
CARE AND REPEATED BREEDING OF THE GREEN RATSLAKE
(*GONYOSOMA OXYCEPHALA*)

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INTRODUCTION

Gonyosoma oxycephala is a beautiful, emerald green snake with a reddish brown tail (red tailed ratsnake). Often there is a yellow ring between the tail and the body. The tongue is blue with dark grey tips with which the snake tongue-flicks in a remarkable way. These snakes are slender and with a tapering head and large eyes. The scalation is: 23 dorsal scale rows, 236-262 ventrals, and 130-149 subcaudals. The belly is green on young specimens, light green or white on adults. There are 22 or 23 long teeth, as needed for the catching of bird prey (Van Riel, 1978). Merthens (1987) shows a strange colour variation: an animal completely coloured in the reddish brown colour of the tail.

The sex can be determined, as in most colubrids, by looking at the form of the tail base: broader in males tapering only after 7 or more subcaudals. Females can grow much larger than males, as is the case in my own animals. Heijnen (1988) writes that sometimes it is stated that males would have a lighter coloured tail than females. This is not the case with my snakes.

In older literature this species is placed in the genus *Elaphe* (e.g. Grzimek, 1973). It differs from *Elaphe* for instance, in the rudimentary lung,



Foto 1. *Gonyosoma oxycephala*, man / male. Foto: F. Mullenders.



Foto 2. *Gonyosoma oxycephala*, vrouw / female. Foto: G. Pijnappel.

which in *Gonyosoma* is relatively well developed, being about 10 cm long (Van Riel, 1978). The genus has only one species, divided in 2 subspecies. Rat-snakes which look a lot like *Gonyosoma oxycephala* and are also called 'green ratsnake', are *Elaphe triaspis* from Mexico and the very rare *Elaphe prasina* from South East Asia.

DISTRIBUTION

This snake is found in Thailand, Cambodia, Malaysia, Singapore, Burma, The Philippines, the Nicobar and Andaman Islands, the eastern Himalaya and a number of Indonesian islands, including Java and Borneo. They live in tropical forests, along rivers and in saltish water woods (Van Riel, 1978).

THE ANIMALS

In September 1986 I bought a healthy looking male, about 140 cm long. It did not suffer from the various diseases freshly imported snakes often have. During the first week the animal drank some water in which a little ronidazole had been dissolved, and I doubt if this has had any effect at all.

In January 1987 I had the luck to be able to buy two adult females, which were born in August 1984 in Germany from wild caught parents. I have never had any problems with these snakes. The male now weighs 480 grams and is 170 cm long. The females weigh 1370 (female 1) and 1260 grams (female 2), and are resp. 230 and 225 cm long.

THE VIVARIUM

The male was first kept alone in a cage of 80x40x40 cm (lhb) and the females together in a cage of 90x45x120 cm. After the second copulation (see BREEDING) the male remained with the females. The vivarium is decorated with a branch and some glass tanks attached in the corners to the back wall. On the floor there is a water basin (40 x 40 x 15 cm). The floor is covered with sawdust. The snakes almost always hang over the branch or over the empty glass tanks. The temperature at the top of the cage is about 27°C, on the floor it is much cooler. There is a permanent heat source by means of a infrared bulb (Elstein) of 60 Watt. During the day there is light from a 18 Watt fluorescent lamp. The light is automatically switched on at sunrise, and off at sundown by a light sensitive resistance unit.

FOOD

Live mice were offered as food items to the wild caught male two days after its arrival, but they were refused. A young rat was bitten but not caught. After a couple of days this was tried again, again without result. After a week a live finch was offered that was immediately eaten. Other types of finches were eaten too. Hereafter, live birds were offered as food items, especially Japanese meows and finches, but also larger species like canaries and sparrows. Dead day old chickens were however refused. Sometimes halfgrown mice were offered that were at times (accidentally?) accepted. After some months a dead mouse was put in the cage and eaten after some hours. Hereafter first only dead mice were accepted, but later on live too. At the moment the male feeds very well on mice (up to 8 items in

a feeding). Sometimes he gets birds too. Chickens are still refused.

The captive bred females are now mainly fed with mice, chickens and rats. Digestion is fast: within three to four days. The large females eat very much: 6-8 mice or chickens a week, or 2-3 halfgrown rats. My specimens are not over-particular in their choice of food: up to now they have been eating desert rats, halfgrown cotton rats, voles, hamsters, dwarf hamsters, 'many nipples' mice, spiny mice, young tree quails and dwarf quails.

DRINKING

Green rat snakes are fierce drinkers. When the cage is sprinkled, they suck the drops and the flowing water. I spray the animals with a high pressure syringe, and when they start to drink, I keep the nozzle right in front of their mouth so that they can drink a lot. If I don't sprinkle, they start to drink out of the water basin after a couple of days. It is easy to mix vitamins, calcium etc. in the water before spraying. I give phosphatic and lactic calcium in this way, especially to the gravid females. Every two weeks I mix 10 drops of the multivitamin supplement 'Vinka' (manufactured by Beaphar) with the water.

BREEDING

At the beginning of September the snakes were prepared for mating as described by Van Riel (1978). For this snake no light/temperature cycle is needed (as for most species of *Elaphe*), only an increase of air moisture. For this aim, an aquarium heater was put in the water basin of the female's cage, so



Foto 3. Eieren van / Eggs of *Gonyosoma oxycephala*.
Foto: G. Pijnappel.



Foto 4. *Gonyosoma oxycephala*, juv. Foto: G. Pijn-
appel.

that the water started to evaporate. Apart from that, I sprayed more often (1 to 3 times a day). In the male's cage the water basin was placed right under the lamp, and here too I often sprayed. After three weeks the male was put in the female's cage, but nothing happened. Female 1 shed on the 2nd of November and the male was put in her cage the same evening. Mating started immediately. After 10 minutes there was a copulation which lasted for hours. During the following days I tried to let the male court the other female, but she didn't respond. After a month the heating was taken out of the water and spraying stopped. Female 1 started to eat less from the third week after the copulation, and after five weeks she stopped feeding completely. On January 2nd she shed, and on January 14th she laid 8 eggs. Two boxes, filled with moist moss, had been put in the cage as a possible nest, but she laid the eggs in a empty glass tank high in the cage. She was coiled around the eggs, like for instance *Chrysopelea ornata* does (Steehouder, 1985).

The eggs were put in a little bucket filled with moist peat moss and placed in a glass tank filled with water. The bucket rested on a stone just above the water. The temperature of the water was about 31°C, the temperature between the eggs was about 1 degree lower.

After 87 days, on April 11th, the first young hatched, and 14 days later the last one did. One egg, contained a dead, fully grown snake. The seven hatchlings all measured about 45 cm long and weighed between 18 and 23 grams, one died after four days. The other ones shed after 6-8 days. They refused to take pinkies, but if these were put head first in their mouths, they were swallowed. Soon they started to eat one week old pinkies or two pinkies after eachother. After four months they started to

eat young mice all by themselves.
 On March 20th the male was put with the females again, which resulted in another copulation with female 1. There had been no period of high air moisture this time. After this copulation the male was kept with the females continuously. Female 2 started to lay eggs later on (see the table). The second clutch was incubated in a strainer and a wet towel, the last clutches in moist saw dust. These later clutches were incubated at lower temperatures (27°C). As for the rest (food refusal, protective behaviour, nesting) there was no difference from the first clutch.

TABLE : Breeding results 1988

spec. number	mating date	shed ding day	eggs date	num- ber	hatching date	live/ dead
1	20/11	5/1	14/1	8	11/4	7:1
1	20/3	1/5	14/5	8	22/8	4:4
2	?	7/7	20/7	6	14/11	6:0
1	?	18/8	22/8*	2	unfert.	
1	?	18/8	31/8	5	11/12	5:0
2	?	26/9	4/10	8 (+ 2 unfert.)		

*Probably these eggs were laid prematurely. The animal was stressed because of having been moved and put in a sack for a couple of hours. These eggs were not layed in a cluster in the box, but were found loose on the ground in the vivarium. After the

hatching of the other eggs, these two were opened and found to be unfertilized.

Until now, all hatchlings were sold within a couple of weeks.

The sex ratio of the living animals from the first clutch was 2 males to 4 females (not entirely certain); of the second clutch 3 males to 1 female; of the third clutch 1 male to 5 females; of the fourth clutch 3 males to 2 females.

CONCLUSION

Gonyosoma oxycephala is certainly not any more difficult to keep and breed than most *Elaphe*. With healthy specimens it appears to be possible to obtain more than one clutch of eggs after a single mating stimulus.

It is still a problem that there is not a 100% live hatching of the eggs. Maybe it would be better to change the incubation method. It seems possible that moist saw dust is the best choice of incubating substratum: all the eggs incubated in saw dust hatched. With some breeders of this species (Van den Bossche, Broer, Noordman a.o.) the females laid complete clutches of unfertilized eggs, whilst the same specimens also laid fertilized eggs. Fortunately, this has not happened with my snakes, though there were two unfertile eggs in the last clutch. It is however possible that this is caused by the fact that there were (too) many clutches within a short period.

If *Gonyosoma* has ectoparasites (ticks, lice), it is better not to use VAPONA, as this causes breathing difficulties, during which the animals

lie in the water basin. NEGUUVON seems a better choice. Heijnen (1988) at least does not mention any negative side effects.

Whenever a beginning of mouth rot (stomatitis) is observed, fast action is required. Hingley (1984) mentions a case of a female dying within three days after the first symptoms. At dissection, the whole mouth appeared to be infected.

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