this defense, amphibians (Langdref-Filho et al. 2012. Herpetol. Rev. 43:472) and snakes (De Freitas and Lima 2012. Herpetol. Rev. 43:472) have been reported to feed upon *Trachycephalus*. Among the snakes, *Leptophis ahaetulla* (Albuquerque and Di-Bernardo 2005. Herpetol. Rev. 36:325), *Liophis poecilogyrus* (Silva et al. 2003. Herpetol. Rev. 34:68), and *Clelia bicolor* (Prado 2003. Herpetol. Rev. 34:231–232) are known predators of *T. venulosus*. On the night of 10 December 1999, along the Sucuri River, Mato Grosso do Sul state, Brazil (21.254479°S, 56.570091°W; WGS 84), we observed a *Leptophis ahaetulla* preying on a female *T. typhonius* (Fig. 1). The behavior was recorded on the trunk of a tree, about two meters from the ground. To our knowledge this is the first report of *T. typhonius* as prey of *L. ahaetulla*.

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Our observations were made at night on 20–21 January 2016, in a temporary lagoon in Aratuba, Ceará, northeast Brazil (4.4116°S, 39.0479°W, WGS 84; 841 m elev.). At 2350 h on 20 January 2016, an adult *T. typhonius* was observed amplexing an adult *D. muelleri* in the water (Fig. 1A). At 2355 h on the same date, we observed another adult individual *T. typhonius* amplexing a female *D. muelleri* out of the water (Fig. 1B). At 2203 h on 21 January 2016, a case of necrophilia was observed between an adult *T. typhonius* and a male *D. muelleri* (with blackened vocal sac) inside the water (we moved the pair onto the ground for photography; Fig. 1C). Each observation lasted about four minutes.

A case of necrophilia has already been recorded among conspecific *T. typhonius* (de Moura and Loebmann 2014. Herpetol. Bras. 3:60–61). To our knowledge, the present work reports the first record of interspecific amplexus and necrophilia between *T. typhonius* and *D. muelleri* and indeed, among the families Microhylidae and Hylidae.

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**TESTUDINES — TURTLES**

**BATAGUR TRIVITTATA** (Burmese Roofed Turtle). **DESCRIPTION AND PHENOLOGY OF SEXUAL DICHROMATISM.** *Batagur trivittata* is a large (carapace length [CL] to 580 mm), critically endangered (< 10 adult females survive in the wild),
aquatic turtle endemic to the major rivers of Myanmar (Ernst and Barbour 1989. Turtles of the World. Smithsonian Institution Press, Washington, D.C. 313 pp.; Rhodin et al. 2011. Turtles in Trouble: The Worlds’ 25+ Most Endangered Tortoises and Freshwater Turtles – 2011. IUCN Tortoise and Freshwater Turtle Specialist Group, Lunenburg, Massachusetts. 54 pp.). Adult _B. trivittata_ exhibit pronounced sexual dichromatism; mature males have an olive-green carapace with a black vertebral stripe and two flanking dark lateral stripes, the plastron is ivory white, the neck is yellowish, and the head is bright yellow-green with a prominent black stripe extending backwards from the nostrils. In contrast, the carapace, plastron, and head-neck of the much larger mature females are uniformly dark brown to gray-black (Theobald 1867–68. J. Linn. Soc. Zool. 1868:4–64; Smith 1931. The Fauna of British India, including Ceylon and Burma. Vol. 1. Loricata and Testudines. Taylor and Francis, London. 185 pp.). Hatchlings and juveniles of both sexes have a dark greenish-brown carapace with a pale yellow plastron. Although sexual dichromatism has long been recognized in _B. trivittata_ (e.g., Theobald, op. cit.), the age and body size at which these differences become apparent has hitherto gone unreported. We here describe the development of sexually dimorphic coloration in two cohorts of _B. trivittata_ being reared in captivity as part of a head-starting conservation program (Platt et al. 2014. Turtle Survival 2014:45–48).

The cohorts of young turtles on which our observations are based were hatched from eggs deposited by wild female _B. trivittata_ during February–March 2012 and 2013 in sandbanks along the Chindwin River in Sagaing Region, Myanmar. We collected the eggs shortly after deposition (< 24 h) and incubated them under natural conditions at a secure sandbank near Limpaha Village (25.80570°N; 95.52200°E; India-Bangladesh datum). Upon hatching (late May through early June), the neonates were transferred to 946-liter fiberglass tanks and maintained for three years (stocking density of 20–25 hatchlings/tank during the first year, reduced to 10–12 juveniles/tank in subsequent years). Young turtles were reared on a diet composed primarily of chopped water spinach (_Ipomoea aquatica_; provided on alternate days) and commercial cat kibble (provided once per week). At three years of age, each cohort was transferred to a concrete rearing pond (9.1 × 12.1 m and 12.1 × 12.1 m; both ponds ca. 1.5 m deep) and watermelon and figs (_Ficus glomeratus_) were added to the diet when available. We weighed, measured, and recorded the shell and head coloration of each turtle during February or March 2013–17. The 2012 and 2013 cohorts consist of 85 and 135 turtles, respectively.

Differences in coloration among individuals in each cohort were not apparent during the first two years post-hatching; plastrons remained white to yellow, carapaces were a uniform greenish-brown, and head coloration a dull green. At age three, a slight darkening of the plastron was evident on a few turtles, but otherwise plastron, carapace, and head coloration appeared unchanged from previous years. Sexual dichromatism first became evident at age four in both cohorts. At this age, females began to display areas of dark pigmentation on the plastron, plastral bridge, and undersurface of the marginal scutes. The degree of pigmentation varied greatly among individuals with some displaying extensive, well-defined dark patches while in others pigmentation was faint although discernible, and confined to small areas of each scute. On the plastron and underside of the marginal scutes, darkening appears to begin in the posterior distal-most corner of each scute and radiates upwards and outwards towards the mid-line. Darkening of the plastral bridge followed a similar pattern except the pigmentation extends upwards and outwards, following the mid-line. In four-year-old males, the plastron becomes bright cream-white, the black head-stripe is obvious, and the head assumes a subdued greenish hue. The carapace is gray-brown and the three black carapacial stripes typical of adult males are not yet visible. A small number (<10%) of individuals in each cohort retained juvenile coloration at age four and could not be reliably sexed. The mean (± 1 SD) CL of four-year-old _B. trivittata_ was 210 ± 38 mm (N = 220; range = 113–280 mm). The mean CL of males (CL = 212 ± 31 mm; range = 113–260 mm; N = 71) was slightly larger than females (CL = 208 ± 41 mm (range = 116–280 mm; N = 137), although this difference was not significant (two-tailed t-test with unequal variances; t = -0.67; DF = 176; P = 0.50).

At age five (2012 cohort only), dichromatic coloration was more pronounced. Among many females, dark pigmentation of the plastral bridge and underside of the marginal scutes is near-complete or complete (Fig. 1A). Pigmentation of the plastron in most females was extensive, although as with four-year-old turtles, considerable individual variation was noted (Fig. 1B).
The carapace and head-neck of females are grey-black (Fig. 1C). Among males, the yellow-green head coloration becomes brighter and more defined, and faint striping is evident on the carapace (Fig. 1D). These color changes in males are accompanied by a pronounced thickening of the tail (Fig. 1E). The mean (± 1 SD) CL of five-year-old turtles was 264 ± 18 mm (range = 224–303 mm). Five-year old females (CL = 270 ± 18 mm; range = 224–303 mm; N = 56) were larger than males (CL = 250 ± 11 mm; range = range = 230–274 mm; N = 29) and this difference was significant (two-tailed t-test with unequal variances; t = 6.05, DF = 80, P < 0.0001).

In conclusion, we found that sexually dichromatic coloration becomes apparent among B. trivittata when CL exceeds about 120 mm between the age of four and five years, at least under captive conditions. We expect dichromatism to develop at a later age among wild turtles, which presumably grow at a slower rate. Whether there is a body size × age interaction as demonstrated in some reptiles (e.g., Alligator mississippiensis; Joanne and McNaeve 1987; In Webb et al. [eds.], Wildlife Management: Crocodiles and Alligators, pp. 329–340. Surrey Beatty & Sons, Pty., Ltd., Chipping Norton, NSW) remains unknown. Furthermore, our observations indicate dichromatism first becomes evident at about the same age the sexes begin to diverge in body size. Shine and Iversen (1995). Oikos 72:343–348) determined that females of most turtle species attain sexual maturity at about 70% of maximum body size. According to Smith (op. cit.), female B. trivittata may reach a CL of 580 mm. Based on this value female B. trivittata should thus become sexually mature when CL reaches 406 mm or about twice the current (2017) mean CL of the 2012 cohort. Our observations therefore suggest that sexual dichromatism among B. trivittata becomes evident well before females reach sexual maturity.

We thank the Ministry of Environmental Conservation and Forestry for granting us permission to conduct research in Myanmar. Fieldwork in Myanmar was made possible by generous grants from Andrew Sabin and the Andrew Sabin Family Foundation, Panaphil Foundation, Helmsley Charitable Trust, Margaret A. Cargill Foundation, and United States Fish and Wildlife Service. The field assistance of Tun Win Zaw and Moe Aung Thu was critical to the success of our project. We also thank Deb Levinson and Ruth Elsey for assistance with obtaining literature, and Lewis Medlock for insightful comments on a draft of this manuscript.


It has been suggested that this dietary diversity is a response to the energetic requirements of these animals in the early life stages, facilitating nutritional gains for development and maturation (Bjorndal 1985. Copeia 1985[3]:736–751), and optimizing digestion time (Amoroco and Reina 2008. J. Exp. Mar. Biol. Ecol. 360:117–124). It has also been noted that diet in C. mydas is influenced by resource availability (Balazs 1980. NOAA Tech. Memo. NOAA-TM-NMFS-SWFS-7; Garnett et al. 1985. Wildl. Res. 12:103–112) and that diet selection is linked to the composition and capacity of their hind-gut microflora, which may change as the turtles grow and/or occupy different habitats (Bjorndal 1980. Mar. Biol. 56:147–154).

In 2016 we collected food samples from the esophagi of 39 juvenile and subadult C. mydas (mean body mass 39.30 ± 27.78 kg) during three field forays, and recorded straight carapace length (mean 74.42 ± 27.78 cm). Collection sites were "el Espinazo del diablo" (27.919490°N, 114.194880°W), "el Dátil" (27.777139°N, 114.171358°W) and "la Choya" (27.645778°N, 114.091806°W) at Ojo de Liebre Lagoon, Baja California Sur, Mexico. In all samples, a combination of the red algae Polysiphonia sp., Spyridia sp., and green algae Codium sp. were present and comprised 75% of the total volume. Turtle mean body condition index (BCI) was 1.48 (range = 1.2–1.8), similar to the values reported for previous studies (Koch et al. 2007. Mar. Biol. 153[1]:35–46; Seminoff et al. 2003. J. Mar. Biol. Assoc. U.K. 83:1355–1362), which suggests that the animals were in good nutritional status and had the capacity for future favorable reproductive performance.

This is the first report of targeted Polysiphonia sp., Spyridia sp. and Codium sp. consumption by C. mydas in Ojo de Liebre Lagoon and in Baja California Sur. It has been established that marine algae provide minerals, vitamins, carbohydrates, and protein (Loureńço et al. 2002. Phycol. Res. 50:233–241); they also stimulate the metabolism and immune system, and can reduce heavy metal absorption (Ohta et al. 2009. Biol. Pharm. Bull. 32[5]:892–898). In addition, the ingestion of algae provide an important source of energy in sea turtles (Bjorndal 1997. In P.L. Lutz and J. A. Musick (eds.), The Biology of Sea Turtles, pp. 199–231. CRC Press, Boca Raton, Florida), increasing rates of growth and a faster attainment of sexual maturity (Amoroco and Reina 2008. J. Exp. Mar. Biol. Ecol. 360:117–124). The fact that Polysiphonia sp., Spyridia sp. and Codium sp. accounted for 75% of the total diet of C. mydas corroborates that these red and green algae are a significant food resource for the turtles and the fact that the animals were in good nutritional status suggests the capacity to assimilate nutrients from those algae species (Bjorndal 1990. Bull. Mar. Sci. 47[2]:567–570). It is also important to note that these algae species were not previously reported as components of C. mydas diet in Ojo de Liebre lagoon or in Baja California Sur, suggesting that turtles are able to adapt by shifting their food source. Ojo de Liebre lagoon is an important feeding and development area for C. mydas, and in these inshore foraging habitats, turtles demonstrate high site fidelity (Balazs and Chaloupka 2004. Mar. Biol. 145:1043–1059). For this reason, understanding feeding ecology and diet of sea turtles is essential for their conservation in these areas by identifying important food resources and allowing informed decisions on the management of endangered populations (Bjorndal 1999. In K. L. Eckert et al. [eds.], Priorities for