

CAPTIVE BREEDING OF BITIS GABONICA RHINOCEROS.

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INTRODUCTION

A pair of *Bitis gabonica rhinoceros* were kept in a terrarium similar to that used for *Bitis arietans* (see Rosi, 1988). The only difference being the absence of sub-stratum heating and the addition of two further glass basins 90x10x5 cm. These basins, one in the male and one in the female partition, are filled with water which, through the use of a special heater, evaporates keeping a good degree of heat and humidity inside the terrarium.

LIGHTING

The terrarium is lit by two 18 Watt Philips TL-D Super 80 Type 94 neon lights (one for each partition) and by a further 120 Watt tubular light Phililinea Philips used with a light regulator which artificially produces the conditions of light from dawn to dusk.

Such an internal lighting is meant to exploit in the best way possible the natural lighting especially in spring and summer.

In winter as the external lighting diminishes it is necessary to program the lighting with a graduate intensity from dawn to dusk to avoid a sudden changing from light to dark inside the terrarium. This particular lighting allows a minimum quantity of 10 hours light a day in winter to 15 hours light in summer (when the natural daylight filter-



Foto 1. *Bitis gabonica rhinoceros*, paring / copu-
Tation. Foto: Roberto Rosi.



Foto 2. *Bitis gabonica rhinoceros*, geboorte van
een jong / birth of a young. Foto: Roberto Rosi.

ing through the window is added).

CLIMATE

The daily temperature inside the terrarium is kept from October to May between 23⁰C and 26⁰C with the night temperature between 19⁰C and 22⁰C.

The relative humidity varies between 75% to 85%.

From June to September the daily temperature is kept between 25⁰C and 30⁰C with the night temperature between 22⁰C and 25⁰C. The humidity is between 75% and 90%.

The evaporation of water inside the terrarium is

Table 1. Temperature and humidity in the terrarium in 1986.

| Month | Temperature °C | | Heating water (hours) | Evaporation frequency (per month) |
|-----------|----------------|-------|-----------------------|-----------------------------------|
| | day | night | | |
| January | 23-25 | 19-20 | 10 | 2 |
| February | 23-25 | 19-20 | 10 | 3 |
| March | 23-26 | 19-20 | 8 | 5 |
| April | 23-26 | 19-20 | 6 | 5 |
| May | 24-26 | 20-21 | 4 | 4 |
| June | 25-28 | 22-23 | 2 | 4 |
| July | 26-30 | 23-25 | - | 6 |
| August | 26-30 | 23-25 | - | 6 |
| September | 25-28 | 22-24 | - | 5 |
| October | 24-26 | 21-22 | 6 | 4 |
| November | 23-26 | 20-21 | 10 | 3 |
| December | 23-25 | 19-20 | 10 | 2 |



Foto 3. *Bitis gabonica rhinoceros*, jong nog in het eivlies / young in the yolk sac. Foto: Roberto Rosi.



Foto 4. *Bitis gabonica rhinoceros*, pasgeboren jong / newborn young. Foto: Roberto Rosi.

completed at least twice a month in winter and six times a month in summer.

MATING

During the estrous period both the male and the female refuse food. This period seems to be longer for the male than for the female, as the male started feeding again toward the middle of June after having stopped in April.

During this period the female behaves calmly moving around the terrarium showing no aggressiveness while the male, to the contrary, was evidently restless - he looked nervous and seemed to be wanting to get out of the terrarium pushing his muzzle against the glass.

One particular attitude of the male was to rise from the floor with the fore part of his body to about 40 cm keeping this position and smelling the air with his tongue.

On 16 April 1987 I decided to remove the partition-wall so that the male could come into contact with the female.

After this the ritual courting started: the male would approach the female and smell her with his tongue, while the female would keep still.

After some insistence from the male the female would rise from the floor with the fore part of her body then throw herself apart and then forward falling heavily on the ground.

The male did the same immediately after the female and this happened repeatedly with some intervals to rest. On the same day they were put together (16 April 1987) the two animals made their first copulation; the second copulation occurred on 22 April: it lasted 3 hours and 20 minutes. (The temperature inside the terrarium was 23-24°C, the relative humidity was 80%).

After this the animals were again separated.

The female remained calmly inside her lair coming out after one month and started moving nervously around the terrarium.

The male was very restless during the whole of the month of May.

On 27 May 1987 I decided to put them together again so that a third copulation could occur. No particular behaviour was observed during the coupling, apart from a slight dragging on both sides. The male would rise his tail every so often and a certain compression in the hemipenis area probably coinciding with the emission of the sperm, could be observed. This last coupling lasted three hours. The temperature was 24-25°C and the humidity was 80%.

The female ate during the pregnancy.

BIRTH

The female sloughed on 26 October 1987 and on 31 October 1987, after a 198 days pregnancy, 49 young (25 males and 24 females) were born.

No unfertile eggs were laid. Only one young, clearly incompletely developed, was born dead; a second one died of asphyxia during the delivery. The length of the young varied between 29.5 and 31.5 cm, their weight varied between 34 and 40 g. All of them first sloughed within their first hour of life.

After one week they started feeding regularly on small mice of about 12 g.

At the moment of copulation the male *Bitis* weighed 4.37 kg and was 150 cm long; the female weighed 4.62 kg and was 140 cm long. She was fresh caught and at the moment she arrived at my terrarium on 24 March 1985 she weighed 750 g and was 70 cm long. Her physical condition was not good then, in fact she had difficulties in sloughing.

Table 2. Prey eaten by the female in the gestation period.

| | | |
|-------------------|---------------|---------------|
| 29 April 1987 | 1 cavia 750 g | |
| 16 May 1987 | | refused cavia |
| 16 June 1987 | | refused cavia |
| 20 June 1987 | | refused cavia |
| 24 June 1987 | 1 cavia 700 g | |
| 18 July 1987 | 1 cavia 610 g | |
| 7 August 1987 | 1 cavia 650 g | |
| 21 August 1987 | | refused cavia |
| 17 September 1987 | 1 cavia 430 g | |
| 29 September 1987 | | refused cavia |

REFERENCES

- Pezzano, V., 1986. Reproduction of *Bitis gabonica rhinoceros* (Schlegel, 1855) in captivity. *Litteratura Serpantium*, Vol. 6 (2): 56-65 / Dutch Edition: 58-67.
- Rosi, Roberto, 1988. The breeding in captivity of the Puff adder, *Bitis arietans* (Merrem, 1820). *Litteratura Serpantium*, Vol. 8 (3): 123-133 / Dutch Edition: 127-138.