

LITERATURE

This column will give information about new literature, publications, books, etc.

Tips concerning new literature are welcome, and should be sent to Ed Prilist, Voorstraat 61, 3512 AK Utrecht, The Netherlands.

Die Fortpflanzung der Pythons *Python regius* und *Liasis mackloti* und der Kletternattern *Elaphe climacophora* und *Elaphe quadrivirgata* im Terrarium; Nikolaj L. Orlov. Herpetofauna (Ludwigsburg), 1982, Vol. 4 (19): 25-30.

The author wants to show the most important ways to raise snakes on the basis of two species of python and two species of *Elaphe*.

The reproduction of *Python regius*.

In May 1977 2 males (about 1.20 m) and one female (about 1.50 m) were kept in 2 terraria (100x60x50 cm), the sexes being kept separately. The temperature was 27-31°C, the relative humidity 80-90%, and the length of the day 14 hours. From May till August the snakes got a sunbath of 40-50 minutes about once in 5 days. From August to October they had one every day during 5 minutes artificial UV light from a distance of 80 cm.

The snakes were inactive during the day and active during the night and thus were fed at night with mice, rats, voles, golden hamsters, and great tits, the vitamin preparation Trifit (A, D2, E) was added.

In August the night temperature was lowered to 22°C for 20 days. On August 20th one of the males was put with the female. Copulations started the same night. In September the second male was added, resulting in rutting fights between the males. During this period

the males did not eat, the female however feeding intensively. She copulated alternately with both males. On October 10th she stopped feeding and became more and more aggressive. As a consequence she was isolated and UV irradiation was stopped. At the beginning of December her hindportion was clearly swollen and in the next two weeks augmented salivation was present. Sloughing took place at the end of December and on January 7th she produced 8 eggs (55-60 x 75-80 mm). They were laid on a spot in the terrarium with a day temperature of 30°C. She sat on the eggs and uncoiled only the front part of her body to drink. The terrarium was prepared for the breeding in the following way: the bottom was covered with a layer (2 cm) of boiled peat, on top of this was a layer (15 cm) of sphagnum. Day temperature was 29-32°C, at night it was 28-29°C. The relative humidity of the air was never under 90% and usually 100%. Moisture was obtained by a water atomizer, occasionally a little iodine or Tripaflavin was added. The body temperature of the female was at daytime 31-32°C, while that of the male under identical circumstances was 27-29°C. On the 53rd day after the laying the body temperature of the female dropped one degree. On the 67th day she became restless and curled herself only around the lower part of the egg pyramid. On the 68th day (15 March 1978 at 13.00 hrs) the first young snake opened the eggshell, on 18 March 1978 the other young appeared and left their eggs. The female was taken out of the terrarium and started feeding immediately. The young had a mean weight of 46 g and a mean length of 42.5 cm. Ten days after hatching they sloughed and started feeding independently.

The reproduction of *Liasis mackloti*.

In June 1980 two males 190 and 200 cm and one female (140 cm) of this species were prepared in the same way as *Python regius*. On September 1st they were put together, whereupon the female copulated with one of the males the first night. There was no rivalry between the males. The males had not eaten since the beginning of August, the female stopped eating in mid-October. The female was placed in a well prepared terrarium, however, she became very restless, moving to and fro, burrowing in the substrate and seeking a way out. On October 17th she was put back with the males, whereupon again copulation took place intensively. Again, the female was isolated. On January 3rd in the morning she produced 17 eggs (55-60 x 45-60 mm). Day temperature in the terrarium was 32-33°C at the hottest spot, 26-27°C at the coolest. At night the temperature was 26-30°C. Relative humidity was 100%.

For the first ten days the female left her eggs regularly for 10-30 minutes, to restart breeding for 2-3 hours. The body temperature of the female was 30½-31°C, the surface temperature of the eggs was 29-30½°C, which decreased to 27°C when the female left them. Because of the restlessness of the female the author decided to incubate the eggs artificially, whereupon the female was taken away and the eggs covered with sphagnum. This was again covered with a polystyrene covering, resulting in a surface temperature of the eggs of 28-30½°C. Every 10 days they were irradiated with UV-light and a iodine solution of low concentration was sprayed in the terrarium. Due to a mistake the temperature once dropped for 10 hours to 23°C.

Between 11 and 19 March 11 young hatched out of 10 eggs (one monozygotic twin). The length of the young was between 46.8 and 50.7 cm, the

weight between 26 and 32.5 g.

3 To 9 days after they hatched they started eating independently.

Reproduction of Elaphe quadrivirgata and Elaphe climacophora.

In November 1978 one pair of *Elaphe quadrivirgata* (male 135 cm, female 125 cm) and 2 pairs of *Elaphe climacophora* (males 140 and 160 cm, females 120 and 130 cm) were prepared for reproduction. *Elaphe climacophora* was fed with rats and mice, *Elaphe quadrivirgata* with frogs (*Rana temporaria* and *Rana arvalis*) and litter-mice. Until December the day temperature was 28-30°C and the night temperature 24-25°C, there was light for 12 hours. The males and the females were kept in separate terraria (120x60 cm each) with a large waterbasin. From December 5th to December 25th the length of the day was reduced to 6 hours and the temperature decreased to 18°C. Till December 30th the temperature was further reduced to 12-13°C and on January 1st the snakes were placed in a hibernation cage. This was a dark space with a temperature of 7-8°C and a relative humidity of 80-86%. They stayed there until February 1st, after which the daylength was slowly increased to 15 hours and the temperature to 29-30°C.

Elaphe climacophora started to eat mice immediately, *Elaphe quadrivirgata* frogs. From March 3rd UV-irradiation was given every 2 days and both sexes were put together. The males of both species had already stopped eating, however only the males of *Elaphe climacophora* showed sexual activity. This species was seen to copulate on March 5th, 6th and 7th, both males with only one of the females. Only on March 20th the *Elaphe quadrivirgata* started copulating. On March 15th 1981 the female of *Elaphe climacophora* produced 4 eggs (62x25-65x27 mm), and on June 2nd 1981 the *Elaphe quadrivirgata*

female produced 8 eggs (45x23-47x26 mm). The eggs were incubated in sphagnum at a temperature of 29-30°C (day) and 27°C (night), and a relative humidity of 95-100%.

The 4 *Elaphe climacophora* eggs hatched on 21 and 22 June 1981 (the young had a length of 26.5-29 cm), those of *Elaphe quadrivirgata* hatched on July 3rd (the young had a length of 22-24.5 cm). The *Elaphe climacophora* young had to be force-fed with littermice during the first 2 months. The *Elaphe quadrivirgata* ate young *Rana temporaria* independently after their first sloughing. During the first 8 days after laying the female of *Elaphe quadrivirgata* showed brooding care, as is as well reported of *Elaphe obsoleta*.

Attractive intergrading of American *Elaphe*; Geoff Chapman. *The Herptile* (1982), Vol. 7 (2): 33.

The author praises the attractiveness of hybridised *Elaphe obsoleta spiloides* and *Elaphe obsoleta rossalleni*. The author obtained six hybrids. One of them is like *Elaphe obsoleta spiloides*, the other five have dark brown spots on their back and sides. Two of them have on the back an orange background fading into beige at their sides. The other three have yellow ground colour on their back changing to beige with lightgrey spots on their sides. The yellow colour runs in two individuals to the snout and the underside of their chin. All have a beige underside. The author himself mentions the resistance some people feel against such hybridisations, but, however, he praises this one.

Assisted feeding of young snakes; Geoff Chapman. *The Herptile* (1982), Vol. 7 (2): 31.

Eating less than necessary to grow properly, occurs regularly in young snakes. They feed often, but just one littermouse instead of 3 or 4, as they easily could take. The author found this solution.

One needs small tongs or tweezers. When the snake is hungry, it is offered a littermouse. As soon as the first one is nearly completely swallowed, the head of a second one is pressed with the tweezers against the hindparts of the first. By using tweezers the snake is less frightened than by hand. At first the snake will try to avert the head of the second mouse, but with patience and quiet movements, it will be accepted. One should use just enough force so the second littermouse is held tightly in the mouth, before withdrawing the tweezers. This method can be applied on adult snakes. However be careful not to overfeed.