

BREEDING *NERODIA FASCIATA*.

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INTRODUCTION

At the beginning of 1986 I received 3 young snakes which should belong to the species *Nerodia sipedon*. Behler & King (1979), record as typical characters for *Nerodia sipedon* the absence of a dark stripe from the eye to the angle of the mouth and only on the first part of the body a marking with transverse bands; the posterior part of the body is marked with alternating spots.

This however is not the case in the three above mentioned snakes. They do have a dark temple spot and the body is from the neck up to and including the tail marked with transverse bands. This are typical characters for *Nerodia fasciata*.

Apart from that both snake species are closely related to each other and *Nerodia fasciata* was in the past considered as a subspecies of *Nerodia sipedon* (Trutnau, 1979). For distribution, description and habitat I refer to Behler & King (1979) and Conant (1975).

THE SNAKES

On 18 April 1986 I received one female and two male *Nerodia sipedon sipedon*. These snakes were born on 26 July 1985 in a terrarium of Erik Nijhof in Groningen. The parent snakes, two females and one male were wild-caught and presumably from Tennessee. Both females gave birth on the same day; the total number of young was 63 (Nijhof, 1987). It was not traceable from which female my trio came. From the colours and markings I suspect that the female and male A are sister and brother and male B their half-brother.

On 18 April 1986 the female weighed 30 g, male A 30 g and male B 20 g. A good three years later, on 12 July 1989 the female weighed 890 g (a few hours after confinement), male A 140 g and male B 130 g. The female has a girth of 14 cm halfway along her body and is about 110 cm long. The males have a girth of 7 cm and are about 65 cm long.

Apart from the considerable difference in size and weight the sex difference is also clearly visible from the thicker base of the tail and the relatively longer tail of the males. The three snakes have become considerably darker in the meantime, especially the males.

THE FOOD

About eighty percent of the food that I give to the snakes consists of chicken heart and chicken stomach. The remaining twenty percent comprises all kinds of other sorts of meat and fish, like earth worms, chicken fillet, beefheart, lean soup meat, spleen, goldfish, cod fillet and smelt. Cod fillet is the least given, because this makes the faeces very odourous.

The food is always amply dusted with a mixture of Nekton MSA, Nekton Rep and Nekton Rep-color in ratio 10:1:1, or with Gistmix or Amrepal. This food also turned out to be perfect for the Garter snakes I kept and bred in earlier years.

The female is enormously voracious, while the males are careful eaters. The difference in eating behaviour may be evident from the following data: in the period of 18 April 1986 to 2 October 1989 the female ate 148 times, While the males A and B respectively ate 104 and 92 times. One meal of the female comprises of 10 to 20 large pieces of meat, while the males eat 4 to 6 small pieces per meal.

THE TERRARIUM

The snakes have lived in various terraria, varying from $1/3 \text{ m}^3$ to $1\frac{1}{2} \text{ m}^3$. On the bottom lies soil, covered with stones. A large, unheated watertank is sunk down in this. A tangle of branches provides climbing possibilities and the possibility to visit the warmer spots.

The terrarium is heated and illuminated with two spotlights and a fluorescent tube; the induction coil of the fluorescent tube provides a local bottom heating.

The day temperature gradient in the terrarium is 18-35°C during the summer period. During the winter period the average day temperature is about 5°C lower. The night temperature is 16-20°C in the summer period and 12-16°C in the winter period.

Concerning the illumination length, a summer/winter cycle is created. In July and August the lamp burns 16 hours. Starting on 1 September the illumination length is shortened by a quarter of an hour every week. During the months January and February the lamp burns 12 hours. Starting on 1 March the illumination length is prolonged by a quarter of an hour every week.

The air humidity in the terrarium is mostly rather low. Every now and then a lot of water is sprayed in the terrarium.

BEHAVIOUR

The males are good climbers, while the female has more trouble with this, mainly because she is very heavily built. The males are also more aggressive than the female. They invariably bite when you take them in your hand or when you get too close to them, while the female only bites when she is hungry.

In the cooler winter period the snakes are less active and get food offered only once every three or four weeks. The female eats normally then, while the males usually refuse food. In the warmer summer period I offer them food once every one or two weeks.

REPRODUCTION

On 14 March 1987 the female sloughed at 16.00 hours. Immediately Male B got very nervous and showed copulation behaviour till far in the night. The copulation behaviour is the same as that of *Thamnophis*-species. On 18 March 1987 the terrarium was sprayed at 13.00 hours, with the result that male A got sexually active. He stayed this way for a few days. On 31 March 1987 the complete terrarium was cleared out, cleaned and provided with new branches and ground. The snakes were put in a bag for half a day. Immediately after they were put back in the terrarium, the female was fanatically pursued by both males. Real copulations were not observed in this period.

After about two months, in mid May, it began to get clear that the female was gravid. The skin between her proximal body scales stayed visible, even when she had not eaten for a week. During the pregnancy she kept eating normally; only in the last month the portions did become smaller, because there was less room available in her body.

Four days before the confinement she ate her last meal during her pregnancy. After the sloughing that led to the copulation behaviour she sloughed again on 28 April 1987.

In 19 July 1987, around 8.00 hours there was nothing special to see in the terrarium, but at 11.30 hours the terrarium was full of young snakes. The female was very calm, even when I took the young out of the terrarium. Sixteen days after confinement she sloughed.

In the meantime she is more voracious than ever. Every activity on my part in the terrarium is reason for her to come rushing towards me and bite at everything that moves. The only way to calm her is to hold a sponge with some Dettol on it in front of her nose; only then she withdraws to another part of the terrarium.

THE YOUNG

There were altogether 20 young (F2) born; one of them was dead, but had still managed to come out of the membrane. The remaining 19 young were very active and bashful, but not aggressive. They all sloughed within a few hours. They weighed about 5 g and were 25 cm long. On 18 August 1987 one young was killed, because it had a lower jaw that grew out of shape and it was not able to eat for this reason; this was not visible shortly after it was born. The young were housed in a small terrarium. The same light cycle was used as that of the parents.

One week after they were born all the young had eaten, although there is a great difference between them. Thirteen specimen are as voracious as their mother, while the other five have inherited the "feeding genes" of their father. These five were separated after a month because they would not eat any more. After a short period of force-feeding them, they started eating again (canned catfood).

On 17 August 1987 the smallest specimen weighed about 10 g and the largest about 15 g. On 28 June 1988 the smallest specimen (males) weighed 30-40 g and the largest (females) 90-105 g. Their food is identical to that of their parents. From their pattern you can carefully suppose that male B is their father.

FURTHER BREEDING

In 1988 the first sexual activity of the males started on 7 February. On 16 February there was a copulation observed between the female and male A. This copulation lasted from 15.40 hours till 7.50 hours. The female kept eating during the entire pregnancy and gave birth on 9 July 1988. The confinement lasted two hours, from 12.00 hours till 14.00 hours.

The number of viable young was 20, of which one was only half the size of the others. There were also seven fully developed, but deformed young born. They had, among other things, an abnormally thick head and a deformation of the lower jaw. Some of these seven died shortly after birth; the others were killed. Also there were two, not completely developed young born (one third of the normal size), of which one has lived for a short while. Further there were some unfertilized eggs.

At least one young was eaten directly after it was born by one of the males and another young almost eaten. The last mentioned was as good as bitten in half. In spite of the fact that this young snake was badly injured, it developed itself into one of the best feeding and fastest growing of the entire litter. After about six months the scars were hardly visible.



Foto 1: *Nerodia fasciata*, male, mannetje; foto F. Sleijpen.



Foto 2: *Nerodia fasciata*, female, vrouwtje; foto F. Sleijpen.

In 1989 the female gave birth on the night of 11 or 12 July, to 42 living young and 4 not completely developed, dead young.

From the young of 1987 I had kept one female. This female copulated on 16 February 1989 with male A. She then weighed 180 g. After the confinement on 22 June 1989, she weighed 245 g. She gave birth to 13 living and one dead young (F3).

IN CONCLUSION

At the end of 1989 I sold all the snakes to a trader. The reason for this was the following: in a period of two years the snakes produced 93 healthy descendants. Except for a few specimens, there was no interest at all from snake keepers in taking the young. This species is apparently not special, rare or "difficult" enough for most snake "lovers". Many would rather pay hundreds or even a thousand guilders for an imported snake that dies after a few months ailing, than pay five guilders for a beautiful, active and virtually problem free captive-born snake. I therefore thought it was nonsensical to keep breeding with this species.

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