

SHORT NOTE:

NESTING BEHAVIOUR OF *RHINOCEMYS PULCHERRIMA* IN COSTA RICA (TESTUDINES: EMYDIDAE)

JULIÁN MONGE-NÁJERA, BERNAL MORERA AND MARIA CHÁVEZ

Museo de Zoología, Universidad de Costa Rica, Costa Rica.

(Accepted 8.9.87)

INTRODUCTION

Rhinoclemmys pulcherrima (Gray, 1855) is a semiaquatic emydid turtle which inhabits dry forests from northern Mexico to Costa Rica. Very little is known about its habits, although it is quite abundant in some areas (Pritchard, 1979; Ernst, 1981). This is the first report on its nesting behaviour and is based on three events: a female that nested in 1979, and another that nested in 1980 and 1984. They were kept outdoors in a 100m² garden in San José, within the range of the species.

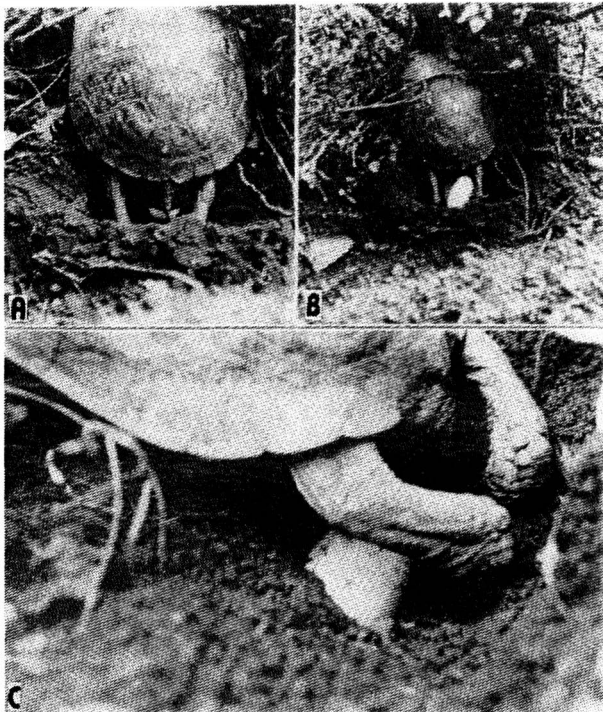


Fig. 1A: Egg-laying begins. Notice the egg partially emerging from the cloaca; B: The relatively large eggs are stacked at the bottom. C: Eggs are covered with dirt.

Females about to nest become more active than usual and apparently search for a place devoid of grass and roots, under bushy vegetation that perhaps serves as camouflage during the nesting process; nesting may occur anytime from May to December (Castillo, 1986), and includes five basic steps. 1. The female anchors herself to the ground by her forelegs and excavates with alternate movements of the hind legs. The claws help fragment the clods, dirt is thrown backwards. She

may stop for short periods, and after about an hour, the hole is about 10cm deep. 2. The tail is oscillated vertically for a few min. 3. A translucent, thick substance begins dropping from the cloaca, and egg laying begins (Fig. 1a). The head is retracted thrice into the carapace each time an egg is laid (N = 1-3 eggs). The interval between deposition of each egg is 2-3 min. In all cases the nests were later found open and the eggs had been destroyed, so we could not measure them, but normally they measure about 4.6 x 2.9cm (Castillo, 1986). 4. These are stacked at the bottom with the legs (Fig. 1b), and tail oscillation continues for about 10 min. after oviposition. 5. She covers the eggs with dirt (small amounts initially) which takes some 25 min. (Fig. 1c). The dirt is initially tamped by the claws of the hind limbs, then by the whole terminal part of the hind limb, with a 'shivering' movement. The body moves in a semicircle, the forelegs serving as axis, which increases the area covered by the hind legs while tamping. Finally, twigs and other debris are added with hind limbs. When the female leaves the nest, the neck is moved as if hiccupping. Steps 1-3 in nesting sequence of *R. funerea* are similar (A. Coto, 1986, pers. com.), and interestingly, *R. punctularia* and *R. diademata* do not dig nests, although their eggs soon become inconspicuous as mud and fallen leaves cover them in the wet forest (Pritchard and Trebbau, 1984). Nest digging is the rule in *R. pulcherrima* (Castillo, 1986) and might have an adaptive function in the dry environments that it inhabits.

ACKNOWLEDGEMENTS

We thank the comments of Alvaro Coto and Douglas Robinson.

REFERENCES

- Castillo, V. (1986). Factores ecológicos y de mercado de la reproducción de *Rhinoclemmys pulcherrima* y *Kinosternon scorpioides* (Testudines: Emydidae y Kinosternidae) en Costa Rica. *Thesis, Universidad de Costa Rica*. 160pp.
- Ernst, C. H. (1981). *Rhinoclemmys pulcherrima*. In *Catalogue of American amphibians and reptiles*, 275.1-275.2.
- Pritchard, P. (1979). *Encyclopedia of turtles*. New Jersey: T. F. H. Publications.
- Pritchard, P. and Trebbau, P. (1984). *The turtles of Venezuela*. U.S.A.: Society for the Study of Amphibians and Reptiles.