

THE BRAZILIAN RAINBOW BOA, A BEAUTIFUL TERRARIUM DWELLER

(*Epicrates cenchria cenchria*, Linnaeus, 1758)



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■ INTRODUCTION

The rainbow, a beautiful natural phenomenon bordering on the line between rain and sunshine. The snake I would like to describe in this article somewhat resembles this natural phenomenon. On one hand this snake has a beautiful colour, the skin being wonderfully iridescent and the species is easy to keep. On the other hand, this snake is shy and very aggressive. In this article I want to discuss the Brazilian rainbow boa, *Epicrates cenchria cenchria*. With the help of some literature that was available to me and my terrarium experience I would like to give a general picture of this snake and specifically go into more detail about the care and breeding of this beautiful snake.

■ SUBSPECIES AND DISTRIBUTION

Within the genus *Epicrates*, seven species have been described. Rainbow boas have a wide distribution area in South America. Therefore, several subspecies have been recognised. Abuys (1982) reports nine subspecies of *Epicrates cenchria cenchria* without naming them. Mehrtens (1987) also describes nine subspecies:

- *Epicrates cenchria cenchria*
Distribution: south Venezuela, Guyana, Surinam and the Amazon Basin
- *Epicrates cenchria maurus*
Distribution: from Costa Rica to the north of South America, Trinidad and Tobago. Abuys (1989) reports a finding in Surinam
- *Epicrates cenchria alvaresi*
Distribution: Argentina
- *Epicrates cenchria crassus*
Distribution: Brazil and Paraguay
- *Epicrates cenchria barbouri*
Distribution: Marajo, an island off the coast of Brazil
- *Epicrates cenchria gaigei*
Distribution: Bolivia and Peru
- *Epicrates cenchria polylepis*
- *Epicrates cenchria hygrophilus*
- *Epicrates cenchria assisi*
Distribution: Brazil

Mattison (1992) mentions eight subspecies and Trutnau (1979) reports on ten subspecies, but neither name any of the subspecies. The subspecies *Epicrates cenchria maurus* and *Epicrates cenchria alvaresi* are often described in other literature. Within the snake keeping world only three subspecies mentioned are known to me as terrarium animals and these are being bred regularly.

■ EPICRATES CENCHRIA CENCHRIA

The Brazilian rainbow boa is one of the most spectacularly coloured snakes in the world of snake keeping. The animals vary in colour from orange to deep red, sometimes with silver-grey sides. The animals have "peacock-like" spots on their sides. The skin of the snake is highly iridescent, especially when they have just sloughed. Then, a "rainbow-like" hue is visible on the skin. It won't surprise anyone that this snakes owes its name to this iridescent skin.

The animals reach a maximum length of about 2 m, and they have 43 to 51 dorsal scales and 256-271 ventral scales (Abuys, 1982). The young of these snakes have the same pattern as the parent animals, but they are lighter in colour. The animals attain their definite colour in a one to two year period.

■ HABITAT AND HABITS

Rainbow boas are shy and aggressive, terrestrial snakes, which can sometimes be found on low hanging branches to avoid moist hiding places (Abuys, 1982). Trutnau (1979) nevertheless states that these snakes can be found in trees as well as on the ground. The snakes are mainly active in the evening. Trutnau (1979) mentions rocky areas, forests and plantations as their habitat. Furthermore, Abuys (1982) and Mehrtens (1987) add coastal woodlands and savannas adjacent to forests. The food of *Epicrates cenchria cenchria* exists mainly of birds, fowl and their chicks and small mammals which are killed through strangulation (Trutnau, 1979; Abuys, 1982).

■ REPRODUCTION IN GENERAL

Epicrates cenchria cenchria is ovoviviparous. From the literature that I have at my disposal, nothing can be found about mating, gestation and birth in the wild. Reproduction in captivity has been widely written about. Van der Pols (1987) mentions that his females were placed with the male in January for the duration of one month. He did not observe any mating but he found traces of sperm. From April on one of the two females did not eat any more and gave birth to two live and four dead young on 18 August. Van der Pols did not use any stimuli to activate his animals sexually. In his article he refers to Brunner (1987), who states that the sexual activity of *Epicrates cenchria cenchria* can be brought on by lowering the temperature in the terrarium. Relative humidity can be reduced as well to get the desired result. Separating the two sexes and bringing them together again after the temperature and relative humidity have been lowered is also said to give the desired result. Lowering the temperature in winter is also subscribed by Mattison (1988), Schmidt (1990), Trutnau (1979) and Ross (1990). Mattison (1988) mentions a decrease in temperature from 25-30°C to 20°C for the duration of at least six weeks. Mattison (1988 and 1990) gives the winter period as the time of year in which the animals mate. Ross (1990) is more specific. He states a period from mid-May to mid-July, with June as the most intense. He also states the period from mid-November to mid-February, in which the most active period is from the end of December to the beginning of January. The gestation period of these snakes is five months according to Trutnau. Mattison (1988) gives 180-210 days for the gestation period. Ross (1990) gives four to eight months for the gestation period of *Epicrates*

cenchria cenchria. According to Ross the period in which the young are born is from between mid-May until the beginning of December, with a peak from the end of July to the beginning of August. Mattison (1988) reports that the clutches may comprise of one to thirty young. He states a mean average of 9.7 young in thirty clutches. The chances on dead young would depend on the age of the animals. Young snakes often produce more dead young than older animals. The snakes reach sexual maturity when they are 1.5 m long. This length can be reached in three to four years. Ross (1990) gives 20 years for males as the ultimate age for reproduction and 7.5 years! for females. The age given for females must be a printing mistake, taking in mind the fact that the animals are sexually mature after only 4 years. It is possible Ross meant 17.5 years.

The snakes are able to produce a litter each year: The young snakes are born in a membrane, which they break open immediately after birth. The young snakes slough about ten days after birth. Van der Pols (1987) states in his article that it would appear from literature (Groves, 1980) and from a personal communication (Zielin) that some females assist the young that do not break out of the membrane independently. This would be achieved by pushing the head against the membrane, or even take the "eggs" in its mouth.

■ MY ANIMALS

I obtained three wild-caught specimens of *Epicrates cenchria cenchria* from a friend on 8 June 1993 on a breeding loan. They were two adult males and one adult female. The snakes were from Surinam and they had been in my friend's possession for five years.

Male 1 is about 1.6 m long and orange in colour, and male 2 is 1.7 m long and it has a red colour. Both specimens have the "peacock-like" eyes on their sides. The

female is about 1.8 m long and has an orange back. The flanks are "silver"-grey and show some black spots. The males are a bit more slender than the female.

After a quarantine period of three months, in which the animals were treated for flagellates and nematodes, the animals were housed separately in three terrariums. The terrariums are 90 cm long, 40 cm wide and 60 cm high, and made of plastified blockboard. The terrariums are partially heated by means of heating cables for 24 hours a day. Initially, a 40 Watt spotlight was turned on in the terrarium for 4 hours a day. Because the animals never "sunned" themselves, these lights are turned on for only 2 hours a day during the spring and fall.

The terrariums are furnished with two plastic shoe boxes filled with a layer of wood shavings several cms thick. One of the boxes is placed on the floor heating, the other is in the "cold" part of the terrarium. Furthermore, there is also a water bowl in the terrarium. I use newspaper as a substrate, in that way the terrarium can easily be kept clean.

■ BEHAVIOUR AND CARE

The animals behave in a reclusive manner in my terrarium. The snakes lie in the shoe boxes for 90% of the time. It is remarkable that they prefer the "cold" box, where it is between 18 and 27°C, depending on the time of year. The temperature in the "warm" box varies from 24°C (winter nights) to 40°C (at the height of summer). As I pointed out earlier, the snakes are very aggressive and it can be noted that the female is much more aggressive than the males. When I take the animals out of the terrarium for inspection after sloughing or to clean the terrarium, I use leather gloves. I also try to grab the animals directly behind their heads in order to avoid a bite. *Epicrates cenchria cenchria* has



Photo: C.M. Langeveld

Dorsal view of male 2.

long teeth with which they can even bite through the lined gloves. I spray the terrarium once a week during a sloughing cycle. The animals slough three to four times a year and they usually shed their skin in two or three parts.

I feed my snakes once a week. The female eats small and adult rats. The males eat adult mice. The males get mice because they have trouble digesting the rats. The rats only get digested partially. I found undigested parts in the faeces of the males. At first I thought it was caused by an infection or infestation of parasites. During the quarantine period and the following year, the fae-



Photo: C.M. Langeveld

Head study of male 1.

ces were inspected several times and it was clear that the animals were free of parasites and the faeces showed no concentrations of bacteria. Mice are digested well by the males, even if three or four mice were offered one after the other. The female eats throughout the year, except during pregnancy. A fasting period can be observed with the males, namely during the mating season.



Photo: C.M. Langeveld

Gravid female

■ THE BREEDING ATTEMPT IN 1994

In September 1993, after the quarantine period, the snakes were placed in the terraria, and I started to spray the terraria lightly every three days. I also sprayed the animals directly on their skin. I stopped spraying at the beginning of October. Because the terrariums are placed in the attic it cooled down significantly in the terrariums during this period. By the middle of October I put the males with the females for 24 hours every other week. From that moment the males stopped eating. At



Photo: C. M. Langeveld

Young from the first litter.

first the males did not seem interested in the female, as I concluded from the passive behaviour of the snakes. But the males did lay with the female in the "cold" shoebox. I was not able to observe what happened at night, though. On Saturday 20 November 1993 I finally observed a mating between male I and the female. After this mating the males were put with the female until the beginning of January 1994, but it did not lead to any observed matings. From 7 December on the female refused food. In the first week of January 1994 a swelling of the middle part of her body became visible. In the following week the body of the female swelled by half of its original width. The week after that the body shrank to almost its normal size. I recognized the swelling as the period of ovulation. Ross (1990) also mentions a periodical swelling and states it is caused by the ovulation. After the ovulation the males were placed with the female one more time but again no matings were observed. Because there can be no fertilization before ovulation, one has to count from this moment. The males resumed eating in January, while the female started a fasting period which would last for the duration of the gestation period. The female sloughed two weeks after the ovulation. After she shed

her skin she preferred the "warm" shoebox to the "cold" shoebox. From 22 March 1994 I saw the animal lying on one side regularly, with her body turned.

During the night of May 12 to 13 May, 1994, 22 live young were born. Depending on the actual time of fertilization the gestation period was between 120 and 140 days. The young snakes were put in a plastic terrarium, separate from their mother, where they sloughed between May 24 and 26. The animals were sexed after the slough, and it seemed I had 8 males and 14 females. "Popping" is a way of determining the sex whereby by applying pressure on the tail the hemipenes of the snake is erected. In the case of a male the hemipenes come out, in case of a female they obviously do not. However this way of determining the sex does not give a 100% certainty. The young ate 5 to 10 days old pinky mice within one week after sloughing. From this litter I kept two females which I housed separately. The little snakes were placed in a little plastic box measuring 20x15x10 cm (lxwxh), which is partly placed on a heating cable. Raising

Offspring '96 after first slough.



Photo: C. M. Langeveld

the young poses no problems. While writing this article (summer 1996) both animals are about 1.3 m long and they eat adult mice and young rats.

■ THE BREEDING ATTEMPT IN 1995

After she had given birth the body of the female shrank considerably and the traces of her pregnancy were clearly visible. One week after she had given birth the female took rats again. From that moment I gave the female one adult rat or two half-grown rats every week to get her back into her usual condition. After six weeks she looked well-fed again.

From September of that year I started spraying the terrariums again after which the males were placed with the female again in October. Again no matings could be observed at first and the males were passive again. My experiences with snakes of the genus *Elaphe* are that two males with one female often result in extra sexual arousal of the males (*Elaphe helena* and *Elaphe schrenckii*) to true combats (*Elaphe longissima*), as well as the knowledge that the male boas of the genus *Corallus* fight each other during the mating season, I decided to put both males at the same time with the female in November 1994. To my amazement this had the desired effect. Half an hour after they had been placed in the terrarium they started "fighting" each other. The battle that was being fought can be compared to the combats of vipers (e.g. *Vipera berus*) and *Elaphe longissima*. The males raised the upper parts of their bodies and they tried to push each other to the floor of the terrarium with their necks. In doing so the animals twist around each other. The fights are so violent that in 1994 the clamp that kept the windows of the terrarium closed was bent and the windows were open at one time. The animals nevertheless were so entangled in their

activities they did not attempt to escape. In 1995 a window was even pushed out of the rail and partially shattered on the floor. The female did not like these fights at all and retreated into a shoe box. The fights I observed lasted 12 to 20 hours, whereby the defeated male hid itself in a shoebox and the dominant male (male 2) mated with the female for the next couple of hours. In the last week of December ovulation was visible again in the female and followed by a slough. The female fasted until it gave birth on 10 May 1995 (120-140 days of gestation). This time it was clearly a smaller litter that consisted of five unfertilized eggs, one dead young and nine live young. You could hardly tell that the female had given birth.

Like the previous year the female was again well fed by me, after which I took the same action in the months of September to December 1995. Again there were fierce combats between the males, which were won by male 1.

■ CONCLUSION

In the beginning of January the ovulation took place again with the female, after which it gave birth on May 17 to one dead and fifteen live young (120-140 days after ovulation). This time the female had given birth in the shoe box. The dead young was found in a large puddle of amniotic fluid. The membrane of the snake was torn. Possibly the snake had drowned in the amniotic fluid.

Considering the data from literature and my own observations of these animals I am of the opinion that *Epicrates cenchria cenchria* is easy to keep and to breed. Because the snakes are not very active and quite aggressive I think they are not very suited for a novice snake keeper.

■ LITERATURE

- *Abuys, A., 1982. De slangen van Suriname, Deel II: de families Aniliidae en Boidae. Litteratura Serpentina 2:112-133.*
- *Abuys, A., 1989. Additional notes to the article "The snakes of Suriname, part II: the families Aniliidae en Boidae". Litteratura Serpentina 9: 126-128.*
- *Deursen, van, K., 1978. Surinaamse slangen in kleur. C. Kersten & Co., N.V. Suriname.*
- *Mattison, C., 1988. Keeping and Breeding Snakes. Blandford Press, London.*
- *Mattison, C., 1992. Slangen, soorten, herkomst, voeding, verzorging. Zuid Boekproducties, Lisse.*
- *Mattison, C., 1995. The Encyclopedia of Snakes. Blandford Press, London*
- *Mehrtens, J.M., 1987. Living Snakes of the World. Sterling Publishing Co., Inc. New York.*
- *Pol, van der, J., 1987. Unexpected breeding of *Epicrates cenchria cenchria*. Litteratura Serpentina 7: 168-174*
- *Ross, R.A., 1990. The reproductive Husbandry of Pythons and Boas. The Institute for Herpetological Research, Stanford, California.*
- *Schmidt, D., 1990. Schlangen. (Haltung und Vermehrung von Terrarientieren, Spezialisten berichten). J. Neumann-Neudamm GmbH&Co. KG, Melsungen.*
- *Trutnau, L., 1981. Schlangen 1, Ungiftige Schlangen. Eugen Ulmer GmbH&Co., Stuttgart.*

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