RECORD EGG CLUTCHES FOR CLEMMYS INSCULPTA

Ernst and Barbour (1972) record the maximum clutch size for the Wood Turtle (Clemmys insculpta) as 12. Gammons' (1871) account of a female laying 18 eggs was rejected by Carr (1952). On 13 June 1976, I collected a clutch of 18 eggs of this species during an on-going study of a marked population of Wood Turtles in Schoolcraft County, Michigan. The eggs were tightly packed in a globular cluster; the top egg was approximately 70 mm below the surface. The structure of the nest left little doubt that it was the work of a single female turtle. All but two of the eggs were of normal size for the species; none of the eggs were fertile. The normal-sized eggs ranged in length from 33 to 36 mm (mean = 34 mm). The two abnormal eggs were both 30 mm in length, and irregular in shape.

Previously, two clutches of 13 eggs each were collected in the study area on 19 June 1974 and 24 June 1975. On the former date, the nesting process was observed; the nesting turtle proved larger than average for a female of this population (carapace length = 194 mm). All eggs from these two clutches proved fertile and hatched successfully in the laboratory. The possible existence of a direct relationship between size of the female and brood or clutch size receives frequent mention in the literature, but the relationship between egg fertility and clutch size appears to be unknown at present.

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Herpetological Husbandry

REPRODUCTION IN CAPTIVE LOWER CALIFORNIA RATTLESNAKES, CROTALUS ENYO ENYO (COPE)

There is little literature data concerning reproduction of the Lower California rattlesnake, Crotalus enyo enyo, a form occurring from El Marmol south to Cape San Lucas, Baja California, Mexico. Klauber (1937, 1972) estimated the average size at birth as 225 mm, and gave brood sizes of six and nine. The present report gives details of successful reproduction in captive C. e. enyo in two separate collections with notes on the young from four litters.

MATERIALS AND METHODS.-- A young adult female C. e. enyo (total length 714 mm, weight 447 g, postpartum) received 6 December 1972 and a young adult male (total length 662 mm, weight 332 g) received 20 October 1974, were placed on exhibit at the Fort Worth Zoological Park in a 61 cm fiberglas cage (Hulsey, 1973). The cage was decorated with several rocks and a small live cactus, arranged to provide hiding areas. Pea gravel comprised the substrate. Water was always available but the cage remained dry. Artificial lighting was provided between 0800 h and 1730 h daily with a 30 w fluorescent tube (Vitalite). Additionally, clear skylights above the cage provided a natural photoperiod for the Fort Worth area. Temperature fluctuated daily from approximately 23° C to 32° C in summer and from approximately 22° C to 28° C in the winter. Each snake fed at weekly intervals on one 15-20 g mouse.

The conditions under which the specimens in the collection of the second author were kept were somewhat different from those given above. The two females (CWR specimens A, B) were born in captivity during the first week in August 1972 and were acquired before their first shed. They were fed newborn mice every five days for the first two months and then were fed weekly one mouse of appropriate size until they reached adult size which was about 18 months of age. At that time biweekly feeding was begun. The snakes were housed in 38 liter reptile tanks with newspaper as substrate and a few large flat rocks for hiding areas. The daytime temperature was generally kept between 27° C and 30° C throughout the year, although summer temperatures were occasionally as high as 33° C. Night temperatures were usually between 22° C and 25° C. No attempt was made to maintain a regular photoperiod.

The male specimen was received in mid-1974 and was kept under the same conditions as the females. Prior to this it had been maintained in a large container with heat lamps focused at particular spots which provided an opportunity for thermoregulation.

OBSERVATIONS.-- The first observed reproductive activity in the FWZP specimens was on 1 June 1976, when the female began shedding her skin. The male was courting with a series of alternating tongue flicks and head jerks along the female's dorsum. Courting activity and attempted copulation continued throughout the day and then again on 2 June 1976 without observed copulation. At 0800 h, 3 June, copulation was in effect and continued two hours. No further reproductive activity was noted until 30 August 1976 when the female again shed. Although the male attempted to stimulate the female through courting gestures, she remained coiled and appeared unreceptive. On 1 September 1976, the female was isolated off exhibit. She continued feeding weekly, and her weight appeared to increase dramatically after 1 October.

At 0800 h, 21 November 1976, 171 days after observed mating, parturition had begun and five young were present. One appeared newborn and was coiled in a thin, watery fluid. At 1830 h the female began contracting posteriorly and a juvenile's head appeared through her cloacal opening. Further contractions caused the juvenile to crawl completely from the cloaca. Fluid, but no actual membrane, could be detected. At 0930 h the last juvenile emerged as described above and had no detectable membrane. Klauber (1972) found egg teeth in embryos of this species. None was noted in this brood.

The juveniles were measured using the squeeze box technique (Quinn and Jones, 1974) and weighed on a triple beam balance on 22 November 1976. Total length varied from 214 mm to 235 mm (mean 223.4 mm) and weight varied from 9.7 g to 11.1 g (mean 10.2 g). Mean total length of the brood was 31.2 percent of the female parent's total length. Sex was determined by percentage of tail length to total length. The brood consisted of two males and five females. Percentage of tail length to total length in the two male snakes was 8.5 and 9.8 (mean 9.1) and in the five female snakes it was 5.0 to 6.8 (mean 5.9). Subcaudal counts for the males were 22 and 24 (mean 23) and ranged from 18 to 20 (mean 19.5) for the females. Coloration and pattern closely resembled that of adult snakes (Figs. 1 and 2).