; Domínguez-Godoy et al. 2017. Mesoam. Herpetol. 4:426–428; Nahuat-Cervera et al. 2020. Herpetol. Rev. 51:608–609), or due to a decrease in locomotion ability (Madrid and Cifuentes 2012. Bol. Asoc. Herpetol. Esp. 23:34–36). Although our observation