Successful captive breeding of the Olive Python (*Liasis olivaceus*)

After having kept Olive Pythons for many years, private herpetologist **Peter Moran** relates his breeding successes with this species.

Photos: The Author

I have kept two pairs of Olive Pythons in my private collection for up to 12 years and between 1984 and 1987 they have produced four clutches of eggs.

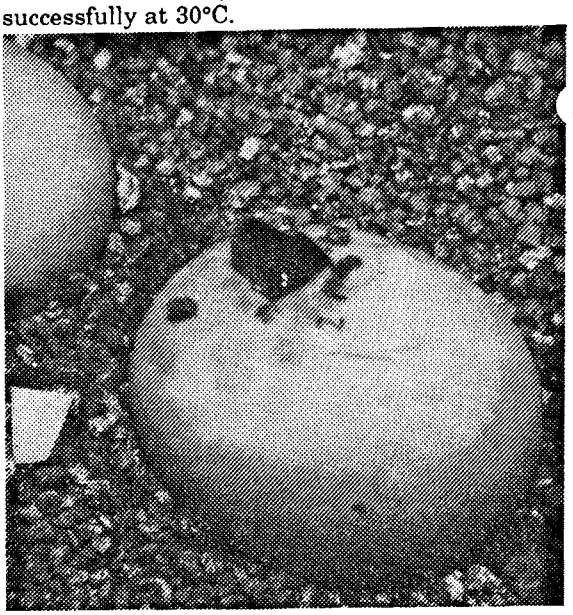
The two females are approximately 2.5 m long and the two males are 2 m and 2.75 m respectively. I obtained female no. 1 in 1976, which has subsequently produced three clutches of eggs and the remaining three specimens were obtained in 1984.

During early 1984, male no. 1 had been separated and then introduced, in May, to the three other specimens. Upon introduction, both males became aggressive towards each other and then male no. 1 copulated with the largest, and possibly oldest, female no. 1.

The four specimens were housed together in a glass-fronted, wooden enclosure measuring 2.75 X 1.5 m X 1 m, with 150 watt overhead heatlamps wired to a thermostat set on approximately 29°C. Mating began in May, as stated above, and continued through to September, with both males mating both females. The most intense and lengthy periods of mating occurred in early July, when the outside temperatures frequently fell to -7°C over two weeks, and the thermostat had been lowered to 23°C in the enclosure with a floor temperature of 20°C. Both females refused food after May and did not feed until October/November 1984. Female no. 1 deposited 19 eggs on 20/10/84, which were all accidentally lost due to overheating. When opened, all contained small embryos. Female no. 2 refused to lay and reabsorbed eggs in November/December 1984.

The four specimens were then sent to Mr. Ray Fields in 1985 and both females produced successful cluches in 1986. Both pairs were housed in enclosures measuring 1.2 X 0.6 X 0.6 m and again, both females were crossed with both males. The only artificial heating given was for two hours in the mornings when the temperature was very low. Thus, normal day/night cycles were experienced by the snakes, along with temperatures varying between 20°C at night and 26°C during the day.

Positive matings were observed from early June through September 1986, with two clutches of 16 eggs, each being deposited on 17/10/86 and 10/10/86. Of these, 26 neonates were hatched successfully at 30°C.



The four adult specimens were subsequently returned to my care in January, 1987. Both females were housed together but the males were separated. The temperature was slowly lowered in mid April from 32°C to 18°C on the floor of the enclosures for six weeks prior to mating.

Both males had been introduced to each other and intense aggression had been observed. On 31/5/87 female no. 1 sloughed and was introduced to male no. 2, whereupon mating was observed almost immediately and continued for at least 10 hours. The female was then removed on 3/6/87 and female no. 2 was placed with the same male. Mating began at 2.30 p.m. and was still going on at 5.30 p.m. the same day. On 16/6/87 it appeared that both female's abdomens were becoming slightly distended. Female no. 1 refused all food but female no. 2 continued to feed. Female no. 2 was not mated with male no. 1.

On 20/7/87 female no. 1 looked very distended and her behaviour had changed. She was now very shy and stayed in the hidebox nearly all the time. On 17/8/87 she was observed laying belly-up and her eggs appeared to be enlarged and to have moved down towards the cloaca. She was observed once, on 16/8/87, laying belly-up on top of the hidebox, directly under a 100 watt globe 10 cm above.

On 4/9/87 the same female was extremely active and quickly came out of the hidebox and enclosure when the door was opened. Moist towels were placed in the hidebox but she refused to enter it. The damp towels were removed and replaced with dry newspaper. She then entered the hidebox and the next morning began laying her eggs, with the last egg being deposited at 9.35 a.m. She consumed a rat five minutes after laying. Female no. 2 refused to lay and reabsorbed her eggs.

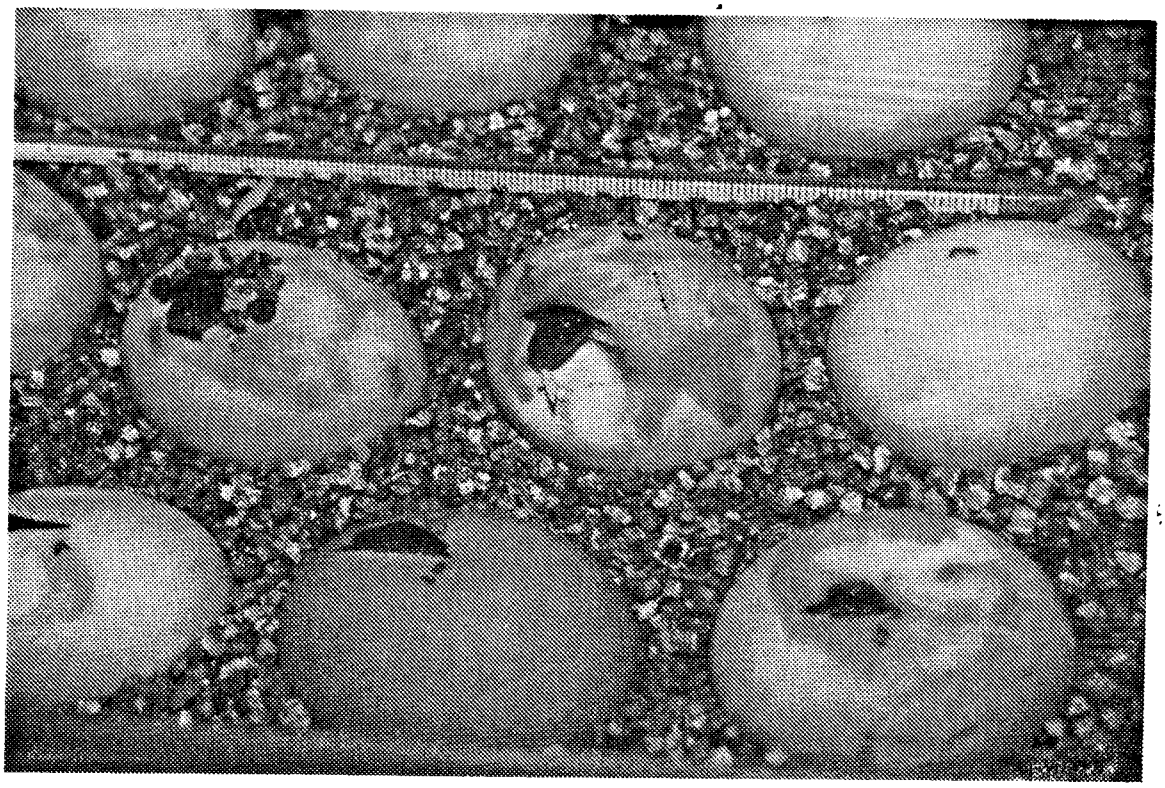
The 21 eggs were numbered and placed in two airtight plastic containers with damp vermiculite. The two containers were then placed on top of one another in an incubator. The bottom container was heated at 31.5°C and the top container at 29.5-30°C. All excessive condensation on the lids was wiped off. The average size of the eggs was 6.2 cm X 4.7 cm. On 10/9/87 some of the eggs became dented and appeared to be drying out. I sprayed water under each egg and on top of the lid, but not on the eggs. On 12/9/87 I sprayed again lightly and noted that all eggs were "filling out". On 25/10/87 I had to spray again.

On 11/11/87 eight eggs were dented. I stopped spraying as it seemed to have no affect. On 12/11/87 all eggs were denting. On 17/11/87 two eggs hatched and it was interesting to note that the worst looking egg which had a large black blotch on the top and was shrivelled was the first to hatch. Both eggs appeared to be the driest. After waiting one day, I slit the remaining eight eggs in the bottom container. This was done to facilitate the hatching process and allow any young to breath air if they should become entangled in their umbilical cord, assist young which had no egg tooth or for any other

		Observed mating	Clutch size	Date of Deposition	Hatching no. and date	
Female no. 1	(1)	May - Sept. 1984	19	20/10/84	0	All fertile but lost
	(2)	July 1st - Sept. 1986	16	17/10/86	12	11.1.87
	(3)	May 31st - July 1987	21	5.9.87 egg average 6.2 X 4.7 cm	21	17.11.87
Female no. 2	(1)	July 1st - Sept. 1984	-	-	-	Reabsorbed
	(2)	July 1st - Sept. 1986	16	10.10.86	14	4.1.87
	(3)	June - August 1987	-	-	-	Reabsorbed
Female no. 3*		wild caught 2.9.73	11	17.11.73	2	N/A
Female no. 4**		July 1st - ? 1987 (incubated at 29.5-30.5°C) (119 days)	14	27.10.87	11	(4.7.0) 23.1.88

* Herpetofauna Vol. 9 no. 2, March 1978.
** N. Charles, pers. comm.

Table 1 Captive depositions of Olive pythons.



reason which may cause fully developed young not to emerge from their eggs. I should like to add that the actual process of cutting the tops of the eggs is very delicate and great care needs to be taken not to cut any membranes.

On 1/12/87 four young hatched in the top container and the same process of cutting the eggs was repeated. The final neonate emerged on 5/12/87. On some of the "late" eggs I cut large "windows", where the young snakes could be observed to be slowly twisting from dorsal up to ventral up etc. At the same time, the colour pigmentation was changing from light grey to dark brown, 2-3 days before the head would actually poke out of the window. All 21 neonates hatched and survived.

Results

(1) Mating females with more than one male increases the chances of deposition and fertile eggs.

(2) Dates from the first observed mating to egg laying are 109, 98, 102 and 119 days. Although the average is 102 days, this can only be taken as an approximate guide as factors such as humidity, temperature variance and actual first observed mating may differ greatly in each clutch.

(3) Incubation time, it would seem, does depend strictly upon the temperature applied, and probably to a lesser degree, humidity. Incubation periods at 30°C are 84, 86, 86 and 88 days, with an average of 86 days. When one batch of 10 eggs was incubated at 32°C the first egg hatched after only 73 days, while the second batch of 11 eggs from the same clutch was heated at 30°C and took 84 days; humidity being constant for both.

(4) Sex/temperature ratio - I have only two clutches which have been correlated with sex and temperature during incubation:

(a) N. Charles incubated 14 eggs in 1987 (29.5°C-30.5°C), from which 10 hatched and all were females.

(b) I incubated 21 eggs in 1987 - 10 eggs at 32°C and 11 eggs at 30°C. As I may have mixed up both batches from the same clutch, I can only give the total ratio - 12 females and nine males, which is nearly 50% male : female. Therefore, due to the wide variance between incubation temperatures and male/female numbers, any conclusions drawn may be inaccurate at this stage.

General remarks

The two pairs of Olive Pythons mentioned are still in my collection and I hope to produce further data on their captive breeding in the future.

I would like to say that the Olive Python has been one of my favorite snakes to keep as it is relatively easy to handle, attains a large size and appears to be quite "intelligent".

One particular goal that remains is to reproduce from the progeny that has been bred in captivity. Any relevant data pertaining to the Olive Python would be most welcome.

I would like to thank Jeff McCormack, Brian Barnett, Neil Charles, Ray Fields and Brian Ridgeway for their assistance, knowledge and support in breeding the Olive Python successfully in captivity.

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Bird Keeper Takes to the Skies

Overseas study travel would not immediately spring to mind as a necessity for a zoo Keeper. After all, you may say, you can only learn how to shovel animal droppings in so many different ways.

However, Taronga Zoo recently announced the first study grant for a Keeper to travel overseas - and it's not for the study of shovelling techniques!

With the help of Trill Birdseed and the Australasian Society of Zoo Friends, Taronga Birdkeeper and A.S.Z.K. Branch President Elizabeth Notley will be travelling to the United States and England for twelve months. She will be studying bird breeding techniques, incubation, and hand-raising of birds at a number of centres.

The visit will be very much hands-on as Elizabeth works and learns in places such as the Patuxent Wildlife Research Centre in Maryland (an endangered species breeding centre), Philadelphia Zoo, Bronx Zoo and The International Crane Foundation in Wisconsin.

On her return, the valuable information gained will be put to good use in the captive breeding programs at Taronga, particularly for endangered species.

"Given the growing importance of zoos for endangered species breeding programs" said Elizabeth, "enormous potential exists for Australia to tsp into the wealth of knowledge available in the States. Every opportunity which can be used to ensure the future of Australian wildlife should be seized upon, and assistance from Trill Birdseed and the Zoo Friends has ensured we are able to give Australian birds a fighting chance.

Mr. Greg Toll, manager of Trill Birdseed was thrilled his company, which is a market leader in the domestic bird food industry, could play an active role in the conservation of Australian birdlife.

Darill Clements - Public Relations, Taronga Zoo

Koalas, Platypus ban

New South Wales has banned the export of koalas and platypuses because too many are dying overseas.

The Environment Minister, Mr. Moore, said in Sydeney yesterday that he would refuse to sign the necessary forms for future exports.

His decision is certain to upset Japanese officials who had hoped NSW would provide several male koalas for Japan's Nagoya Zoo later this year, observers said.

A spokesman for Mr. Moore said the Minister believed too many koalas had died from stress and disease after being exported.

"The situation with platypuses is even worse - in the past 40 years there has been only one case of platypuses breeding successfully in captivity," the spokesman said.

The Age, 10/9/1988