## **HERPETOCULTURE NOTES**

## **TESTUDINES** — **TURTLES**

*KINOSTERNON SCORPIOIDES* (Scorpion Mud Turtle). SEXU-AL BEHAVIOR. Observations of courtship behavior have been reported for *Kinosternon scorpioides* (Sexton 1960. Mem. Soc. Ci. Nat. La Salle 20:189–197; Rodrigues and Borges-Nojosa 2013. Herpetol. Notes 6:519–521; Rodrigues and Borges-Nojosa 2014. Herpetozoa 26:186–188); however, same-sex sexual behaviors such as homosexual mountings have never been reported for this species. Here we report an occurrence of homosexual mounting in *K. scorpioides*.

Seven *K. scorpioides* (three males and four females) were kept in a cement pit  $(2.7 \text{ m} \times 2.1 \text{ m} \times 0.3 \text{ m})$  at the Núcleo Regional de Ofiologia da Universidade Federal do Ceará (NUROF-UFC), Fortaleza, Ceará, Brazil. The cement pit was filled with water to a depth of 12 cm and also included a small circular island  $(0.5 \text{ m}^2)$  to provide a location for resting and egg laying. This island was surrounded by water (depth = 4 cm, area =  $0.7 \text{ m}^2$ ). The turtles had natural markings and unique coloration that allowed easy visual identification of each individual. These

animals were fed twice a week and were monitored through scan samplings (Martin and Baterson 2009. Measuring Behaviour: An Introductory Guide. Cambridge University Press, Cambridge. 186 pp.) between January and December 2012 every two hours between 0800–1600 h for general behavioral studies. For more details about the sampling, see Rodrigues and Borges-Nojosa (2013, *op. cit.*; 2014, *op. cit.*).

On 19 January 2012 at 1700 h, a homosexual mounting was observed between two male *K. scorpioides*. The largest male living in the cement pit mounted the carapace of a smaller male and performed fast horizontal head movements over the other's head. It was not possible to see either turtle's tail position owing to low visibility in the water. Total duration of the event was not recorded because it was not possible to know how and when it began. The mechanisms related to the occurrence of homosexual mountings are apparently poorly understood in turtles and future studies could facilitate knowledge of this behavior.

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## STAUROTYPUS TRIPORCATUS (Northern Giant Musk Turtle).

LONGEVITY. The record longevity for Staurotypus triporcatus is based on an animal obtained as an "adult" of unknown body size and maintained in captivity for 33 yr 6 mo (Slavens and Slavens 2000. Reptiles and Amphibians in Captivity: Breeding-Longevity-Inventory. Slaveware, Seattle, Washington). On 25 April 1981, I purchased an adult male (carapace length 263 mm) in the food market in Villahermosa, Tabasco, Mexico. The turtle was maintained in captivity on a diet of trout chow and live fish, has grown only 4 mm in carapace length and is still alive and healthy at this writing (29 January 2016), representing a minimum longevity of 34 years, 9 months. Based on growth data in Legler and Vogt (2013. Turtles of Mexico. University of California Press, Berkeley. 416 pp.), this turtle was at least nine years old when purchased, and is thus at least 43 years old. This represents the record longevity for the genus and for the family Staurotypidae.

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TERRAPENE ORNATA ORNATA (Plains Box Turtle). ESTIVATION. A long-term captive adult male Terrapene ornata ornata has been kept in a large outside naturalistic enclosure from late April to late October and hibernated in a controlled environment from November to April between 2005 and 2014. The turtle was kept active through the winter of 2014-2015 for educational use and due to a mild ear infection. It was placed in the outdoor enclosure in early May 2015. The turtle was initially active during the day and formed in at night. It was unseen for several days, so a search found the turtle buried 8-10 cm deep in loose soil. It reburied itself a few days later and was not seen again until 19 September 2015, one day after a 7-cm rain event. There had been several other large rain events in July and August, but those did not bring the turtle out of estivation.

The turtle entered estivation prior to 25 May 2015, but the exact date was not recorded. The minimum length of estivation was 117 days and the depth of estivation was a minimum of 15 cm. This exceeds the published lengths of 93 days in *Clemmys guttata* (Milam and Melvin 2001. J. Herpetol. 35:418–427) and three months in *T. ornata luteola* (Plummer 2004. J. Herpetol. 38:589–593) by 24 days. Upon emerging from estivation the *T. ornata ornata* appeared healthy and active.

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## SQUAMATA — SNAKES

**EUNECTES MURINUS (Green Anaconda). REPRODUCTION / FACULTATIVE PARTHENOGENESIS.** Obligate parthenogenesis is well documented in at least 25 species of lizards, but only a single snake species, *Indotyphlops* (formerly *Ramphotyphlops*) braminus (Vrijenhoek et al. 1989. In Dawley and Bogert [eds.], Evolution and Ecology of Unisexual Vertebrates, pp. 19-23 Bulletin 466, New York State Museum, Albany, New York). Occasional cases of facultative parthenogenesis have also now been documented in an increasing number of otherwise sexual snake species, including Python bivittatus (Groot et al. 2003. Heredity 90:130-135); Boa constrictor (Booth et al. 2011. Biol. Lett. 7:253-256); Epicrates cenchria (Kinney et al. 2013. 2-13. Zoo Biol. 32:172-176); E. maurus (Booth et al. 2011. J. Hered. 102[6]:759-763); Acrochordus arafurae (Magnusson 1979. Copeia 1979[4]:744-745; Dubach et al. 1997. Herpetol. Nat. Hist. 5[1]:11-18); Thamnophis couchii (Germano and Smith 2010. Southwest. Nat. 55[2]:280-282); T. elegans vagrans and T. marcianus (Schuett et al. 1997. Herpetol. Nat. Hist. 5[1]:1-10); Agkistrodon contortrix (Booth and Schuett 2011. Biol. J. Linn. Soc. 104:934-942); Crotalus durrisus unicolor and C. horridus (Schuett et al., op. cit.). We here report the first documented case of facultative parthenogenesis in Eunectes murinus.

On 11 August 2014, a female *E. murinus* (SVL = 2462; total length = 2832 mm), held in the collection at Mark O'Shea's Reptile World, Discovery Trail, West Midland Safari Park (WMSP), Bewdley, Worcestershire, United Kingdom, gave birth to three live and five dead neonates, all confirmed as females (SVL = 600–685 mm; total length = 715–795 mm). The female has been in the collection since 27 March 2009 (5 years, 4.5 months) during which time it has been maintained solely in the company of a single larger (4.0 m+) female. Prior to its arrival at WMSP, as an immature subadult, the female was maintained in a private collection, also in isolation from any male, thereby ruling out the possibility of long-term sperm-storage being responsible for the birth.

The small size of the litter, the high mortality, and its allfemale composition, are all compatible with other cases of boid parthenogenesis (Booth et al. 2011. J. Hered. 102[6]:759-763; Kinney et al., op. cit.). Tissue and blood samples were taken from all live and dead neonates, and the adult female, as part of regular veterinary screening requirements, and surplus samples were shipped to Warren Booth, University of Tulsa, Oklahoma, USA. The dead neonates were accessioned into the Natural History Museum, London (NHMUK 2013.486-490, field nos. MOS 3500-04). The three live neonates were maintained in the WMSP collection, with the subsequent death of the weakest on 7 January 2015. Post-mortem gross and histopathological examination of this individual identified bacterial and fungal pathogens and reduced body condition; the carcass was not retained. At the time of writing, almost 15 months post-birth, the remaining two neonates are feeding well and thriving.

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