

KEEPING AND BREEDING THE TRINKET SNAKE *ELAPHE HELENA* (DAUDIN, 1803)

By: C.M. Langeveld, Cantharel 12, NL-2925 DJ Krimpen a.d.IJssel, The Netherlands.

Translation: Paul Schotten; English corrections: Chris Mattison.

Contents: Introduction - Description and distribution - Reproduction, general - The terrarium - Behaviour and maintenance - Hibernation/winter rest - Breeding - Continuation - In conclusion - Literature.

* * *

INTRODUCTION

In this article I will describe *Elaphe helena*, the trinket snake. As its name suggests, it is a beautiful snake named after Helena, daughter of Zeus. Helena is thought the most beautiful woman in Greek Mythology. When you are compared with the most beautiful woman of mythology, you have to be really beautiful. Although there is no accounting for tastes, *Elaphe helena* is in my opinion one of the more attractive Asian *Elaphe* species. As you can read further on in this article, this snake is very well suited for keeping in a terrarium and it is to a certain extent comparable to *Elaphe guttata guttata* and *Elaphe schrencki schrencki* as far as its care is concerned.

Below you will find a survey of the data found in the literature I had at my disposal and, of course, my own terrarium experience with these snakes.

DESCRIPTION AND DISTRIBUTION

Elaphe helena is a slender, medium-sized snake. The females average 120-130 cm. The males remain much smaller, measuring about 90 cm (Niehaus and Schulz, 1987). Apart from the size, the sexual difference is clearly visible from the tail. The male's tail shows a distinct bulge behind the cloaca, due to the presence of the hemipenes. The snakes have 217-265 ventral scales and 25-29 dorsal scale rows (Staszko, 1994); the scales are smooth. After shedding, the scales show a spectacular iridescence, producing a 'rainbow'-effect comparable to that of a rainbow boa (*Epicrates cenchria cenchria*), which has just shed. Niehaus and Schulz (1987) distinguish two forms:

1: The eastern form

The light brown body is interrupted at regular intervals by white scale-edges producing the impression of a continuing zig-zag along the back. On the neck there are four narrow black stripes. The first part (about one third) of the snake's body is decorated with a row of black-and-white eye-like blotches. Halfway along the body this pattern fades and continues as two dark brown stripes. A small black line runs from the eye to the corner of the mouth. The eyes are gold-coloured with a round pupil. The ventral surface is cream-coloured. As the snakes grow older, the pattern disappears and the females especially become very dark.

2: The western form

The western form differs from the eastern form in having the eye-like blotches replaced by transverse bands consisting of black-edged yellowish or whitish rings. This pattern also fades. In addition, this form has a whitish to yellow collar which is absent in the eastern form.

So far, only the eastern form is found in terraria. Apart from these two forms, albinos and melanistic (black) specimens of *Elaphe helena* are known.

According to Niehaus and Schultz (1987), the area of distribution of *Elaphe helena* mainly covers the coastline of India and the provinces of Assam, Kashmir and Sikkim. Supposedly, this snake also occurs in Bangladesh, South Pakistan, Nepal and Sri Lanka. According to Staszko (1994) *Elaphe helena* occurs in the whole of India. These snakes are found at altitudes up to 1525 m.

These snakes are found along the edges of forests and rainforests. On warm days the animals supposedly hide in termite hills and under stones. On cold days the snakes can be found in small trees and bushes. In Sri Lanka *Elaphe helena* is often encountered in the vicinity of human settlements. When cornered, *Elaphe helena* flattens its neck vertically, bending it into a 's', and strikes out at its adversary. The same defence behaviour is seen in *Elaphe radiata*. In nature these snakes feed on reptiles, frogs, small rodents and birds and their young. Young snakes supposedly feed on insects and small lizards.

REPRODUCTION, GENERAL

In nature *Elaphe helena* reproduces throughout the year. A clutch is thought to consist of eight eggs at the most. In captivity these snakes lay eggs throughout the year as well. Schmidt (1990) mentions a female producing in the course of three years 11 clutches of 1-5 eggs. In total 35 eggs were laid, but only 11 young snakes hatched. The incubation period was 63-68 days. Another captive-bred female produced 4 clutches; one third of the eggs hatched.

Bout (1989) mentions a 2.5 years old female which laid 7 eggs on 4th of April 1987, which were incubated at a temperature of 28°C. After 70 days only 1 young snake hatched. Schulz (1987) mentions 2 females which produced 61 young in the course of 3 years. The eggs were incubated at a temperature of 28-30°C. The young hatched after 50-60 days. The hatching percentage of these clutches, during these 3 years, was 100%. Staszko (1994) mentions clutches varying from 6-8 eggs which hatched after 60 days.

Finally, H.Vording reports (pers. comm., 1995) that one female *Elaphe helena* starting at the age of 13 months laid 6-10 eggs every two months. The eggs hatched after 60-70 days. A second female laid eggs less frequently, but the eggs had the same incubation period. Between 1993 and February 1995, 50 young hatched in total. Worth mentioning is the fact that the first female laid fertilized eggs even when no copulation had taken place (sperm retention).

As one notes *Elaphe helena* is being bred with varying success. My attempts to breed *Elaphe helena* have been successful to a certain extent.

MY ANIMALS

On 8th of August 1991 I purchased two males of *Elaphe helena*. Male no.1 (M1) was born on October 14, 1989 and male no.2 (M2) was born on May 7, 1991 in Diergaard Blijdorp

(Rotterdam Zoo). The animals measured 50 cm and 30 cm respectively. On November 3, 1991 I bought a female in Germany which was born that year. Male no.1 was housed in a terrarium of 30 x 40 x 50 cm which was partly heated by a heating cable for 24 hours. Kitchen paper was used as a substrate. In addition, an egg-carton was placed in the cage as a hiding place.

The female and M2 were housed separately in small plastic boxes of 20 x 15 x 10 cm. The boxes were provided with a piece of kitchen paper and a quarter of an egg-carton. The advantage of egg-cartons is that during the shedding process a little amount of water can be poured into the holes, which is immediately absorbed. The water will gradually evaporate, providing a humid environment ideal for shedding. The boxes were also provided with small water bowls. The plastic boxes were placed on a heating cable which heated a part of the boxes for 24 hours a day. I normally use this type of housing when rearing young snakes. All animals accepted pinkies right from the beginning. Male 1 also ate 'fuzzies' (young mice, about 2 weeks old). Although the female and M2 ate practically the same amount of mice, the male did not grow as rapidly as the female.

THE TERRARIUM

The animals grew fast. After one year they measured 70 cm (M1), 50 cm (M2) and 100 cm (F) and both sexes were housed separately. The terrarium is 80 cm long, 40 cm deep and 60 cm high and is made of white melamine covered chipboard. The cage bedding consists of a 3 cm thick layer of wood shavings. Heat is provided by a reflector lamp. During the spring I use a 40 Watt bulb, during the summer a 25 Watt bulb. The light is on for 12 hours a day. During very warm summer days (> 30°C) the lighting period is reduced to a few hours. In addition to the reflector bulb, one third of the terrarium is heated by an undertank heating pad for 24 hours a day. The terrarium contains three plastic hiding boxes partly filled with wood shavings. The snakes use the water bowl with a diameter of 15 cm only for drinking.

BEHAVIOUR AND MAINTENANCE

Elaphe helena is active mainly in the morning and the evening. My animals are also active during these periods. The males are somewhat shy compared to the female, which can often be seen, even during the day. At those times she moves through the terrarium for a long time. When I am standing in front of the terrarium, she will even come towards me. This cannot be a sign of recognition, but probably this curiosity is caused by her permanent desire for food.

My snakes eat only live prey. I offer my animals 1 to 2 mice once a week. The female also eats rat pups of a few days old. The size of the mice corresponds with the size of the snake. The male takes mice of 2-3 weeks old, while the female eats adult mice. I offer live mice, which are then caught and constricted by the snakes. The males show a distinct preference for 'piglets' (mice of 1 week old). These 'piglets' are also constricted before being eaten. It is remarkable that when the males are placed with the female, they will begin a fasting period of a few weeks. Only several weeks after they have been separated from the female, they will resume feeding.

Four or five days after their meal the snakes produce their first faeces, which I remove immediately. During the shedding period I spray the terrarium every other day. Because of the increased air humidity the snakes never have any shedding problems. Drinking water



Foto 1: *Elaphe helena*. Vrouw, kopstudie. Female, close-up of the head.
Foto: C. Langeveld.

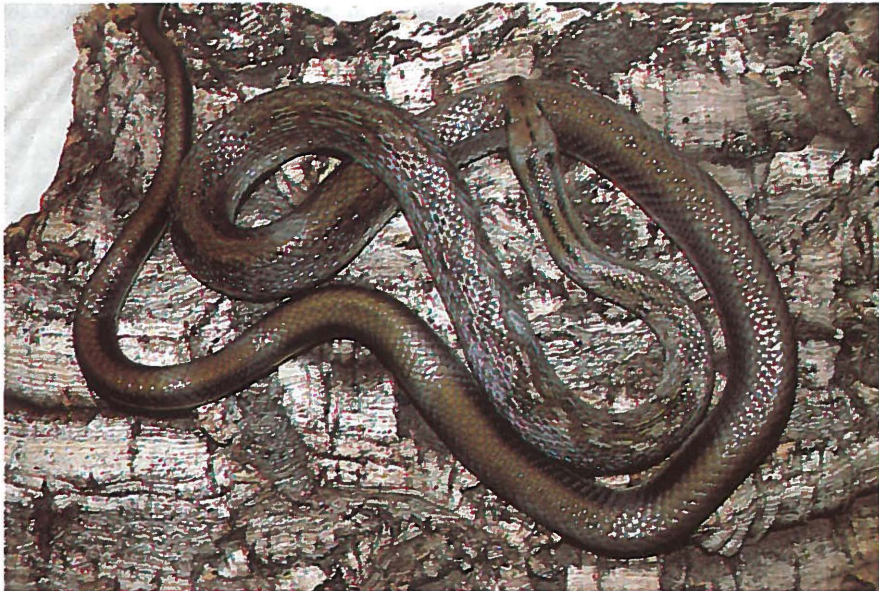


Foto 2: *Elaphe helena*. Man, dorsaal aanzicht. Male, dorsal view.
Foto: C.Langeveld.

is replaced 2 - 3 times a week and the waterbowl is disinfected with halamid-d(r), a chlorine compound much used by farmers to disinfect stables.

HIBERNATION / WINTER REST

According to Staszko (1994) a hibernation is not essential for these snakes, but a somewhat cooler period of about 15°C probably won't be harmful. Considering the area of distribution of these snakes you will find that this area has a tropical climate. India is situated between the 10th and 30th parallel, i.e. at the same latitude as the area from the northern part of Mexico to Panama. Only the northern part of the area of distribution of these snakes can be considered as temperate (Kashmir, Sikkim, Nepal). Therefore, it seems inadvisable to expose the animals to temperatures of 15°C or less over an extended period of time. Personally I think it is wise to prevent a temperature drop below 18°C. Schulz also mentions this temperature as the lower limit. The following incident shows that a hibernation can be fatal.

A keeper of *Elaphe helena* (anonymous account, 1995) overwintered his animals together with other *Elaphe* species 3 months in his cellar at a temperature of 5-10°C. After the *Elaphe helena*'s had been taken out of hibernation they were in a bad condition and showed signs of dehydration. The animals died a few weeks after their 'awakening'.

When it is known that the animals are from Kashmir, Sikkim or Nepal, a hibernation of a few months at low temperatures won't be harmful in my opinion.

BREEDING

At the beginning of 1993 the female was 120 cm in length, M1 was 80 cm and M2 was 60 cm. After the female had shed on January 18 1993, M1 was placed in her cage at 2.00 p.m. In the next few hours I didn't see any copulations, but I did find traces of sperm. In order to liven up things I decided to place M2 with the other two animals at 6.00 p.m. The males reacted violently on each other and they began to shake and crawl over the female. Finally M2 mated with the female in a hiding box at 7.30 p.m.

On January 31 the males were placed with the female again. No copulations were seen this time, but the males did chase the female. Since the males stopped eating, they were not placed with the female again. M2 did not resume feeding until March 15, when he took one 'piglet'.

During the period preceding the shed of the female on February 28, the wood shavings in the plastic hiding box had been moistened. On March 5, 6 days after shedding, the female laid 8 eggs. The eggs were transferred to an incubator immediately after laying. I use moistened wood shavings as a breeding substrate. The temperature in the incubator was around 28°C. The air humidity in the incubator was around 90%. On April 3, 2 out of 8 eggs turned out to be bad.

After 69 days, on May 13, 1993, the 6 remaining eggs hatched. The young shed 11 days after hatching. The young had the same pattern as the parents, only their colour was a little duller. After two sheddings the young had developed a nice colour. On May 25 all young ate pink mice voluntarily. About half of the young bred by H. Vording (pers. comm. 1995) ate pink mice voluntarily; the remaining young had to be force-fed one or more times (sometimes for several months) until they started eating on their own. According to literature young *Elaphe helena* will not always eat voluntarily.

Ulber (1990) gives a good alternative. An 8 weeks old *Elaphe helena* escaped during his vacation. Until then the animal had refused to eat and had been force-fed a couple of times. A friend of his found the animal in the kitchen and put it in a small container. Being a gecko-keeper, he had no experience in keeping snakes. Thinking that the snake had to eat something, he offered it a field-cricket. After one day the cricket had disappeared. After his return Ulber offered 6 adult field-crickets every week, which were eaten willingly by the young snake.

CONTINUATION

Initially I was happy with the above mentioned result. The continuation of this breeding result was, however, rather frustrating. The males were placed with the female on March 21 and 23 respectively and although no copulations were seen, the female shed on April 11 and laid 9 eggs on April 13. Of these 9 eggs 3 looked well, the others were very small. These eggs were also placed in the incubator. After two weeks 'blood vessels' appeared on the eggs, one week later they were decayed and gave off a terrible smell. After the males had been housed with the female they refused food again for several weeks. At that time I didn't know that it was all 'between the ears' or better 'between the scales' (snakes don't have ears). I took the snakes to M. Maas, a vet in Waalwijk, by way of precaution. The snakes were 'clean' and only in the faeces of M1 sperm cells were found.

During that year the males were placed with the female from time to time and some copulations were seen. I offered the female some extra food, that is 3 to 4 mice per week. On June 9 the female laid 9 small eggs, on July 21, 8 small eggs and on August 23, another 8 small eggs. The same happened to these clutches as to the second before. In the hope that the female would stop laying, she was placed in another terrarium and kept 'cool' at 18-23°C. During the months that followed the female didn't lay eggs. In December the female was placed back in her old terrarium. This resulted in an unfertilized clutch on January 3, 1994.

IN CONCLUSION

Elaphe helena is a beautiful snake and easy to keep. Since these snakes are bred on a regular basis nowadays, it is expected that in future this snake will become as popular as *Elaphe guttata* for instance. I hope, however, that my setback with the female won't stop people from keeping this snake. At the moment my animals are housed at Diergaarde Blijdorp, where the males have mated with my female and with the female of the Zoo. Hopefully this change of scenery will have a positive influence on the reproductive cycle of my old female.

LITERATURE

- Bout, R. 1989. Breeding results: *Elaphe helena*. *Litteratura Serpentina* 9: 90-91.
- Niehaus G. and Schulz K.-D. 1987. Die hinterasiatischen Kletternattern der Gattung *Elaphe*, Teil XI: *Elaphe helena*, *Sauria* 9 (4): 3-7.
- Schmidt, D. 1990. Schlangen (Haltung und Vermehrung von Terrarientieren, Spezialisten berichten), J. Neumann-Neudamm GmbH & Co.KG, Melsungen, Duitland.

Staszko, R. and Walls, J.G., 1994. Rat Snakes, A Hobbyist's Guide to *Elaphe* and Kin, TFH Publications, Inc, USA.

Ulber, T., 1990. Beitrag zur Ernährung eines Jungtieres von *Elaphe helena* (Daudin 1803), *Sauria* 12 (2): 17.