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 Naranjo south to Cape San Lucas, Baja California, Mexico. Klauber (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 male, C. e. enyo (total length 714 mm, weight 444 g, post-partum) received 6 December 1972 and a young adult male (total length 662 mm, weight 372 g) received 10 October 1976. They were placed on exhibit at the Fort Worth Zoological Park in a 61 cm fiberglass 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 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 20°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 bimonthly 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 25°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 38 adult 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 FMZ 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 for 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 stressed. On 2 October 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 reared 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 224.4 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% 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 6.0 (mean 5.4). Subcaudal counts for the two 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).