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Terrapene carolina carolina

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TERRAPENE CAROLINA CAROLINA (Eastern Box Turtle). **REPRODUCTION.** Female *Terrapene carolina* containing oviductal eggs have been recorded in Virginia from 26 May to 25 July (Mitchell, *in press*. The Reptiles of Virginia. Smithsonian Inst. Press, Washington, D.C.). Other reports of reproduction in *Terrapene* (see list in Ernst and McBreen 1991. Cat. Amer. Amphib. Rept. 512.1–512.13) indicate that nesting occurs in late spring and early summer throughout its range.

On 9 October 1992, we found a road-killed, 121.5 mm plastron length, gravid female in Newport News City Park, Newport News, Virginia. Presumably she had been active following rains during the morning and previous night and was killed between 1330 and 1430 h EDT. A hatchling *Chelydra serpentina* covered in mud was also found on the road at that time. The female *T. carolina* contained three oviductal eggs, two of which were broken when she was crushed. The third measured 35.5 x 19.2 mm and weighed 7.9 g. Two vitellogenic follicles measuring 14.1 mm and 11.6 mm occurred on the right side and three smaller follicles, 5.2 mm diam, were present on the left side. The unbroken egg was incubated in the laboratory but development did not occur.

We are unaware of other reports of oviductal eggs in *Terrapene carolina* in the fall season. Three competing hypotheses account for this observation. (1) The female was a resident of the park seeking a nest site for oviposition. Consequently, if the eggs had survived, they would have overwintered in the nest. If true, then it is unlikely that embryonic development could have taken place after mid-October at this latitude. Thus, the eggs of this species may sometimes undergo embryonic diapause (Ewert 1985. *In* C. Gans et al. (eds), Biology of the Reptilia, Development A, Vol. 14, pp. 72–267, John Wiley & Sons, New York). (2) The eggs could have been retained in the resident female's oviducts without embryonic development and overwintered along with her. The eggs could then have been deposited the following spring. Egg retention in natural populations has been documented for periods of several weeks in emydids and kinosternids (Moll 1979. *In* Harless and Morlock (eds.), Turtles: Perspectives and Research, pp. 305–331, John Wiley & Sons, New York) but there are no reports of turtles retaining eggs over winter under natural conditions. (3) The female was a recently released captive that had retained her eggs throughout the summer and early fall. Turtles kept in captivity routinely retain eggs in the oviducts when nesting conditions are lacking and are occasionally discovered with eggs in the body cavity as long as several months after capture (Cagle and Tihen 1948. Copeia 1948:66). We were unable to determine whether any of the crushed eggs were in the female's body cavity. Thus, we cannot say for certain that the female was not a former captive that had been recently released in the park. The lack of abnormal wear patterns on the plastron and claws provides circumstantial evidence that she was at least not a long-term captive. Additional observations of naturally occurring ovigerous *T. carolina* in the fall season and of egg retention in captives would help to establish which of these hypotheses is valid.

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