REPORT ON THE FEEDING AND GROWTH OF A JUVENILE MOTTLED ROCK RATTLESNAKE, *CROTALUS LEPIDUS LEPIDUS*, DURING THREE YEARS IN CAPTIVITY

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INTRODUCTION

There are surprisingly few literature accounts of the birth, neonatal size, feeding, or growth of rock rattlesnakes, *Crotalus lepidus*, and in particular of the mottled rock rattlesnake, *Crotalus lepidus lepidus*. Literature accounts pertaining to the birth, neonatal size, or neonatal feeding

Foto 1: Crotalus lepidus klauberi, banded rock rattlesnake, Chiricahua Mountains, Arizona, U.S.A. Foto C. Matisson.

and growth are scant, but include Armstrong & Murphy (1979), Falck (1940), Fitch (1970), Harris & Simmons (1972), Kauffeld (1943), Klauber (1937, 1952, 1956), McLain & Scott (1981), and Tennant (1985).

To date, however, I have only been able to find one account of the feeding and growth of the subspecies *Crotalus lepidus lepidus* in captivity (Kalck, 1940). This paper contained data collected on a sub-adult specimen that was kept in captivity for 14 months. While this paper did contain information on the food accepted by this snake as weel as its increase in total length, it was lacking in that no monthly length increases were listed and no weight measurements were given for any time during the 14 month period.

The information presented below was collected from a male *Crotalus lepidus lepidus* that I received on 26 December, 1984 and maintained in captivity for three years. It was actually born on 2 November, 1984. The first part of the study was carried out for two years, from 26 December 1984 through 26 December 1986, for the second part data were collected from 27 December, 1986, through 26 December, 1987, (which corresponds to this specimen's third year in captivity).

THE FIRST TWO YEARS.

Prior to the onset of this study, it is known that this neonatal *lepidus* shed once and subsequently ate 2 mouse pinkies.

Upon its arrival, this neonate was assigned an inventory number (83-A) and was placed in a plastic container measuring 31.1x16.5x8.9 cm. After approximately six months, the juvenile *lepidus* was transferred to a larger plastic container that measured 39.4x27.9x17.1 cm. Newspaper was used as a substrate in both containers, and a small water dish was present at all times.

Although juvenile *lepidus* are known to feed readily on lizards, pink mice were offerd first because this specimen had previously accepted 2 pinkies, and they were also more readily available than lizards. During the first 6 months, mice pinkies (either live or frozen-thawed) were the predominate food item. During the next 6 months, mice fuzzies (live or frozen-thawed) were offered and subsequently accepted. After this, appropriately sized mice (fresh-killed or frozen-thawed) were offered and readily taken.

During the 2 year period of this study, the juvenile *lepidus* fed a total of 65 times, an average of once every 11.2 days. Shedding occurred 10 times, an average of once every 73 days. On an annual basis this breaks down to 35 feedings during the first year (once every 10.4 days) and 30 during the second (once evry 12.2 days) while shedding occurred 5 times each year. Table 1 gives the exact dates that feeding and shedding occurred, as well as the type and quantity of food accepted by this specimen.

Following the same procedure that I have used in previous reports (Strimple, 1985 a & b) the weight and total length of this specimen were recorded monthly. Weights were obtained using an Ohaus triple beam balance, and are recorded to the nearest 0.1 g. Total length measurements were taken using the technique of Quinn & Jones (1974) and are given to the nearest 0.1 cm. Table 2 lists the exact measurements and the dates on which they were taken.

301284	shed	310585	2mp	161085	3mf	150686	shed
090185	1mp	080685	2mp	051185	2mf	170686	1sm
010185	1mp	130685	1mf	161185	2mf	190686	1sm
200185	2mp	220685	shed	081285	3mf	080786	1sm
260185	2mp	010785	1mf	150186	shed	210786	1sm
110285	2mp	100785	1mf	170186	1sm	050886	1m
210285	2mp	280785	1mf	280186	1sm	100886	shed
030385	1mp	050885	1mf	100286	1sm	160886	1sm
100385	2mp	100885	shed	040386	4mf	050986	1sm
240385	1mf	190885	2mf	260386	shed	220986	1sm
290385	shed	260885	2mf	020486	1sm	051086	1m
310385	1mf	080985	2mf	100486	1sm	121086	1m
080485	2mp	180985	2mf	150586	3mf	171086	shed
220485	2mp	220985	shed	280486	4mf	221086	1m
010585	3mp	290985	2mf	100586	2mf	031186	1m
090585	2mp	051085	1mf	190586	2mf	161186	1m
200585	2mp	091085	1mf	020686	4mf	011286	1m
260585	2mp	121085	2mf	090686	2mf	171286	1m

Table 1: Feeding and shedding data for *Crotalus lepidus lepidus* during two years in captivity (mp - mouse pinkie; mf - mouse fuzzy; sm - small mouse; m - adult mouse).

As can be clearly seen from the data in Table 2, a noticeable decline in total length growth occurred during the second year. During this time, the juvenile *lepidus* grew 9.2 cm as compared to the growth of 17.8 cm during the first year. This calculates out to be a rate of .8 cm/month for the second year, and 1.5 cm/month for the first.

Conversly, the increase in weight of 50.7 g during the second year is greater than the increase of 37.2 g for the first. The values calculate to be rates of 4.2 g/month and 3.1 g/month, respectively.

The data reported on in this paper was collected on a captive specimen that had access to food at regular intervals, all year long, for two years. A growth rate, such as the one recorded here, would not be expected for wild specimens and should therefore only be used as a comparison for other captive specimens.

Date	Total length (cm)	Weigth (g)	Date	Total length (cm)	Weigth (g)
261284	23.5	13.0	250186	42.9	56.1
240185	24.8	15.9	270286	43.5	60.0
270285	25.7	18.6	270386	44.8	62.1
170385	27.3	22.5	240486	45.7	64.7
250485	28.3	26.9	290586	46.4	68.9
290585	29.5	29.3	250686	46.7	75.4
300685	31.8	31.8	280786	47.9	82.2
280785	33.7	34.1	240886	48.6	89.1
160885	35.6	37.2	270986	49.5	93.4
250985	37.1	42.7	251086	50.5	97.1
221085	38.1	43.8	221186	51.1	101.9
241185	41.3	46.2	261286	52.1	106.8
261285	41.3	50.2			

Table 2: Total length and weight measurements for *Crotalus lepidus lepidus* during its first two years in captivity.

THE THIRD YEAR

Since december 1986 the *Crotalus lepidus lepidus* has been maintained in a glass aquarium measuring 50.5x26.4x31.0 cm. Newspaper is provided as a substrate and a water dish is present at all times. Shelter is provided by a flat piece of shale which is raised off the ground at one end by a small rock. This retreat is frequently utilized by the snake, especially during the daylight hours.

The room in which this cage is kept is lighted by several fluorescent tubes which are 244 cm in length. These lights are plugged into timers, thereby facilitating the implementation of a diurnal cycle. The duration of the light cycle is adjusted monthly to correspond to the local, seasonal changes which occur in Cincinnati.

The cage in which this specimen is kept, is not provided with supplemental heat and its temperature corresponds to the ambient temperature, which flutuates between 21-27°C. The relative humidity in the cage remains fairly constant, ranging only between 70-80%.

This specimen of *Crotalus lepidus lepidus* began feeding on pinkie mice from the time of its first feeding, and was maintained on appropriately sized mice throughout the 2-year duration of the study. Since that time, mice (weighing approximately 10-15 g) have been accepted by this snake at every feeding, with only 7 exceptions. In each of these instances, either pinkie or fuzzy rats were used instead of mice.

During the 1-year period of this study (the third year of captivity for this snake) this specimen fed a total of 24 times, an average of once every 15.2 days. Shedding occurred 4 times, an average of once every 91.3 days. The exact dates on which feeding and shedding occurred, as well as the type and quantity of food accepted, are listed in Table 3.

060187	1m	200487	1m	010887	2m	241087	1m
250187	1m	100587	1m	150887	1m	051187	1rp
100287	1m	240587	1m	210887	1m	161187	2rp
250287	shed	190687	2m	080987	1m	241187	2rp
070387	2m	050787	shed	230987	1rf	101287	2m
200387	1m	060787	1m	051087	2rf	131287	shed
050487	1m	290787	1m	101087	shed	211287	2m

Table 3: Feeding and shedding data for *Crotalus lepidus lepidus* during its third year in captivity (m - adult mouse; rp - rat pinkie; rf - rat fuzzy).

The procedure used to measure and report the growth of this specimen is the same one that I have used in previous reports (Strimple 1985 a & b). During the period of this study, this specimen increased 7.6 cm in total length, an average of 0.6 cm/month, and gained 64.4 g, an average of 5.4 g/month. The exact measurements and the dates on which they were taken are listed in Table 4.

Date	**Total length (cm)**	**Weigth (g)**	**Date**	**Total length (cm)**	**Weigth (g)**
280187	50.2	112.9	260787	53.7	147.7
250287	50.8	118.2	250887	54.6	154.9
200387	51.6	122.8	250987	55.7	160.0
270487	52.2	128.7	231087	56.2	164.9
270587	52.7	133.5	241187	63.9	168.2
260687	53.3	140.0	261287	63.9	171.2

Table 4: Total length and weight measurements for *Crotalus lepidus lepidus* during its third year in captivity.

Now that this male specimen (*Crotalus lepidus lepidus* #2) is mature, an attempt will be made to breed it in April, 1988. At this time, however, the only female that I have (*Crotalus lepidus lepidus* #1) is the parent of this male. Therefore, in an attempt to avoid inbreeding, a different female will be obtained for breeding with male #2. Moreover, an attempt will be made to breed female #1 with the other, unrelated male (*Crotalus lepidus lepidus* #3) in my collection, which was collected in Del Rio County, Texas, on September 1987.

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