

KEEPING AND BREEDING OF THE EASTERN RINGNECKED SNAKE



DIADOPHIS PUNCTATUS PUNCTATUS

Nathalie Sie

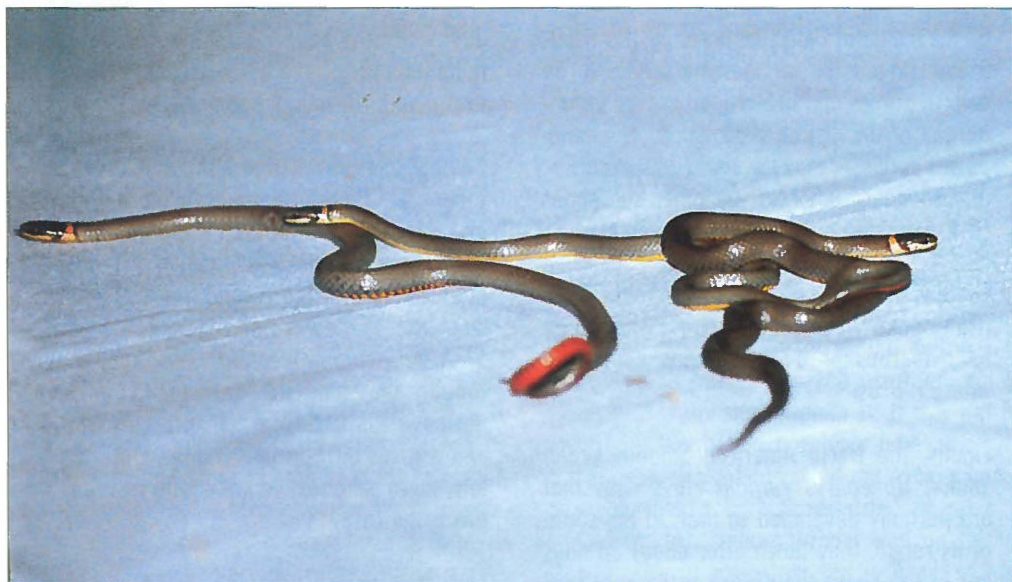
INTRODUCTION

Twelve years ago I started keeping snakes. Like most people, I started with fish-eating garter-snakes. It was not long until I saw some lovely small grey snakes in a shop. They had a small orange-red ring around their neck and their belly was black speckled orange. I was told they fed on worms and fish so I decided to buy two and housed them together with my gartersnakes. Their cage was decorated with some branches, hiding places and a drinking-bowl. There was no other

substrate. With a bit of beginners luck, the animals went well, until I fed them some worms I dug out from under a rabbit-run. Half a day later they were both dead from food poisoning. Still, from that day on I feel attracted to these little snakes.

DIADOPHIS PUNCTATUS PUNCTATUS

Diadophis punctatus punctatus originates in North America. It is a ground dweller that can grow up to one foot. Its back is coloured brown, dark-grey or black and its belly red or orange with black speckles. Behind the head is an orange ring. In captivity these snakes rarely get excited or bite. When handled they curl



Adult Diadophis punctatus punctatus. Photo by Nathalie Sie

up their tail to show their orange side, or they smear you with their faeces.

ANOTHER SUBSPECIES

Some years later I heard of a shop that sold these kind of snakes. I was still looking for another set of eastern ringnecked snakes, so I went to see for myself. By this time I already knew the risks of buying wild-caught snakes, for they were bound to have all kinds of parasites.

The snakes in the shop didn't look exactly like the ones I used to have. The size was the same, but their colour was different. The back was almost black and their belly red, without speckles. The seller was quite sure they were eastern ringnecked snakes and they ate worms and

crickets. Although there was some doubt in my mind, I decided to buy four good looking ones. I had heard about the species and only the subspecies *Diadophis punctatus punctatus* was known to do well in captivity. I suspected these snakes to be another subspecies.

At home I placed the snakes in a cage with a thick layer of earth and plenty of hiding places. Within two weeks all four gave birth to a total of 36 young. They were ovo-viviparous. Then I knew they were another subspecies for *Diadophis punctatus punctatus* lays eggs.

The young all got their own little plastic cage. I divided them into four climatic zones. Cool (room temperature) and moist, cool and dry, warm and moist, warm and dry. They were all

REMARK

On the matter of *Diadophis* breeding, it is THEORETICALLY possible for the same species to be both oviparous and ovo-viviparous. For instance, one of the African skaapstekers, *Psammophylax variabilis*, may lay eggs (subspecies *P. v. multisquamus*) whereas the other subspecies (*P. v. variabilis*) gives birth to live young.

There is a similar situation in the South American snake *Helicops angulatus*, which may be oviparous or ovo-viviparous depending where it lives.

Finally, the North American Smooth Green Snake, *Opheodrys vernalis* lays eggs that are partially developed so that, in the south of its range, they hatch after about 30 days but in the north they hatch after only four

days and, it is believed, females may retain them until they have hatched completely and thus give birth to live young.

Having said this, I don't think it is so for *Diadophis*. There is nothing in the literature and this species is too well known for this to have been overlooked. Instead, it seems more likely that the second batch of snakes were not *Diadophis* but red-bellied snakes, *Storeria occipitomaculata*. This species is roughly the same size and colour but does not have the neckrings. It also eats worms and it gives birth to live young. Unfortunately, there is no way to know with certainty if this is the case.

Chris Mattison





offered various kinds of food; worms, pieces of worms, crickets, oatworms, snails, fish (codfish as well as guppies) and catfood. But in the end none of them ever ate and they all died.

I decided that, if I was ever going to take care of these snakes again, I'd better be more careful about checking the subspecies.

Then finally, in the late fall of 1996, I found the exact subspecies, *Diadophis punctatus punctatus*, in a petshop in Scheveningen (the Netherlands). They looked fairly well and I decided to buy six of them.

HOUSING

The animals were housed in a cage measuring 40 x 30 x 30 cm. For hiding, a thick layer of soil was provided, and on top of that sphagnum moss and pieces of bark. This was due to literature that stated that these animals like to be on top of the soil but like to hide under leaves etc.

The cage was partly placed on top of an under-cage heat-pad and a drinking-bowl was provided. The average temperature was 27°C. The top of the cage was secured with a frame of mosquito-net.

The snakes were housed with no additional species (I had learned my lesson!). They enthusiastically used the soil and hiding places to dig burrows and hide. Usually they could be found under a piece of bark or in the soil itself. They made real subway systems in their cage. Sometimes I could see one above ground. It would always be very active and flickering its tongue when it was out of hiding. This snake

does not need moist surroundings, but out of personal observation I know it is mandatory for them to have a dry spot, as they could develop blisters. I almost never soaked the soil, just kept it from desiccation.

FOOD

While these snakes normally feed on small amphibians such as the watersalamander, or other snakes, in captivity they do well on worms. In their cage there was always a number of worms of various sizes. These worms were supplemented with calcium and Carmix.

Because of their way of living it was hard to tell whether they ate or not, but it seemed logical to me that they did not eat during the winter of '96-'97. When by spring '97 some of them still did not seem to eat and three of them got thin, I got anxious. I had tried fish, tadpoles, little frogs, worms and parts of it, snails and crickets. By April I found one snake dead. Due to its looks it apparently died of starvation. It was then that I decided I was going to do something about it, even though I knew it would not be easy to force-feed such small snakes. For all I knew they could all be fasting.

Because there was nothing to be found on prepared food/nutrition or requirements of food, I created my own force-feeding delicacy. This was made out of egg-yolk, catfood, calcium Gistocal water and vitamin D. It was put in a syringe which had a rubber tube on its top. For four weeks I force-fed my snakes once or twice weekly. Each time I tried to get about 7ml in. Two snakes thrived well on this diet and grew in size. One died in April, so now I had four snakes left.



Eggs of *Diadophis punctatus punctatus*. Photo by Nathalie Sie

At the end of July, I happened to see one of them eat a worm. I was very pleased with this for now I knew for sure they ate worms.

Unfortunately another one died in August. By the beginning of fall '97 another one still looked slim. The other two looked well-fed.

HIBERNATION

I decided to hibernate my snakes, so I turned the heat-pad off on November 15. On December 6 the animals were placed in the attic at a temperature of 8.5-16°C. By February 8, they were put back in place and the heat-pad was turned on again one week later.

EGGS

In case of a possible pregnancy, I prepared a small box filled with moist sphagnum. In the lid I created an opening for the snake to pass through. On April 21, 1998, I discovered four large eggs in the box. They measured around 1.5 x 0.8 cm and didn't look as I would have expected. Their colour was spotted, shiny and dark. I doubted they would ever hatch but tried it anyway.

After some time in the incubator, in moist vermiculite, at a temperature of 26°C and a humidity of 95% the eggs turned out to be partly transparent. You could see the young snakes curled up.





Young of Diadophis punctatus punctatus 3,5 months old Photo byNathalie Sie

On May 28, after 35 days, the eggs hatched and by June 2, all the snakes had left their egg.

YOUNG

The young snakes were housed individually in small plastic boxes. For two reasons I 'free-fed' them in their parents cage very soon. Firstly, the small boxes were not as escape-proof as they looked. One young already escaped and was never recovered. Secondly, I could not get the proper food for these small snakes. They needed very small worms, which were plentiful in their parents' cage due to breeding, but were very hard to collect manually. On June 17, I discovered one young dead by unknown cause.

On July 19, returning from my vacation, I discovered a second dead young. This one drowned in its drinking-bowl. Now I only had one young left, but this one was doing very well. It ate well and was growing even better.

THE GREAT ESCAPE

Then the adult male also escaped....., and was found again a couple of days later on a sticky-trap designed to capture crickets. I decided my animals needed a new cage. A glass cage measuring 50 x 50 x 30 cm was built. It had a glass lid that fitted exactly. This cage should now be escape-proof. There was only one problem: ventilation. But there were only two small sna-

kes left that didn't use so much air and I'd open the cage regularly. The anti-escape cage didn't prove to be as good as I thought; in November the adult female vanished and two weeks later I couldn't find the last animal either.

CONCLUSION

I draw several conclusions. First, *Diadophis punctatus punctatus* can only be purchased as wild-caught, due to few successful breeding attempts. Second, it is possible to successfully breed *Diadophis punctatus punctatus* provided one has healthy individuals. The young seem to

be vulnerable; two out of four young died. One drowned in just 1 cm of water and another one died for no apparent reason. And finally, these snakes proved to be true escape-artists.

LITERATURE

Mattison, Chris. 1991. *A-Z of Snake Keeping*. London

Wijk, B. van. 1985. *Breeding Results Diadophis punctatus*. *Litteratura Serpentina* volume 5; 35.

Translated by *H. Bakker*
Corrections by *C Mattison*.

