
BREEDING *ELAPHE GUTTATA EMORYI*

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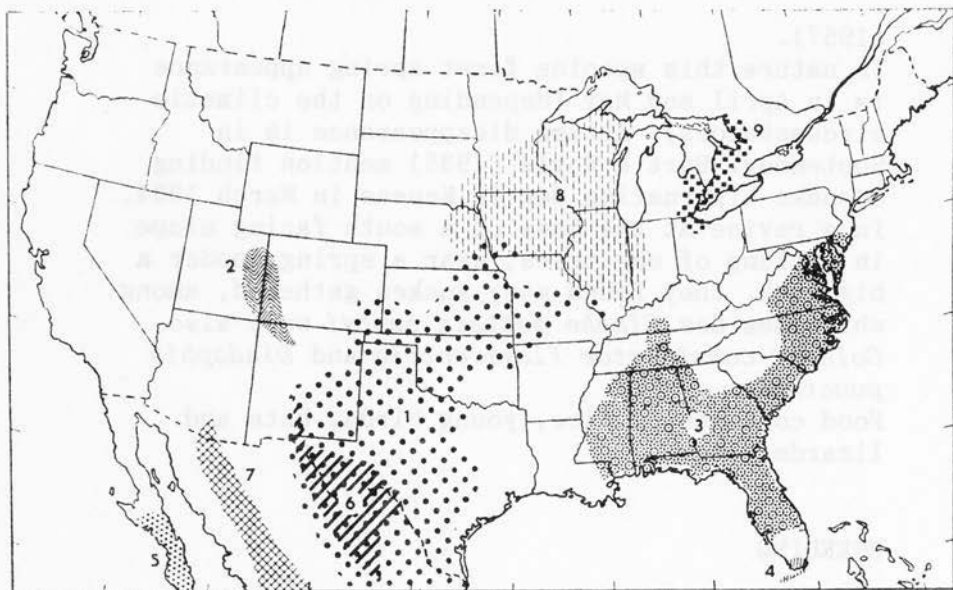
Contents: Nomenclature - Description - Habitat
and food - breeding - Breedingstock - Conditions -
Mating and gestation - The eggs and the hatchlings
- Literature.

NOMENCLATURE

This snake was first described in 1853 by Baird and Girard under the name *Elaphe emoryi emoryi*. In 1952 however, Dowling described it as a subspecies of *Elaphe guttata*, which still is the commonly used scientific name. Common names are for instance brown rat snake, chicken snake, eastern spotted snake, Emory's snake, prairie rat snake, Texan ratsnake and spotted mouse snake.

DESCRIPTION

Elaphe guttata emoryi bears great likeness to *Elaphe guttata guttata* as far as the pattern is concerned, but differs from it in colour: the spots and dorsal rhombs are not red but olive-brown, black-bordered; the dorsal colour between the spots is pale drab-gray or ecru-drab. This description could give you the impression of a somewhat "ordinary" appearing snake, but this wouldn't be right: in spite of the simple colouration, it is a very beautiful snake with a strong pattern. The scales are smooth or slightly keeled. Some specimens have vague longitudinal stripes through the normal pattern, as is sometimes found in *Elaphe guttata guttata*. The total length of this



Elaphe—1, *e. emoryi*; 2, *e. intermontana*; 3, *g. guttata*; 4, *g. rosacea*; 5, *rosaliae*; 6, *subocularis*; 7, *t. intermedia*; 8, *v. vulpina*; 9, *v. gloydi*.

snake in natural conditions is about 120 cm for males, somewhat less for females. Conant (1975) mentions a mean length of 61-91 cm, with a record length of 153 cm. Reid (1983) even mentions an excessive length of about 180 cm for some specimens.

HABITAT AND FOOD

Elaphe guttata emoryi is found in a variety of habitats, like prairies, mixed prairies, flat rock areas, in breaks and canyons, hilly country, woods, along rivers, even near houses. Specimens are found under ground cover as well as in trees. During the warm season, prairie rat snakes are mainly active in the evening and during the night, as many snakes are. For the range of distribution I refer to the map, which I took from Wright & Wright

(1957).

In nature this species first spring appearance is in April and May (depending on the climatic circumstances). Autumn disappearance is in September. Burt & Hoyle (1935) mention finding a snake hibernation den in Kansas in March 1934. In a ravine at the base of a south facing slope in a clump of oak trees, near a spring, under a big rock, they found many snakes gathered, among which besides *Elaphe guttata emoryi* were also *Coluber constrictor flaviventris* and *Diadophis punctatus*.

Food consists of mice, young birds, bats and lizards.

BREEDING

With this species it is notable that the eggs are much bigger and heavier than those of *Elaphe guttata guttata*. Reid (1983) mentions eggs with an average weight of 25.5 grams and hatchlings of 18.7 grams mean weight. As for egg sizes, Wright and Wright (1957) give measurements of 51-61 mm x 20-22 mm, and 40-50 mm x 27-31 mm. The length of the hatchlings is about 32 to 40 cm. The number of eggs in a clutch generally seems to be less than with *Elaphe guttata guttata*. Wright and Wright (1957) mention a clutch of 14, one of 15, one of 4 and one of 5 eggs. Reid's clutch consisted of 10 eggs, of which 3 spoiled. As a comparison: eggs of *Elaphe guttata guttata* weigh about 7 to 12 grams, whilst the hatchling generally weigh between 4 and 7 grams.

THE BREEDING STOCK

My breeding couple was bred in 1986 by an unknown German breeder. I obtained them in 1987 when they

were traded in by a dealer.

CONDITIONS

I keep these animals the same way I keep most of my snakes, namely in a medium sized cage with a ground substrate of wood shavings or saw dust, or sometimes sand or potting soil. A light bulb or reflector lamp serves as heat and light source. These conditions are standard for many captive snakes.

In contrast to many other snake keepers, I only have the lights in the cages on for an average of ten hours a day. The daily light cycle is provided by normal day light. About 9.00 AM, the lamps are switched on and the animals can start warming up. Their artificial sun sets at about 18.00 h. The heat remains in the cages for hours to follow, and it remains light for as long as there is daylight outside, though it is of course always a little darker in the cages. The temperature in my snake room becomes rather high during the summer season, especially in the late afternoon and in the evening, when the sun shines directly on the wall, the flat roof and the windows.

During the winter (namely in January and February) I put the *emoryi*'s in a cage at the cold end of the room. The lowest temperature I measured in the cage, early in the morning, was 4°C; the highest during the day was about 14°C. Temperatures were fluctuating between these values.

After the hibernation period I simply placed the animals together in a cage and waited.

MATING AND GESTATION

From the 25th of March onwards there was mating behaviour repeatedly, during which time the male behaved quite wildly. In April the female shed. Thereafter there was still mating behaviour, but not as heavily as before. On April 17th, during the early afternoon, there was another copulation which lasted for about an hour.

The female kept feeding and became heavier and heavier, until one could see every single egg in her body, especially when she glided over the edge of the water basin (plop, plop. plop...)

THE EGGS AND THE HATCHLINGS

On the 21st of May 1988 between 23.40 and the following morning, she layed 6 beautiful, large eggs. For the exact sizes, the measured weights at two different times and the weight of the young after hatching, refer to table 1.

Table 1: sizes (mm) and weight (g) of the eggs and the hatchlings

egg nr	weight after laying	size eggs	weight 26 May	weight 6 June	weight hatchlings
1	16,5	55x21	18,0	18,0	11
2	17,0	55x21	17,5	17,5	11
3	16,5	51x21	17,5	17,5	11
4	16,0	47x22	17,0	17,0	11
5	13,0	40x20	14,0	14,0	8
6	12,0	27x22	13,0	13,0	8

The thickness of the shells of all the eggs was somewhat irregular. There were local thickenings with a kind of crystallisation; other parts of

the shell were thin and almost transparent. I incubated the eggs in a salad box, buried in moist sand, at a more or less constant temperature of about 29°C. As can be seen in table 1, most eggs did not grow by absorption of moisture from the surrounding sand, as is very often the case with snake eggs. Only the last two, which had less weight from the beginning, showed a little growth.

At the beginning of June I thought I noticed that the eggs began to smell a little, but when candled they all showed tiny red veins. They also remained smooth. Only the transparent spots seemed to become thinner.

On July 11, the 51st day, during the evening, the first three young hatched. The following morning there were another two hatchlings, and on July 13 the last youngster had hatched.

All hatchlings had absorbed all of the yolk sac. It struck me that the young with the least weight had had very little yolk to absorb though: they were clearly much thinner than the other four hatchlings. There was no obvious difference in length between the young.

A striking detail is that all eggs hatched in the same order as that in which they had been layed. Furthermore, there were exactly three couples, of which one was an exact imitation of the parents. One could speak of a "family tradition"!

All young shed nearly within a week and started to eat pinkies almost immediately thereafter. After only a couple of days there was hardly any difference left between the weight of the young with higher hatching weight and those with lower hatching weight.

As far as I know, all young are growing very well.

LITTERATURE

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