

CAPTIVE PROPAGATION OF THE GREEN ANACONDA *EUNECTES MURINUS MURINUS* (LINNAEUS)

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INTRODUCTION

The green anaconda, *Eunectes murinus murinus* (abbreviated *murinus* in this paper) has been bred by both zoos and private collectors. It is the purpose of this article to describe the breeding activities of a captive pair of *murinus*, as well as to record the data collected on the resulting offspring.

ACQUISITION AND MAINTENANCE OF ADULTS

The male was acquired on 19 June 1979 as a juvenile (total length) and was a gift from Bill Maynard. At the time of the first breeding this male was not quite six years old, had a total length of 2.6 m and weighed 15 kg. The female was obtained through a breeding loan with the Cincinnati Zoo on 12 May 1983. At this time her age was not known, but she had a total length of 2.8 m and weighed 21 kg.

The adult pair were maintained in a large wooden cage measuring 2.5 x 1.2 x 1.2 m with a sliding glass front. Heat was provided by a 250 Watt infra-red heat lamp wired to the ceiling at one end of the cage. A temperature gradient was thus maintained with the warm end of the cage at 29-32 °C and the cooler end at 24°C. Cage lighting was provided by 4' fluorescent light that was plugged into a timer. Diurnal cycles could thereby be established according to the season, with the daylight hours varying from 9-14 hours.

COURTSHIP AND BREEDING

Although the adult *murinus* had been maintained together since June 1983 (the female was quarantined for two months) the first breeding activity was not observed until the evening of 30 April 1985 when the pair was found in copulation. Breeding activity was observed an additional nine times over the next two months. The observed activities and the dates they occurred are listed below in table 1.

The following is a brief description of the activities listed above in table 1: Tail wrapping is a term used to describe the males' attempt to line up the cloacal openings



Foto 1: *Eunectes murinus gigas*, Reptielen Zoo Iguana,
Vlissingen, (NL).
Foto: Fons Sleijpen.

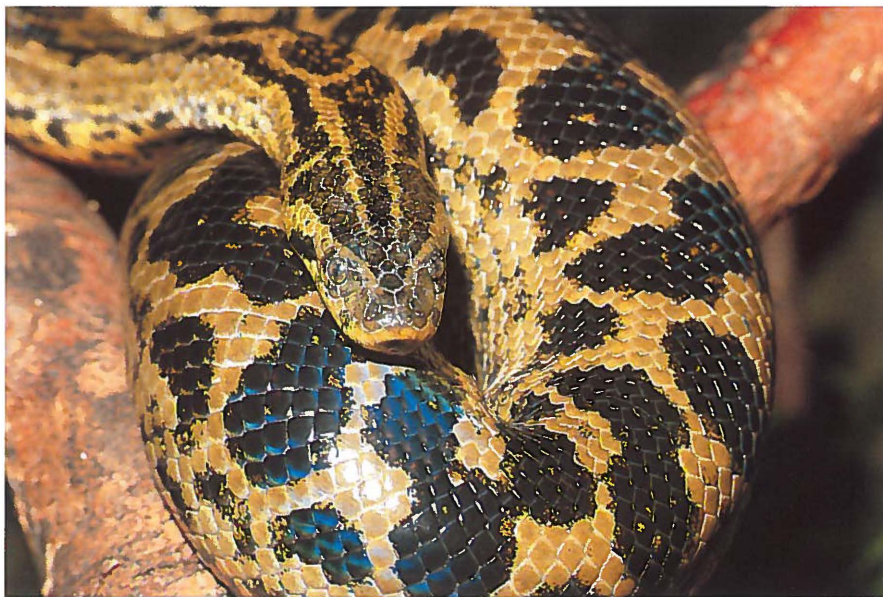


Foto 2: *Eunectes notaeus*, Reptielen Zoo Iguana,
Vlissingen, (NL).
Foto: Fons Sleipen

by wrapping his tail around the female's and raising her tail to expose the coacal opening. This also helps to secure the male's hold on the female during copulation. Spurring refers to the male's attempt to stimulate the female by use of his spurs. The male *murinus* would lay his tail across the posterior fourth of the female's body and begin to 'walk' his spurs in a back and forth motion along her back. This activity was observed to last up to at least 30 minutes. The remainder of the courtship activities consisted of rapid tongue flicking by the male over the female's body, and a minimal amount of spasmodic jerking movements so commonly seen in other snakes.

No breeding activity was observed after 24 June, even though the pair was kept together.

Date	Activity
300485	copulation
080585	courtship tail wrapping spurring
240585	copulation
280585	courtship spurring copulation
310585	courtship tail wrapping spurring
060685	copulation
080685	copulation
140685	spurring copulation
160685	tail wrapping copulation
240685	courtship tail wrapping spurring copulation

Table 1: Breeding activity of an adult pair of *Eunectes murinus murinus*.

POST-BREEDING MAINTENANCE OF FEMALE

During the period of time between the first breeding and parturition the female fed a total of nine times, an average of once every 25.3 days. This is compared to her normal feeding schedule of once every 14-21 days. The last feeding was only 13 days prior to parturition. During this same period of time the female shed three times, the last shed occurring 14 days before parturition.

PARTURITION

Parturition occurred on 24 December 1985 some time between 5:30 am and 4:30 pm with a resulting brood of 16 young and two slugs (infertile eggs). The gestation period can only be estimated to have been between 183-238 days, because it is not known which, if any, of the observed breedings actually fertilized the female. It is even possible that the pair had bred prior to 30 April, in which case the gestation period could have exceeded 238 days.

At the time of their discovery, most of the neonates had already broken free of their fetal membrane and were actively crawling around the cage. The female showed no interest in eating the two slugs or the fetal membranes, a behavior that has been reported for *Eunectes murinus* by Neill & Allen (1962), and for *Eunectes notaeus* by Townson (1978).

DATA COLLECTED ON THE YOUNG

Approximately one hour after their birth, the young anacondas as well as the two slugs were rinsed off and weighed on a triple beam balance, to the nearest .1 g. On the following day additional data was collected including total length, tail length, number of body and tail blotches, and sex (by probing). All of the data collected on these juveniles is listed below in Table 2.

The approximate total length measurements are an average of three consecutive measurements that were within 1 centimeter of each other. The tail length measurements were only taken once.

The tail length ratio is calculated by dividing the tail length by the total length and multiplying by 100. The resulting percent figure was rounded off to the nearest .1 percent. These values were calculated prior to sex determination (by probing) and an attempt was made to sex the young anacondas using these ratios. With females having proportionately shorter tails than males, the female tail length ratios would obviously be greater. As can be seen from table 2, all of the young with tail length ratios of 13.7 or below proved to be males. With the exception of one snake (84-L) all of those with ratios above 13.7 were females. Even though the total length measurements are not exact, as explained above, the margin for error among them is the same. Therefore, the resulting tail length ratios would still be proportionately correct.

MAINTENANCE OF YOUNG

Prior to the collection of the data listed in table 1, the young anacondas were assigned inventory numbers (85-A, 85-B, 85-C,...). The number "85" indicates the year they were born. Each young *murinus* was then placed in a plastic container measuring

No.	G	TL	SL	SL ratio	LV	SV	Sexe
85-A	233.0	80.0	11.0	13.8	52	12	V
85-B	233.6	78.0	10.0	12.8	64	15	M
85-C	244.3	80.0	10.5	13.1	52	15	M
85-D	206.6	75.3	10.0	13.3	55	16	M
85-E	223.8	79.0	10.0	12.7	57	13	M
85-F	205.0	76.8	10.3	13.4	55	13	M
85-G	224.2	76.2	09.9	13.0	59	12	M
85-H	224.1	76.3	11.1	14.5	54	16	V
85-I	254.9	81.0	11.1	13.7	53	13	V
85-J	225.5	79.6	10.6	13.3	55	15	M
85-K	227.5	77.0	11.2	14.5	60	16	V
85-L	237.5	79.8	11.1	13.9	53	17	M
85-M	231.4	77.8	10.5	13.5	52	16	M
85-N	209.1	77.3	10.6	13.7	53	16	V
85-O	223.7	76.9	10.3	13.4	60	15	M
85-P	238.6	78.7	10.7	13.6	57	14	M
mean	227.7	78.1	10.6	-	55.7	14.6	-

Table 2: Data collected on newborn *Eunectes murinus murinus*.

Note: The two slugs mentioned above had weights of 118.6 and 104.0 g.

40x27x17 cm. Newspaper was used as a substrate and a water bowl, large enough for the young to soak in, was placed in each container. Heat tapes were positioned underneath the containers so that one-half of each container was heated to a temperature of 29-30°C. The temperature on the other half was approximately 25°C.

Shedding occurred much later than was expected, as all but one of the young shed their skin by 27 February 1986, with the range being between 36-65 days after birth. The last juvenile to shed (85-A) did so on 21 March 1986., 87 days after its birth.

With the exception of number 85-A, all of the young were offered food after their first shed. Both rat and mice fuzzies were offered, but there was a marked preference for the former. Individual shedding and feeding records are listed below in Table 3.

DISPOSITION OF THE YOUNG

In accordance with the breeding loan from the Cincinnati Zoo, eight of the juvenile anacondas were given to the zoo after they had fed at least once. Four of the remaining eight babies will be maintained in my collection to study their growth and development.

As of 8 May, the four juveniles in my collection had each shed a second time and had eaten 5-6 times since their first feeding. They are currently eating frozen-thawed small rats at approximately ten day intervals. Their growth (length and weight) is being measured once a month.

Nr	First shed	First feeding	Prey	Nr	First shed	First feeding	Prey
85-A	210386	290186	1 r	85-I	100286	120386	2 m
85-B	060286	060386	1 r	85-J	030286	060386	1 r
85-C	290186	290186	1 r	85-K	030286	060386	1 r
85-D	110286	130386	1 m	85-L	060286	060386	1 r
85-E	270286	060386	1 r	85-M	020286	060386	2 m
85-F	270286	060386	1 r	85-N	310186	130286	1 r
85-G	020286	060386	1 r	85-O	060286	130386	1 r
85-H	080286	060386	1 r	85-P	040286	060386	2 m

Table 3: Dates of first shedding and feeding, and first food accepted for juvenile *Eunectes murinus murinus* (r: rat fuzzy, m: mouse fuzzy)

MAINTENANCE OF ADULT FEMALE AFTER PARTURITION

The adult female *murinus* resumed feeding thirteen days after parturition and is currently on her normal feeding schedule. She has been left with the male and breeding activity has already been observed.

REFERENCES

- Neill, W.T., 1962. Parturient anaconda, *Eunectes gigas* Latreille, eating own abortive eggs and foetal membranes. Quarterly Journal of the Florida Academy of Sciences 25: 73-75.
- Townson, S., 1985. The captive reproduction and growth of the yellow anaconda (*Eunectes notaeus*). In: Reptiles, Breeding, Behavior and Veterinary Aspects. Eds. Townson, S. & K. Lawrence. Pub. British herpetological Society, London.