

Husbandry and Reproduction of the Peach-throated Monitor *Varanus jobiensis* in Captivity

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Abstract - The captive husbandry and reproduction of *Varanus jobiensis* is reported. A wild-caught adult pair of *V. jobiensis* maintained together year-round copulated in August 2007, resulting in a clutch of 5 eggs. Three live hatchlings emerged after 179-181 days at a temperature of 28.9 to 32.2 °C.

Introduction

The Peach-throated monitor, *Varanus jobiensis*, has been kept in captivity in both European and North American collections for several decades (earlier referred to as *V. karlschmidti*). Despite being widely kept by both zoos and private hobbyists, little has been published on its husbandry (Horn, 1977; Bayless and Dwyer, 1997; Sprackland, 2007; Eidenmüller, 2007) and reproduction in captivity (Horn and Visser, 1997; Dwyer and Bayless, 2001; Engelmann and Horn, 2003). Here, the husbandry and successful breeding of *V. jobiensis* in captivity are reported.

Acquisition and Husbandry of Adults

A wild caught sexual pair (1.1) of adult *V. jobiensis* was acquired in mid-2006 from separate sources. These animals were housed together year-round in a custom-built enclosure measuring 243 x 91 x 243



Figure 1. Adult *Varanus jobiensis* enclosure



Figure 2. Observable differences in the shape of the tailbase were used to distinguish between male (A) and female (B) *V. jobiensis*

cm (l x w x h), constructed from landscape timbers and an aluminum cattle trough (Figure 1). A 46 cm deep substrate comprised of 75% sand, 20% top soil and 5% fine cypress mulch was provided throughout the enclosure. Ambient temperatures within the enclosure ranged between 26.1 and 29.4 °C, and multiple basking locations ranging from 35 to 54.4 °C were provided using outdoor flood lamps (65 to 90 watts). A 14:10 light:dark photoperiod was maintained year-round. The enclosure was heavily misted with a garden hose for several minutes each day.

The adults were primarily fed weaned mice, although roaches (*Blaptica dubia*) were also occasionally offered. Both adults were fed daily. Due to a strong feeding response in the male, care was taken that food was presented to the female from tongs, to ensure that the male did not steal and consume her food. To prevent the male from becoming obese, he was encouraged to chase after his food, offered from tongs, given his gluttony.

Sexes were determined based on differences in appearance of the tailbase area. The male possesses a prominent hemipenial bulge, whereas the female does not (Figure 2). The male also possesses a high keel towards the middle of the tail, whereas the female does not.

No aggression has been observed between the adult pair. The female usually acts indifferently to the male, whereas the male often pursues the female throughout the enclosure, flicking his tongue while rhythmically shaking its head from side to side. The pair is often seen basking together.

Courtship, Copulation and Nesting

Courtship behavior was first observed on 4 August 2007. The male would approach the female while rapidly tongue-flicking on her head and rear legs, with his head twitching and swaying side to side as he walked. The male would relentlessly pursue the female around the enclosure until she would submit to copulation. Copulation occurred several times a day throughout the enclosure for 12 days, with each event lasting between 10 min and 1 h in duration (Figure 3). No alternation of hemipenes was observed during copulation.



Figure 3. Copulation of *V. jobiensis*



Figures 4 & 5. Oviposition

By 16 August, the male no longer showed interest in the female. Over the next several days the female began to increase in diameter and appeared noticeably gravid. During this time, the female was seen seeking hotter basking temperatures than normal and resting in peculiar positions, such as lifting her abdomen up off of basking spots or suspending her abdomen from objects in the enclosure rather than resting directly on them. These behavioral changes have remained consistent over four clutches laid by the female to date, and in addition to a sudden increase in girth, have become reliable indicators for determining whether or not the female is gravid.

On 1 September 2007, two eggs which had been eaten and digested, as evidenced by their collapsed appearance, were found in the water basin. Test digging throughout the enclosure was observed two days prior to oviposition. The female would dig several shallow pits then insert her snout into the bottoms of these pits to presumably test the humidity and or temperatures.

Oviposition occurred at night on 6 September 2007 (Figures 4 & 5). Despite the presence of an external nest box, the female deposited 3 eggs in the substrate of the enclosure at a depth of ca. 9 cm and at a temperature of ca. 30 °C. Clutch measurements are presented in Table 1. Following oviposition, the female traveled to the water basin to drink then retreated to an external hide box towards the top of the enclosure.

Incubation and Hatching

The eggs were retrieved and set up for incubation in a sealed 2.8 L plastic container. Glitter-grade vermiculite mixed with water by soaking and then rung-out by hand, was used as incubation medium. The incubator, a modified mini-refrigerator with a 3 gallon water reservoir at the bottom, maintained

Table 1. Egg measurements

** devoured/digested eggs not included*

No.	Length (cm)	Width (cm)	Mass (g)
1	5.7	2.5	24.4
2	6.0	2.5	24.8
3	6.4	2.5	24.5

Table 2. Hatchling measurements

No.	SVL (cm)	Total Length (cm)
1	7.9	19.1
2	12.1	24.8
3	10.8	26.7

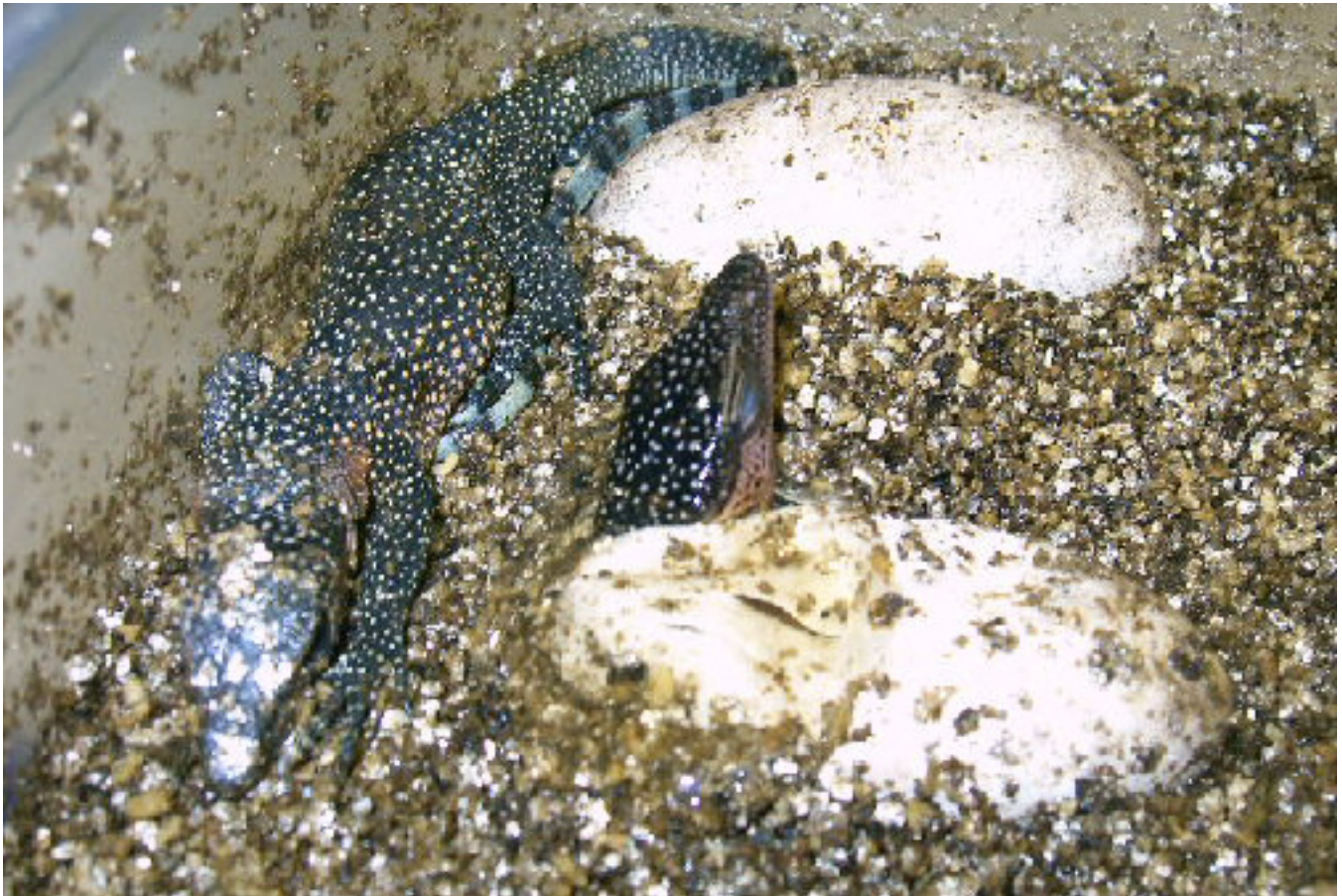


Figure 6. Hatching *V. jobiensis*



Figure 7. Captive-bred
V. jobiensis



Figure 8. Detail of ventral coloration and pattern

temperatures between 28.9 to 32.2 °C. The egg container was vented periodically for gas exchange.

The first egg hatched on 3 March 2008 after 179 days of incubation. The remaining two eggs hatched out on 4 and 5 March. Hatchling measurements are provided in Table 2. The hatchlings measured 7.9 cm snout to vent length (SVL), 19.1 cm total length (TL); 12.1 cm SVL, 24.8 cm TL; 10.8 cm SVL, 26.7 cm TL, respectively.

Husbandry of Offspring

After remaining in the incubator for two days, all three hatchlings were housed individually in 38 L (10 gallon) aquaria. Sphagnum moss was provided as substrate and the rear walls were covered with tree bark. A basking branch and some tree bark scattered on the ground completed the furnishings of each setup. A pyrex bowl for water with a piece of silk foliage in the bowl was provided for each terrarium. Screen aquarium tops were completely covered with plastic sheeting to help retain humidity levels. Three 6 mm holes were made in the plastic sheeting to allow for adequate ventilation. Basking sites of 32.2 °C were provided by 50 watt incandescent bulbs.

The offspring accepted food after 2 days. Roach nymphs (*Blaptica dubia*) and chopped pinkie mice were offered daily. The raising of the offspring has been without difficulties, and all three offspring continue to grow rapidly.

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