AN UNSUCCESSFUL BREEDING RECORD FOR THE WESTERN AUSTRALIAN CARPET PYTHON, *MORELIA SPILOTA IMBRICATA.*

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At 1800hrs on 2 November, 1984 I observed a recently collected male *Morelia spilota imbricata* crawling over a 1.5m long-term captive female, loosely draped in the fork of a branch within the enclosure. The male positioned himself in similar loose formation with parts of his body upon the female and parts laying beside her. Although their heads were some distance apart their tails and posterior parts of their bodies were touching. Periodically the male would draw the hind part of his body forward in contact with the female's and then move it back again. The cloacal spur closest to the female was held out from his body and it was with this he appeared to be stroking her.

When again the pair were inspected it was evident that they were 'knotted'. They had separated by by 2120hrs after being joined for more than 50 minutes, however union was again observed at 1000hrs on 4 November and 1200hrs on 5 November.

On 21 January, 1985, 80 days after the first observed mating, the female was found coiled around 14 eggs. Although she had not fed in the period from mating to egglaying, she had been in captivity for 10 years and was quite obese when compared to individuals of similar length. The eggs, measuring 51-55mm × 42-45mm and adhering together in a single cluster, were removed for artificial incubation. Careful to retain the same orientation the eggcluster was placed in a 6 litre icecream container and almost covered in dampened vermiculite. Cling-wrap was pulled tight over the container and the lid, with a 100mm × 100mm hole in the centre for observation, placed back on. This was placed in a foam poly-styrene esky I had modified into an incubator with the aid of electric-blanket resistance wire and a thermostat set at 28°C.

On 26 March, after 63 days incubation, one of the eggs at the top of the cluster was seen to be slit. As hatching had commenced I removed most of the vermiculite and exposed several hard, brown, dried eggs at the bottom of the cluster. However, in addition to the slit egg, there were 6 eggs that appeared OK. By 29 March all 7 'good' eggs had lost fluid and were shrinking so I opened them, to find 7 dead neonates in green amniotic fluid.

Green amniotic fluid is suggestive of embryonic stress. However, the cause of the stress in this case is not clear. Chris Banks (pers. comm.) advised me that he has experienced poor results with fine-grained vermiculite as an incubation medium with large eggs. The vermiculite used in this case was fine-grained with the largest particles being 2.5mm across. Possibly, such a fine-grained medium could have caused the lower eggs to starve for oxygen but this could have little influence on those at the top of the cluster which was partly exposed. The same would be the case concerning moisture: if this was too high the eggs only partly buried at the top should have been little affected. Maybe the embryos' oxygen requirements were reduced by moisture over the egg-shell, this being most critical as they approached full-term and required more oxygen. Another variable that may have been responsible for embryonic death is the incubation temperature. The thermostat used is primitive, a room air-conditioner unit with a wide temperature differential: when set on 28°C it cuts out at 32°C and does not cut in until the temperature drops to 24°C. However I have used this incubator with considerable success in hatching the eggs of scincids and agamids. I tend to believe that in this instance too much moisture was the problem, possibly compounded by the fine-grained vermiculite.

When I consider the field deposition sites I have uncovered I wonder why there is a need for such moist incubation environments within the laboratory. In the wild many eggs are laid in and upon dry sand in open areas exposed to the sun. I have a record of removing a clutch of *Leiolopisma trilineatum* eggs from the spike-hole of a railway sleeper. None of the eggs were in contact with the substrate which was dry greyish sand. The eggs of *Gehyra, Heteronotia* and *Phyllodactylus* spp. can regularly be hatched just by placing them on dry sand. My first successful attempt at incubating the eggs of *Pogona minor* entailed placing them on dry sand in a jar with a small amount of green lawn clippings covering them. The lid was placed on the jar but I had punched several holes in this to allow air to enter. the Australian deserts support many oviparous lizards and snakes. The eggs of such species would rarely be exposed to the amount of moisture that most reptile eggs are incubated in under captive conditions.

The problem of egg desiccation in an artificial environment may be influenced by handling. Often I have removed recently laid reptile eggs from the wild, placing them with the soil they were in for a short time while transporting them home. More than once these eggs showed signs of desiccation within hours of moving them. However, if egg-desiccation is triggered by handling then how is this overcome by pythons which during incubation may move away from the eggs to bask returning afterwards to continue incubation (Dahm, 1985)?

My future egg-hatching attempts are going to include a sample from each clutch taken immediately they are laid, and still damp from the female, and placed in dry sand.

REFERENCE

Dahm, R. 1985. Observations on a brooding Carpet Python. *RKA Newsletter* 10: 10.