

# **DRAGON NEWS**

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**THE NORTHERN OHIO VARANID ASSOCIATION  
IS DEDICATED TO THE UNDERSTANDING AND  
CARE OF CAPTIVE MONITOR LIZARDS**



## FROM THE EDITOR

N.O.V.A. is coming up on its one year anniversary (March). Much has happened in that year and the anniversary issue of **DRAGON NEWS** will be devoted to updating members to N.O.V.A.'s past, present and future as well as other notable events of 1997.

In this issue readers will find a survey. Please take time to fill it out and send it in to us. The data will be used for an article on the popularity of monitor lizards. Please feel free to photocopy the survey and pass it out to other monitor lizard enthusiasts.

The N.O.V.A. yearbook and species resource guide is currently under construction. Anyone that would like to have their varanid interests and photographs included should contact us before May of '98.

N.O.V.A. has a website under construction and should be completed and online by April. Any suggestions concerning layout, what to include/not include, are more than welcome. In the meantime, we can be reached on the web at our two e-mail addresses:

Personal correspondence should be sent to [hogdell@alltel.net](mailto:hogdell@alltel.net)

Dragon News mail should be sent to [dragonnews@yahoo.com](mailto:dragonnews@yahoo.com)

N.O.V.A. is thinking about putting together a species resource panel to answer questions about the different species of monitor lizards. Anyone who feels they have some expertise on a particular species and is interested in fielding questions from the readership, please let us know.

**HAPPY MONITORING!**



## **THE N.O.V.A. OFFICERS AND DRAGON NEWS STAFF**

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JACKIE HIXON - ILLUSTRATOR  
KELSEY ENGLE, CURATOR QUEENSLAND REPTILE & FAUNA PARK -  
AUSTRALIAN VARANID TAXON ADVISOR

## **CONSIDERATIONS**

- LET US KNOW ABOUT YOUR BREEDING SUCCESSES / FAILURES.
- KEEP SENDING IN THOSE PICTURES!
- N.O.V.A. NEEDS YOUR HELP IN FINDING SPONSORS FOR THE ALL-VARANID SYMPOSIUM.
- WRITE DOWN YOUR PERSONAL EXPERIENCES WITH YOUR MONITOR(S) AND SEND THEM IN!

### **N.O.V.A. Would Like to Thank :**

Becky Speer for doing the mangrove monitor care sheet.  
Steve Irwin and Kelsey Engle of Q.R.F.P. again for their eagerness to contribute to the success of this newsletter.  
Jeff Lemm of San Diego's C.R.E.S. for the varanid pic's and responding to the winter husbandry question in the last issue.

### **N.O.V.A. Welcomes New Members:**

Gary L. Maynor Jr.  
Robert Faust  
Ante Luburic - Canada  
John Zarrella  
Christian Bell  
Michael J. Cooper





## **The Monitor Lizards of Africa: A Pan-African Checklist**

### **Part IV: Botswana**

By Mark K. Bayless

This multi-part series will examine country by country the Monitor Lizards that live within the Country discussed (see N.O.V.A. 1(2-4), 1997). Some segments will be short, while others may take up several parts within themselves (i.e. Republic South Africa).

#### **Botswana**

This landlocked country in Southern Africa has an area of 224,610 square miles. It is surrounded by Namibia to the South, Zambia in the North, Zimbabwe to the North-east, and Republic South Africa to the South. Like central Africa, this country is a broad tableland with an average altitude of 3,300 feet above-sea-level. An expansive plateau of 4,000 feet extends from Kanye north to the Zimbabwean border, dividing the country into two distinct topographical regions. The eastern region is hilly bush country and grassland, with the western region lie the Okavango swamps and the Kalahari Desert (Anon., 1984).

Most of the country is a subtropical climate, with cooler temperatures at the higher altitudes. Temperatures range from 41 to 91degrees F. In August begins the seasonal winds that blow sand and dust across most of the country. Rainfall normally averages 18 inches annual, but ranges from 27 inches to 10 inches (In the Kalahari Desert).

Although 90% of Botswana is covered by savanna habitat including the Kalahari Desert that contains sufficient vegetation to support tens of thousands of animals and man, trees such as mopane camel-thorn, motopi (Shepard's Tree), and baobab are common. The Kalahari Desert is deceptive as it is one the most harshest of African deserts that does not look like a desert (i.e. the Sahara or Namib Desert)(Owens, 1984; Auerbach, 1985, 1987).

Lions, leopards, cheetahs, hippos, elephants, giraffes, zebras, rhinos, buffalo (African), gnu (wildebeest), hyenas and numerous species of antelope, including duiker, springbok and gazelles abound throughout this country (Mallinson, 1973; Anon., 1987). Along with 400 bird species, are numerous reptiles and amphibians, including two species of monitor lizard: the Rock Leguaan (Varanus albigularis albigularis) and the water Leguaan or Nile monitor (V. niloticus) (Auerbach, 1985, 1986, 1987; Hoffmann, 1989).

Auerbach (1987) provides an excellent synopsis for both the Rock and water Leguaans, including topics on biogeography, local etymology, morphology, reproductions, diet, and habitat.

The rock leguaan (V. a. albigularis) is found in Botswana in Tropical-Sudano Zambezian ecological regions, and is associated with dry areas. They are frequently found in burrows, termite mounds, cracks in the ground, and in rock crivices (how it got its name, 'rock' leguaan). They may lay 30-40 eggs measuring 2.4 x 1.4 in., and can be found in holes 6.0 - 7.9in. deep that is covered over by the female and left to incubate.



The female may defend the nest for several days following egg deposition, and can be a very formidable foe!

Auerbach (1987) reports that the rock leguaan has attacked people, but this was probably in error, and what really happened is that a rock leguaan mistook a human for a tree and tried to climb up them! Cowles (1959) reported the same incident with a water leguaan (*V. niloticus*). Their diet consists of insects, small mammals and birds, eggs, leopard tortoises, and poisonous snakes (i.e. cobra and puff adder).

The water leguaan (*V. niloticus*) is restricted to more aquatic environments. There are three major water sources that provide year-round water, the Chobe River in the north, Limpopo River in the east and the Okavango Delta in the northwest. The water leguaan is frequently encountered along these water courses. Its diet is slightly varied from the rock leguaan, and more omnivorous in variety; including crabs, mussels, fish, small mammals and birds, eggs, and in drier times, plant matter. If a drought is ensuing, such as in the early 1980's, when water holes and rivers are dry, the water leguaan will exhibit a period of brumation or hibernation (Cloudsley-Thompson, 1967, 1969).

Their reproduction period is from August to October, with 40 to 60 eggs in a single clutch. Eggs measure 2.3 x 1.4 in., with hatchlings measuring 6.0 to 7.9 in. total length (Auerbach, 1987). Eggs are typically deposited in termite mounds or river banks and take up to ten months of incubation (Faust and Bayless, 1996). However, water leguaans are very adaptive and Owens (1984) found a female water leguaan nesting in their

bath-tub. She did not leave the tub for several days.

These lizards are eaten in most parts of Botswana, and the rock leguaan is called, "Konyana Ya naga" or desert lamb. The armband of the skin of a water leguaan is reported to cure rheumatism. In the game reserves both the rock and water leguaans are plentiful, but outside of the reserves they are considered 'vulnerable' (Auerbach, 1987).

A good depiction of Botswana's Rock Leguaans, Kalahari Desert, and Okavango Delta can be seen in three videos: "Animals are Beautiful People" (1974), "The Gods Must Be CRAZY" (1986) and "Tusks" (1990).

#### **Literature Cited**

- Anon., 1987. Worldmark Encyclopedia of the Nations AFRICA. Worldmark Press, N.Y., pp25-30.
- Auerbach, R.D. 1985. The Reptiles of Gaborone. Botswana Book centre, Gaborone.
- \_\_\_\_\_. 1986. First steps in Setswana Herpetology. Botswana Notes and Records 18:71-90.
- \_\_\_\_\_. 1987. The Amphibians and Reptiles of Botswana. Mokwepa Consultants, Gaborone.
- Cloudsley-Thompson, J.L. 1967. Water-relations and diurnal rhythms of activity in the young Nile monitor. Brit. J. Herp. 3(12): 296-300.

\_\_\_\_\_. 1969. Diurnal rhythm of activity in the Nile monitor.  
Brit. J. Herp. 4(5):112-114.

Cowles, R.B. 1959. Zulu Journal. Univ. of Calif. Press, Berkeley.

Faust, R.J. and M.K. Bayless. 1996. Nile Monitors: ecology,  
morphology and husbandry. Reptiles November 4(11):68-83.

Hoffman, L.A.C. 1989. Looking at Leguaans. Getaway December.

Mallinson, J. 1973. Okavango Adventure. W.W. Norton & Co., N.Y.



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## MONITOR QUESTIONNAIRE

A future article on the particular appeal of varanids is planned. However feedback from NOVA members is necessary for a well rounded article. Please fill out the questions below ~~AND~~ return it to the address listed in the newsletter. Any additional comments would also be appreciated. Thanks!

What is your favorite monitor in the wild? \_\_\_\_\_

Reason? \_\_\_\_\_

What is your favorite in captivity? \_\_\_\_\_

Why? \_\_\_\_\_

what characteristics most appeal to you about monitors? (please check)

size \_\_\_\_\_ movements \_\_\_\_\_ resemblance to dinosaurs \_\_\_\_\_

colors \_\_\_\_\_ markings/patterns \_\_\_\_\_ niche in food

claim(predators) \_\_\_\_\_

List anything else \_\_\_\_\_

### Lifestyle

What age did monitors specifically attract your interest? \_\_\_\_\_

was it due to a specific incident or information that brought monitors to your attention? \_\_\_\_\_

Chameleons change colors. basilisks have crests, bearded dragons a good temperament; what is most unique about monitors? \_\_\_\_\_

What do monitors symbolise or represent to you? \_\_\_\_\_

### NILE MONITORS

Got Questions? We've Got Answers



All Other Reptiles

Gary & Laurie Maynor  
330-478-2961



## A Matter of Eggs as Monitor Fare

by

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We all know that good husbandry is vital to a healthy pet. This is especially true of reptiles, including varanids. Proper nutrition is a big part of proper husbandry. Most varanids, as carnivores, are fed whole prey items and as such seem to suffer few nutritional deficiencies. There is one notable exception.

A number of monitors in captivity are fed whole raw hen's eggs almost exclusively, and a biotin deficiency can be seen. The problem is not so much that the diet is deficient in biotin. Biotin is found in almost all food items. Furthermore, the intestinal microflora produces the water soluble B-complex vitamins, including biotin, which are then absorbed from the fecal material as it goes through the last part of the intestine. The problem is that raw avian egg white contains avidin, which has anti-biotin biologic activity. The avidin neutralizes biotin in the intestinal tract before it is absorbed.

In nature, egg-eating (oviphagous) species usually eat fertilized eggs. The difference is that the embryonic tissue present in developing eggs contains biotin. Furthermore, some of the avidin in embryonated eggs is used up as development progresses. Finally, most oviphagous species often will feed on small mammals and birds as well as fertilized eggs. These food items are an additional source of biotin.

A biotin deficiency can cause muscle tremors and generalized muscle weakness. Treatment includes B-complex supplementation and correction of the diet, remembering that the problem is feeding whole raw, unfertilized eggs, almost exclusively.





## CARE SHEET FOR THE MANGROVE MONITOR

*Varanus indicus*

### HISTORY

First described by Francois-Marie Daudin in 1802, the mangrove monitor is also known as the Pacific monitor, the spotted water monitor, and the Indian monitor (Sprackland, 1992).

### DISTRIBUTION

Central Indonesia east through New Guinea and northern Australia to the Solomons and Marshall Islands (Sprackland, 1992). On some islands, such as Guam, it is an introduced species (Sprackland, pers. comm.).

### DESCRIPTION

This is not a large species. Adults generally have a total length of 2-4 feet. In mature animals, there is a definite size difference between the sexes. Females have a fine build and may weigh less than 2 pounds. Males have a much larger bone structure and may weigh more than 4 pounds.

Coloring and pattern vary. The dorsal side is black and peppered in spots which can run from a white to a deep yellow in coloring. These spots may vary in size and pattern between animals. The spots create a banded pattern on the tail and may also give a banded look to the body. A cream or yellow colors the area over and below the eyes. The underside of the animal is this same light color and has a faint, black pattern to it. Scales on the top of the head have a shiny appearance, especially on younger animals. The tongue is dark. Since this lizard is a swimmer, the tail is long and keeled. The feet have raptor-like claws.

### TEMPERAMENT

Most captive mangrove monitors are wild-caught animals, so they have a tendency to be shy and nervous. They may be quick to bite and will often defecate when handled. As they become accustomed to their surroundings, they may lose these tendencies. Be patient as it may take a year or more for changes to begin. They are an intelligent lizard that is active and may be an aggressive feeder. They think nothing of flinging themselves through the air - especially if food is involved.

### HOUSING

Mangrove monitors are active animals that deserve the most space possible. They like to climb, so vertical space is as important as floor space. Juveniles may be housed in a 40 gallon aquarium. Adults should be in an area that has a floor space which is **AT LEAST** twice the length of the animal. The height should be **AT LEAST** equal to the length of the animal. All enclosures must be strong and secure as the mangrove can be an escape artist. remember - if

the head will fit through an opening, there is a chance that the rest of the body will be able to follow.

#### **SUBSTRATE AND CAGE FURNITURE**

Many different substrates may be used, but newspaper is recommended. This is a messy lizard that may relieve itself several times a day. Newspaper is easy to remove and replace. (Note: **Never** use cedar in any reptile enclosure!).

A "swimming pool" is essential. The water container should be at least 2/3rd the length of the animal. This water must be kept clean as the lizard will often sleep in it. A small bowl for water is also recommended so that there is always clean drinking water available.

Use branches and/or shelves to create different levels in the habitat. Hide areas are needed- the more the better- and they should be at different levels. Entrance holes cut into lidded, opaque plastic boxes and/or into overturned hanging flower pots may be used for this.

#### **ENVIRONMENTAL**

Ambient (air) daytime temperatures should be in the mid 80's. A basking spot with a temperature of 95-105 F. can be provided by an incandescent bulb. The light must be placed OUTSIDE of the enclosure in order to prevent contact burns. Night temperatures can fall to the mid 70's. These temperatures must be maintained year round.

A special florescent light which provides UVB may aid in the metabolism of calcium. This light must not be more than 12 inches from the animal for it to be effective.

#### **FEEDING**

Items that may be offered: fish, crab meat, insects, chicken (boiled, skinned and deboned), egg (hard-boiled or scrambled), small mice, land snails (not wild-caught), shrimp, crawfish, canned cat food (chunks of fish). Reptile vitamins should only be lightly sprinkled on the food once a week. Whenever feeding seafood that has been frozen, additional vitamin B1 should be added. Feedings should be small and daily. Variety is the key as mangrove monitors can quickly become obese on a diet of just mice.

This monitor delivers a nasty, slashing bite and can be an aggressive feeder. Because of this, it is suggested that the food be presented on a plate or in a dish. These are intelligent monitors and they will quickly learn that food only comes when they see the plate or dish and not every time that they see a human hand.



## HEALTH CONCERNS

Since almost all mangrove monitors in captivity were brought out of the wild, it is very important that they be treated by a veterinarian for internal parasites.

Claws will need to be kept trimmed to prevent overgrowth. The weight needs to be watched. They can be prone to obesity. This is a slender lizard.

Mature females, especially gravid (pregnant) ones, may be very territorial towards other females. They can inflict serious injury to each other and should not be housed together.

Always practice good hygiene when working with monitors. Wash hands thoroughly with antibacterial soap. Do not put anything associated with the lizard near any human food preparation areas.

Keeping an animal's house clean will prevent many problems. Cages and dishes must be disinfected. Many cleaners, for example Pine-Sol, can cause death in reptiles. The easiest and safest disinfectant to use is bleach. A good cleaning mixture consists of 1/2 cup bleach and 1 teaspoon of dish washing soap added to 1 gallon of water. Animals must be removed from the area being disinfected. A minimum of 5 minutes is needed for bleach to do its job. It must then be thoroughly rinsed off.

## SEXING

Males will often evert their hemipenes when defecating. Do not mistake the female's smaller scent glands as a male's hemipenes.

## RECOMMENDED READING

Balsai, Michael. 1997. General Care and Maintenance of popular Monitors and Tegus. Advanced Vivarium Systems, Inc., Santee, CA. pp.108-111.

Bennett, Daniel. 1995. A Little Book of Monitor Lizards. Viper Press, Aberdeen, Great Britain. pp.95-98.

Sprackland, Robert George. 1992. Giant Lizards. TFH Publication, Inc., Neptune City, NJ. pp.95-101.

Sprackland, Robert George. 1997. "Mangrove Monitor Lizards." Reptiles magazine (March). pp.48-63.

Completed on 19 February 1998 for the Northern Ohio Varanid Association  
by:

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## Capture, Field Observations and Husbandry of the Rare Canopy Goanna

By Steve Irwin

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Beerwah Queensland 4519

(THIS ARTICLE WAS ORIGINALLY PUBLISHED IN *THYLACINUS* VOL.21 NO.2, 1996. IT IS REPRINTED HERE WITH PERMISSION OF THE AUTHOR. THIS IS PART 2 OF 2.)

### **FIELD OBSERVATIONS**

All four specimens sighted were in close proximity of a particular species of dead tree decaying on the ground. Scratchings were obvious in the decaying wood and rakings in the leaf-litter were obvious around the bases of trees and shrubs.

When this species feels threatened by the presence of an intruder, they will climb up several metres where they will observe the intruder. If they continue to feel threatened they will go around the tree trunks and limbs to the opposite side of the intruder's line of sight. If the intruder continues to provoke them, they will go to the very tips of the trees where it is very easy for them to transfer from one tree to another and escape from possible danger. They move across the canopy as fluidly as a terrestrial goanna moves across the ground.

They live, hide and sleep in hollows averaging 7m height from ground level. Mid-morning and mid-afternoon are preferred foraging times. When lying completely motionless in the canopy, their dark colouration and slender body build enables them to camouflage perfectly. Their light body weight and prehensile tail enables them to skim across the branch tips and end foliage. They do not rely on any points of contact to transfer from one tree to the other. Once threatened they will jump short distances from one branch to another. They cling so well to small branches, twigs and foliage, that if they are dislodged from a tree by shaking it violently, they will not hit the ground below. Instead, they'll grip to anything they contact during their fall and regain their climbing posture.

### **TRANSPORT AND HANDLING**

Immediately after each specimen was captured they were placed into a calico bag and taken back to the campsite where they were then placed into an empty esky with a thick padding of foam on the bottom and sides. This foam



helped to stop bruising of the specimens on the bumpy roads of Cape York Peninsula.

They were placed in the back of my 4WD under a canopy and a boat which provided extra shade.

The journey back from Cape York Peninsula took approximately 36 hours, over some very rugged roads. During this time the bags were not checked. They were not disturbed throughout the entire journey. Whilst the truck was not in transit, it was parked in the shade to keep the specimens cool. During transportation they were maintained at temperatures between 24 degrees C and 32 degrees C.

Upon arrival at the Queensland Reptile & Fauna Park, the three specimens were removed from the esky, then removed from each calico bag and placed in their enclosure.

### **HOUSING**

Their enclosure is 2.2m high x 2.0m long x 1.4m wide. It has a flip-top roof and removable glass panel on the front door. Fine stainless steel woven screen secures the goannas inside the enclosure as the glass panel and roof are removed and raised daily to allow unfiltered sunlight into the enclosure. Hessian blinds were placed on the windows to limit visual stress for a "settling in" period of three weeks.

The substrate is hardwood chips and leaf-litter. Hollow logs and a permanent water bowl are also provided. Feed stations are situated behind logs so they feel secure when approaching food. A heat log maintains the temperatures between 18 degrees C - 34 degrees C throughout the year. This heating system allows a thermal gradient within the enclosure.

### **DIET**

All three specimens settled in very quickly. Within 7 days of capture all three specimens were feeding readily on pink mice. We are conducting trials with different food sources. These captive specimens have been observed eating rodents, chopped liver and heart, crickets and grasshoppers, dog food, green grapes and chicken. The three scats which were collected from the specimens immediately after capture were examined by Geoff Monteith of the Queensland Museum and his findings are as follows:-

#### **Sample 1 (Small scat)**

Contents when teased apart seemed to be remains of one large insect. The most intact portions were a pair of large "predatory" mandibles. I think the insect

was most probably a tree cricket of the family Gyllacrididae. There were also some pieces of wood, perhaps ingested during prey capture. These crickets usually hide during the day in wood cavities.

#### **Sample 2 (small scat)**

Contents appeared to contain the remains of a single, medium sized insect, well chewed, which was probably a cockroach.

#### **Sample 3 (Small scat)**

Contents almost entirely the chewed remains of a medium sized (3-4cm) longicorn beetle of the genus *Dihmmus* (F. cerambycidae). One mandible of another insect, possibly a cockroach, was present.

It would appear obvious from this faecal analysis and our observations in the wild, that canopy goannas forage for insects and food on the ground, amongst leaf-litter and rotting timber. They use their forelimbs to scratch out and locate their prey, particularly insects.

### **BEHAVIOUR**

An interesting feeding behaviour that has been observed in captivity, is the raking of their food with their fore-claws. Once a specimen seizes a rodent by the head or neck, they bash it against logs or substrate and violently head-shake to kill the prey. Once the prey is dead they rake it with both forefeet, starting at their head and raking towards the rear end of the prey.

Harry W. Greene (1986) comments: The raking of the food with the claws as swallowing commenced, appears to align the prey with the long axis of the monitor's head. We believe further research is necessary to prove if this is the case. My current theory for this behaviour is this is a technique utilized to dislodge green ants *Oecophylla smaragdina*. These ants are very abundant throughout the goannas' habitat and several ant nests have been observed in wild goannas' home trees. Green ants are particularly aggressive and sick, injured, dead or vulnerable animals are overwhelmed by them within seconds. These ants also attack healthy animals, including humans. This captive group of goannas have a definite period of increased activity from 14:00hrs to 17:30hrs. During this period they search for food and normally eat between 15:hrs and 16:00hrs. They also enjoy a daily swim, normally prior to feeding.

### **BREEDING**

Successful breeding has been very difficult despite successful matings and egg laying. During December 1994, one of the females named "scar tail" refused food which was being offered twice weekly.



Despite varying the food being offered and increasing the enclosure temperature to 32 degrees C she continued to show no interest in food. It was decided she was gravid (Irwin in press). Hollow logs and bamboo filled with dry and moist vermiculite were placed in the enclosure as possible nest sites.

At 07:22hrs on 26th December 1994 an egg was observed on the enclosure floor. The previous night "scar tail" laid three eggs in her home hollow where she was presently asleep. The egg on the floor was accidentally pushed or rolled out of the hollow. The eggs were collected and placed in a container with a 1:1 mix of vermiculite and water, then placed in an incubator at 30 degrees C. Two eggs were removed and discarded on 31st December 1994, as they were starting to decompose. Egg #2 was fertile and developing, it was left in the incubator. Unfortunately, this egg died and was starting to rot on 28th January 1995. "Scar tail" was offered food in the afternoon of the 26th December 1994 and she was ravenously hungry (Irwin in press). During March 1995 "Scar Tail" again became disinterested in food which was being offered twice weekly. By 25th March 1995 she was refusing food. At 12:45 hrs on 28th March 1995, 4 eggs were discovered on the enclosure floor.

They were collected, measured and weighed, but were very hard shelled and dry. Although they were incubated, they all deteriorated and were discarded on 4th April 1995.

On 6th April 1995 the other female named "Eve" laid a clutch of 4 eggs on the floor of the enclosure. These were also weighed, measured and incubated, then discarded on 13th April 1995.

TABLE 1  
DATE FEMALE EGG LENGTHmm WIDTHmm MASSgrams

26.12.94	Scar Tail	# 1	45.0	21.5	6
		# 2	49.5	20.0	8
		# 3	40.5	17.0	4
28.3.94	Scar Tail	# 1	44.4	13.4	6
		# 2	47.5	16.8	6
		# 3	43.6	18.1	6
		# 4	46.4	15.5	6
6.4.95	Eve	# 1	44.5	17.0	8
		# 2	43.5	16.0	6
		# 3	45.0	18.5	8
		# 4	46.0	18.0	8
19.6.95	Scar Tail	# 1	obviously infertile		
		# 2	no measurements recorded		
15.5.95	Eve	# 1	obviously infertile		
		# 2	no measurements recorded		
		# 3			
10.2.96	Scar Tail	# 1	---	---	8
		# 2	---	---	9
		# 3	---	---	10
16.4.96	Eve	# 1	---	---	4
		# 2	---	---	4
		# 3	---	---	3
8.6.96	Scar Tail	# 1	56.0	21.0	10
		# 2	57.0	21.0	11
		# 3	57.0	20.0	13
		# 4	55.0	15.0	10

The male named 'Adam' has been observed mating with his females since 23rd April 1995. Once a female ovulates and is receptive to mating, 'Adam' sleeps with her in their hollow at night and copulates or rests on top of her during the day. They spend 24 hours per day in contact with each other.

TABLE 2  
MATINGS OBSERVED

23.04.95  
3.05.95  
8.05.95  
26.12.95  
27.12.95  
28.12.95  
31.12.95  
1.01.96  
2.01.96  
9.02.96

FEMALE  
Scar Tail  
Scar Tail  
Scar Tail  
Scar Tail  
Scar Tail  
Scar Tail  
Scar Tail  
Scar Tail  
Scar Tail  
Eve



Unfortunately, only one egg has been positively identified as fertile, but perished during incubation.

The problem we are endeavouring to overcome is providing gravid females with a viable nest site. We have tried termite mounds, moist sand, moist sphagnum and vermiculite in hollows mounted high and on the floor. Neither female has utilized these possible nest locations. They have been observed looking for nest sites anxiously.

It appears they retain the eggs (not happy with nest sites) as long as they can, then deposit them at night in their home hollows or randomly throughout the enclosure. A problem we desperately tried to rectify with a wooden nest box 600mm X 300mm x 150mm full of moist sphagnum moss and two rotting tree trunks placed on a heat pad inside their enclosure.

It worked. During the night of 7th June 1996, "Scar Tail" deposited a clutch of four eggs 180mm down into the sphagnum moss within the nest box. The eggs were removed and incubated in 1:1 vermiculite and water at 30 degrees C at 08:00hrs on 8th June 1996. Despite being early days in incubation all four eggs look healthy and our hopes are high.

#### **ACKNOWLEDGEMENTS**

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#### **LITERATURE CITED**

Cogger, HG, Cameron, EE, Sadlier, RA, and Eggler, P. (1993): The Action Plan for Australian Reptiles. Australian Nature Conservation Agency Endangered Species Program Project Number 124.p168.

Covacevich, JA & Couper, PJ. (1994): Type Specimens of Frog and Reptile Species, Queensland Museum: Recent Additions and New Information. *Memoirs of The Queensland Museum*, 37:53-65.

Czechura, G. (1980). The Emerald Monitor, *Varanus prasinus*, (Schlegel): An addition to the Australian Mainland Herpetofauna. *Memoirs Of The Queensland Museum*, 20:103-109.

Greene, H.W. (1986): Diet and Arboreality in the Emerald Monitor, *Varanus prasinus*, with Comments on the study of Adaptation. Fieldiana: Zoology, New Series 31:1-12.

Ingram, GJ & Raven RJ (1991): An Atlas of Queensland's Frogs, Reptiles, Birds and Mammals. Board of Trustees, Queensland Museum, Brisbane.

Irwin, S. (1994). Notes on Behaviour and Diet of *Varanus teriae* Sprackland, 1991. Memoirs Of The Queensland Museum. 35:128.

Irwin, S. (In press) An Innovative Strategy of the Detection of Egg-Deposition in Captive Varanid Reptiles: Herpetofauna.

Sprackland, R.G. (1991): Taxonomic Review of the *Varanus prasinus* Group with Descriptions of Two New Species. Memoirs Of The Queensland Museum. 30:561-576.

Wells, R.W. & Wellington, C.R. (1985): A Classification of the Amphibia and Reptalia of Australia. Australian Journal of Herpetology, Supplementary Series 1, 1-161.

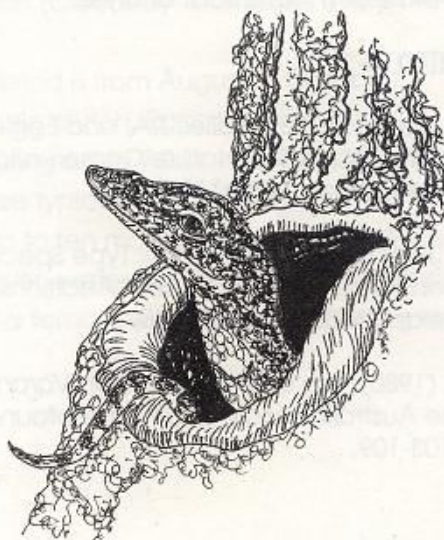
Whittier, J.M. & Moeller, D.R. (1993): *Varanus prasinus* (The Emerald Goanna) on Moa Island, Torres Strait, Australia. Memoirs Of The Queensland Museum. 34:130.

Czechura pers. comm.

Winters pers. comm.

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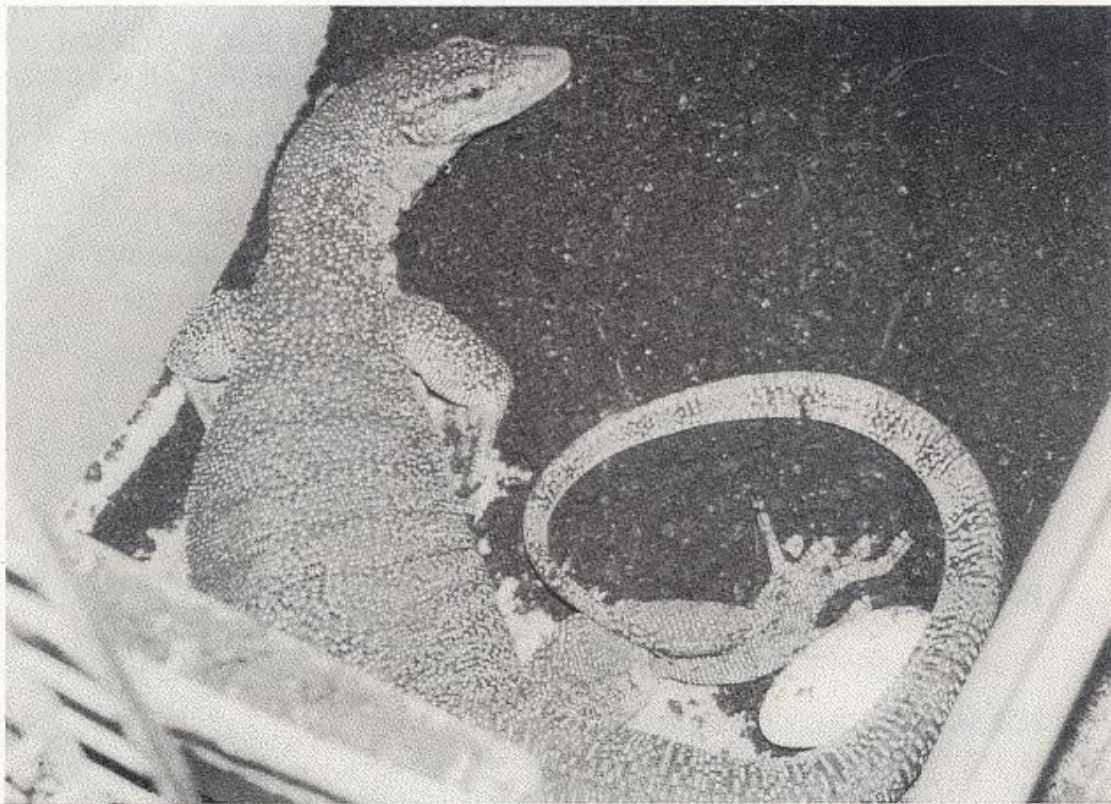
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