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# CAPTIVE

# BREEDING



Green Tree Python

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# *Captive Reintroduction of the Green Tree Python*

*(Chondropython tigris)*

by

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On New Year's Day 1980, while standing bleary-eyed at the coffee machine and hoping for some caffeine reinforcement, I heard a voice echoing through the halls of the Oklahoma City Zoo Herpetarium: "Eric, come here. There's something I think you ought to see." Dreading some new disease disaster (we had just experienced a massive outbreak of paramyxovirus in our viperid collection), I reluctantly headed in the direction of the voice. My hangover guaranteed that I was most definitely *not* in the mood for more dead snakes.

I turned a corner to find my friend and colleague, David Grow, standing in front of the green tree python exhibit with a grin on his mug that could only be politely described as manure-eating. Considering the time of day (7:30 a.m.), the previous night's revels, and all the problems of the previous year, my first impression was that the man had finally gone over the edge. I asked him what was up and he only



Above: A green tree python (*Chondropython viridis*) hatching.

Photo by: Paul Freed

pointed at something in the exhibit. This tended to confirm my first impression.

To humor him while I considered my next move, I went to the exhibit and looked in the direction of the pointing finger. I was stunned to see my largest and oldest female *Chondropython* placidly deposit a well-formed egg directly into her water bowl from her perch about four feet above. There were a couple of other eggs next to the bowl. I didn't even notice the near-boiling coffee that I was pouring down my leg.

I proceeded to spend the next two hours playing midwife, standing beneath the snake and catching each egg as it was laid, checking my watch, and taking notes. Such was my introduction to the frustrating world of Chondro breeding.

I say frustrating in that it has been my experience that this snake is one of the most unpredictable when it comes to breeding and each step in the process can take unexpected turns. The reason for my surprise at the above-mentioned event was that *it was not supposed to happen*, at least not then. We had expected eggs from this snake about two months earlier, due to what appeared to us to be her obvious gravidity (off feed, swollen mid-section and lower body, irritability, etc.). When the swelling disappeared in mid-November, we figured that she had resorbed the eggs and that we had somehow screwed up. Well, I thought that *I* had screwed up.

I have had considerable more experience with Chondro breeding since that day and have learned a great deal

more, but I maintain that breeding the green tree python is still one of the herpetoculturist's greatest challenges. Let me take you through my rather skewed perspective on this species' reproduction.

The standard formula for getting Chondros to breed is wet-dry cycling and separation-reintroduction. That is, raise humidity levels to 100 percent (by raining, bottle misting, electronic misters, or whatever you want to do to get the moisture levels up) and introduce your females to your males after at least a two-week separation period. Although at one time a lot of folks tried to time this period to what approximated the monsoon season in New Guinea (August-September), I have seen Chondros breed at any time of the year and lay eggs at any time of the year.

It may be that they have a

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discrete breeding season in the wild (many equatorial, tropical snakes breed during the rainy season) but it doesn't seem to be a significant factor in captivity, particularly with long-term captives or captive-bred individuals. However, individual animals, especially females, may have discrete ovulatory cycles that the culturist must determine for the most effective breeding programs. Determining these individual cycles involves a lot of experimentation and tedious trial runs with the above formula. That's your first dose of frustration.

Getting Chondros to breed is not particularly hard, although it can be tedious, as noted. Getting eggs, especially fertile ones, is much more difficult. Remember how we thought that the original animal was gravid and that she had apparently resorbed her eggs? Oh, I know, everyone has heard a story about how such and such's snake was packed to the gills with eggs and then she got 1) sick, 2) upset, and 3) had a bad scale day or what have you and just up and absorbed those eggs. It is physically impossible for any snake to resorb fully shelled

eggs. They can resorb unshelled, unfertilized ova but that's it, and even that is a rare occurrence.

What we had probably observed was the snake ovulating, which accounted for the mid-body swelling and her going off feed. However, this is not a given with Chondros. I have witnessed a number of gravid Chondros that continued to feed throughout their latent period, others that showed no signs of swelling, and others that showed a range of such signs at different levels of obviousness. The rule of thumb with gravid Chondros is that there is no rule of thumb. There's your second dose of frustration.

It is not uncommon for Chondros to lay completely infertile clutches of slugs or clutches with a majority of slugs. Why this is so is not well understood, but it probably has something to do with the timing of breeding, a factor in any captive reptile breeding. Breed-

ing too early or too late in the ovulatory cycle can dramatically affect the fertility and egg quality of a clutch.

Again, it is my experience that Chondros tend to be a little more sensitive than other snakes in this regard. That is why it is so important to determine the ovulatory cycle of your particular animals and try to breed at the peak of ovulation, which may be only a two or three day period.

Okay, you've gotten lucky (maybe) and have a clutch of apparently fertile Chondro eggs. What do you do next? Personally, I pray. I pray that the female has a well-developed maternal instinct and will do what pythons do in the wild. That is, she will coil around the clutch, start shivering, and be her own incubator and 39 to 76 days later I will see little yellow or red heads poking out of the clutch. Sometimes this happens.

Actually, the best Chondro breeding programs (such as



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those at the National Zoo and Tulsa Zoo) have about 100 percent maternal incubation and nearly 100 percent hatch rates for fertile eggs when mom does the work. That is obviously the route to go. To do so means that you will have to construct some sort of egg-laying/incubation box for the female. Birdhouses with an opening large enough for the female to enter will work or you can construct your own boxes. A box with a plexiglass top that can be covered is nice in that you can check the progress of the incubating female without too much disturbance. Line the bottom of the box with a fairly dry material such as long fiber sphagnum moss. Chondro eggs are notoriously sensitive to too much moisture, so dry is good to start.

If your animals are like the ones I've dealt with over the years, though, after a short period mom will decide that she had had enough of this maternal incubation and leave the clutch. You now have no choice but to try to incubate the eggs artificially and I am here to tell you that such incubation is a real crapshoot. That is, if you expect to get a goodly number of babies. Sometimes it works. Many times it doesn't.

As noted earlier, in my experience, Chondro eggs are quite sensitive to excess levels of moisture. Dick Ross (Ross and Marzec, 1990), on the other hand, maintains that high levels of humidity are necessary for successful incubation of this species. Now, I have all the respect in the world for Dick's abilities as a python breeder, but I disagree with his assertion. I recommend that you

use a substrate to moisture ratio of no less than one-and-a-half to one (fine-grained vermiculite). Remember my previous article on incubation technique and Steve Hammack's results with drier substrates for snake incubation (Rundquist, 1993). I really think that this is the route to go and Chondros are a classic example for me.

Another important factor

is temperature. Dick Ross recommends temperatures of 86°-90°F for green tree pythons and, again, I disagree with him (Trust me, Dick. I really do agree with you on your other work). I have had my best results when incubating at 80°-83°F.

A final important incubation factor (and here I finally

*See green tree python, page 20*

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Above: Green tree pythons (*Chondropython viridis*) hatch yellow, red, or brown. They all eventually take on adult colors of green or blue.

*Green tree python, from page 11*

agree with Ross) is air circulation. That is, the eggs must be exposed to fresh air for a certain period during incubation. I usually have started airing my eggs in the latter half or third of projected incubation for about 30 minutes a day. The eggs will collapse to a certain extent, but I learned long ago that collapsing Chondro eggs doesn't mean much as far as being used as a criterion to judge egg health. Good eggs collapse, bad eggs collapse. Good eggsturn colors, bad eggs turn colors. Good eggs leak, bad eggs leak. Actually, leakage may be an indicator that

your substrate is too moist.

Okay, I will assume that you have survived the rigors of artificial incubation and you actually have live baby Chondros in your possession. Lucky you. Here comes your

third course of frustration: getting them to eat. As neonates in the wild, Chondros are apparently frog and lizard specialists. Specifically, they really like to eat small skinks, not your basic standard food item for juvenile snakes. If you have access to such food, by all means use it. It could save you a lot of grief down the road. Anoles are also acceptable.

Remember, though, that you want your animals to eventually eat mice, so it is a good idea to start with pinkies right from the start. You may get lucky and have youngsters that can't get enough of them. Personal experience tells me that you are probably going to have to try a number of different strategies to induce your babies to eat mice.

I recommend that you not try to feed your neonates for a least 10 days after they hatch. This allows them time to shed and to settle into their new surroundings. It also gives you time to start planning your feeding strategy or strategies. These strategies can include teasing with a food item, slap feeding (tapping the side of the snake's head with a food item), scenting, pinching (pinching the snake's tail lightly with for-



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ceps while presenting a possible food item), braining (presenting a dead pinkie whose skull has been slit open and the brains partially extruded), assist feeding, tube feeding, and as a last resort, force feeding. I have used all of these techniques and in combination with each other. If you are persistent, they will eventually work.

I highly recommend that you obtain a pinkie pump prior to your eggs hatching. This device considerably eases the stress of force feeding. Make sure that the syringe nozzle will go at least a quarter of the

way down the length of the snake's body. Shorter nozzles leave food too high in the gullet and the snake may inhale pinkie puree, which will most assuredly do the snake no good.

**A NOTE:** Be sure to house your youngsters separately. Baby Chondros have been known to eat each other.

In summary, breeding the green tree python is still a great challenge for a breeder and a definite accomplishment if you are successful. In fact, I consider it one of the benchmarks to prove one's ability and savvy in the world of herpetoculture. Just remember, though, that Murphy (as in "what can go wrong will go wrong") is always lurking about if you attempt to enter the mad world of *Chondropython* breeding.

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### Literature Cited

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Rundquist, E. M. 1993. Reptile egg incubation techniques. *Captive Breeding* 1(2): 14-15, 18-19, 30.



Above: A green tree Python (*Chondropython viridis*) red hatching.

Photo by: Jim Bridges