

VARANIDS

A Newsletter Dedicated to the Advancement of Monitor Research

Vol. 1 No.2



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Monitor Research at the San Diego Zoo
Bengal Monitors

The Editor's Desk

By: Hany Morsi

Dear Friends,

I hope that everyone enjoyed our inaugural issue of "Varanids". I have gotten a positive response from it and I hope we can continue to bring you a quality newsletter.

There are two topics of interest that I would like to cover this column. First of all, I have received a number of calls and letters from people either asking me if we are Varanix or Varanews or if we are associated with them. We are not.

I have been receiving a number of calls and letters expressing interest in articles on Nile and Savannah monitors (*V. niloticus* and *V. exanthematicus* respectively). There seems to be a lot of interest in these two species. I find that to be quite refreshing in this day and age when monitors and herps in general sometime seem to be regarded as more of a money driven investment rather than

animals which can be appreciated and loved just for their natural beauty. Over the past few years I have seen a trend towards not wanting to own or research animals that are not the most exotic or expensive. So the interest in these two inexpensive and common species gives me hope that at least some people out there are truly interested in monitors because of the beautiful animals that they are. We have enclosed an article on the White-Throat monitor (*V. albigularis albigularis*) in this issue and hope to bring you an article on Nile monitors soon. To those of you who called or wrote me, thanks and keep up the good work.

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(*V. bengalensis nebulosus*)

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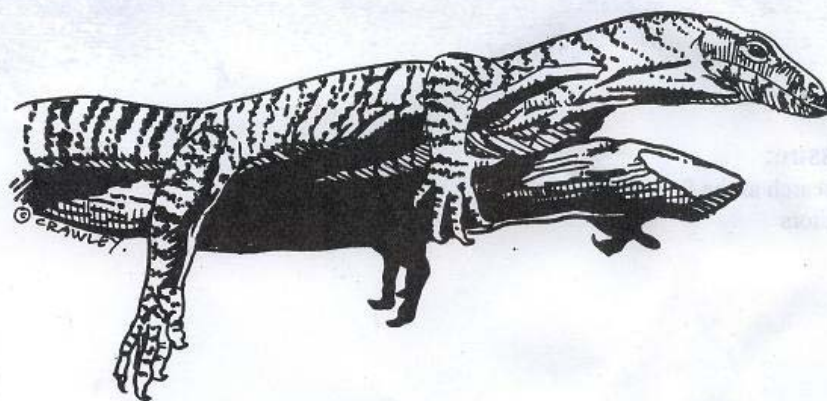
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Monitoring the World

New Monitor??

I have in my library, photographs of a new subspecies of monitor from Halmahara Island, Indonesia. This lizard resembles *Varanus doreanus* (a.k.a. the blue-tail monitor) in body shape and tail color. However, it's anterior is a greenish-blue, it has a dorsal pattern similar to that of the peach-throat monitor (*V. jobiensis*) and the face of an Asian water monitor (*V. salvator*). Has anyone seen this varanid? If so, I would like to hear from you.

Field Studies

Current field studies in Russia are examining growth rates and population structure of the desert monitor (*V. griseus caspius*). Field studies in Vietnam are underway to examine the distribution of varanids in that country. A student in Germany is examining the physiology and zoology of the crocodile monitor (*V. salvadorii*), and we really look forward to reading his findings.

Animal Planet

Has anyone been watching the 'Animal Planet' channel on cable television? A new program on Australian wildlife is hosted by the husband and wife team, Steve and Terri Irwin. Steve and Terri are the curators/owners of the Queensland Reptile Park. These two think nothing of

chasing down goannas, crossing crocodile infested waters, or leaping over barbed wire fences to take a closer look at a deadly snake. They are truly the modern day crocodile Dundee and Dundame, with a little of Indiana Jones and Roy Chapman Andrews charisma as well! If you like to see Australian wildlife, especially crocodiles and goannas, this program is for you and the family too! Furthermore, Steve Irwin has recently published two papers in varanid behavior. "Nocturnal Activity by *Varanus panoptes* at Cape Melville" can be found in *Herpetofauna*, Vol. 26, No. 2, 1996 (p.50), and "Nocturnal Nesting by Captive *Varanus Lizards*" can be found in *Herp Review*, Vol. 27, No. 4, 1996 (p.192-194).

Monitor Conference

Numerous zoologists in Europe have informed me that a second Varanid conference will be held in Bonn, Germany from August 12th-14th, 1997. The first conference was held in 1989. An informal reception will be held on the evening of the 11th at Museum Alexander A. Koenig. It appears there will be approximately 40 presenters at this conference, with there papers to be published in an edition of "Mertensiella", a German herpetocultural journal. The papers of the first varanid conference were

published in "Mertensiella 2" (1991). Apparently this symposium is by invitation only. If you are interested in attending it you may write to Dr. Hans-Georg Horn at Hasslinghauser Strabe 51, 45549 Spockhovel, Germany.

All Information Compiled by: Mark K. Bayless. 1406 Holly St., Berkley, CA 94703.



Varanid Research at the San Diego Zoo

By: Jeff Lemm, Research Assistant, C.R.E.S., San Diego Zoo

For over 20 years, the San Diego Zoo's Center for Reproduction of Endangered Species (CRES) has been a driving force in the conservation and research of threatened and endangered animals. For the past 15 years, the Comparative Physiology division at CRES has focused its research primarily on large lizards. The earliest work, by current deputy director of CRES, Dr. John Phillips, involved a number of in-depth studies of the green iguana (*Iguana iguana*), culminating ten years later with a reintroduction program for that species in Belize.

In 1988 the International Union for the Conservation of Nature and Natural Resources (IUCN) designated African monitors as a group of lizards in need of immediate attention. The following year Dr. Phillips traveled to Namibia to begin an 18 month study of the White-throated monitor or leguaan (*Varanus albigularis albigularis*).

Monitors at the study site in Etosha National Park were captured by hand, weighed, measured, and a blood sample was taken from the tail vein of each lizard. In order to find each study animal for future measurements and to estimate the size of an individual's home range, radio transmitting devices were fitted to a number of the animals. It was found that home ranges in this species can be extremely large: male home ranges averaged about seven square miles while females averaged about one-third of that. The entire home range of each animal was only used twice a year, during the wet season when food was plentiful and during the six week mating season in July and August. During the cold/dry

season animals became dormant and were usually found taking refuge trees.

To determine if food availability was responsible for these activity patterns, a supplemental feeding experiment was conducted during the dry season, when monitors moved very little. Six male lizards were located every third day and each given three chicken eggs. The animals were observed eating the eggs and then tracked. Males receiving supplemental food traveled over 30 times farther per day than males who did not receive extra food.

Males who were not provided with food only traveled roughly 50 meters per day.

At three years of age, when the monitors were four to five feet in length, research began with the hope of understanding problems associated with reproduction of large monitors in captivity.

At the end of the mating season, gravid female monitors were captured and held in temporary enclosures until egg deposition. The eggs were assigned to one of three incubators. In each incubator there was a different temperature and substrate moisture level. The eggs hatched in roughly 120 days with greater than 80% hatching success at all three temperatures. However, in the incubator with the lowest temperature, 80.6 F degrees (27

C), and highest soil moisture, the young were larger than any other of the hatchlings. All of the hatchlings were returned to the wild except 18 of the youngsters. These animals were destined for the CRES lizard research facility at the San Diego Zoo, now under the direction of Comparative Physiologist Dr. Allison Alberts.

At three years of age, when the monitors were four to five feet in length, research began, with the hopes of understanding problems associated with reproduction of large monitors in captivity. Our goal

was not to breed the animals, but to study some of the factors which may result in a lack of breeding in captive animals.

Zoos and private individuals have traditionally kept large monitors together or in close proximity to one another. Due to the solitary nature of these lizards in the wild, keeping monitors together in captivity may result in social stress, causing abnormal reproductive cycling in the females. In order to study this phenomenon, the monitors were established in two different housing situations: females housed continuously with males, and those housed with males only during the breeding season. Once a month the monitors were weighed and measured and a blood sample was taken to assess the levels of testosterone, estrogen and corticosterone (an indicator of stress) in the blood plasma. Each female monitor also underwent a monthly ultrasound scan so that we could document the progression of ovarian egg development.

Although all the data has not yet been analyzed, our results thus far show that only those females housed apart from males during the non-breeding season exhibited a normal rise in estrogen. Through ultrasound exams, we found that the high estrogen peaks coincided with ovarian egg development. Males who were housed only briefly with females showed the highest testosterone levels. Despite the apparent benefits of housing the sexes apart, all but one of the females reabsorbed their eggs. Under normal circumstances, mature follicles will either be laid as infertile eggs or be reabsorbed, but in the presence of males neither event would occur. The single female that completed a normal cycle was one who had been moved away from the group to participate in an animal education show at a distant location within the zoo. We believe that due to the keen olfactory ability of this species, the constant scent of a male monitor is enough to disrupt a female's normal reproductive cycle. Consequently, the females have since been moved to another location in the zoo, nearly half a mile from the males. Three females now appear to be cycling in a more normal manner. Thus far, all mature follicles have either been reabsorbed or infertile eggs have been laid.

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A number of individuals and institutions have bred this species in captivity. Animals are usually held in close proximity to one another or housed together year round, normally in isolated pairs. It is possible that when our animals were all housed together, reproduction may have slowed or ceased due to a high number of animals in a small area. Lack of reproduction due to high population densities and elevated levels of corticosterone has been shown in a number of vertebrate species, including the American alligator (Elsey et al., 1990).

During our ultrasound scans of the white-throated monitors, we began to notice that female monitors had follicles within the ovaries at all times of the year. Even the younger, smaller females had structures known as previtellogenic (immature) follicles. Dr. Pat Morris of the zoo's Veterinary Services Department, who had collaborated with us on the previous ultrasound scans decided to further explore the potential applications of ultrasound techniques to large lizard biology.

In 1994, CRES received six hatchling Komodo monitors (*Varanus komodoensis*) on loan from the Cincinnati Zoo. Our research plans included a diet study, but we also had the opportunity to conduct other studies at the same time. Since it had been shown at the Cincinnati Zoo that mature Komodos could be sexed by plasma testosterone levels (Judd et al., 1977), we wanted to see if a combination of ultrasound imaging and blood testosterone analysis could successfully aid in sexing the two-year-old lizards.

After nine months of blood sampling and three ultrasound exams, Pat attempted to make a determination of the sexes of the animals. Without knowing the plasma testosterone levels of the animals, Pat was 100% correct in identifying male and female juvenile Komodos based on ultrasound exams alone. The bloodwork showed that two of the animals had plasma testosterone levels 40-60 times greater than the other four, indicating these two monitors were almost definitely males. Pat's scans showed that neither of these two animals had any structures resembling previtellogenic follicles, while the other four animals, whose testosterone levels were very low, did possess follicles. Pat and Allison further tested the new technology by successfully

sexing gila monsters (*Heloderma suspectum*) and beaded lizards (*H. horridum*) by ultrasound.

The reason for the Komodo diet study was to design new alternatives to feeding rodents to monitors in captivity and to try to solve some of the diet-related problems, including stress fractures, which had previously been seen in these animals. Our study on the young Komodos involved a comparison of the usual captive diet of rodents to that of a new turkey-based diet formulated by Zoo Nutritionist Dr. Mark Edwards. The diet includes ground turkey, steamed bonemeal and a vitamin and mineral supplement with a calcium/phosphorous ratio equal to that of the rodent diet. The rodent and turkey diets were matched such that total caloric intake would be the same, although the turkey diet usually weighed only 75% as much as the rodent diet. The animals were weighed and measured every week and a monthly blood sample was taken to allow comparison of blood calcium and other vitamin and mineral levels between the two study groups. After two years, the diet study is now complete and the blood samples are currently being analyzed. In terms of growth, the turkey-eaters are the same size and weight as the rodent-eaters. Another interesting observation is that the fecal deposits of the turkey-eaters are about one-fourth the size of those from the rodent-eaters, which are mostly made up of hair. This suggests that the animals on the turkey diet may be digesting their food more efficiently than the animals on the rodent diet.

In the wild, one of the only monitors that normally takes mammalian prey are adult Komodos. Young Komodos live their first few years in the trees, feeding primarily on insects, reptiles and birds. It is our belief that monitors unaccustomed to mammalian prey will generally fare better on a hairless diet. This may be true for the savanna monitors as well. Dr. Phillips found their wild diet to be composed mainly of snails and insects. For this reason, our animals have been raised on snails, turkey, insects, eggs and other non-hair containing carnivore diets. None of our monitors have ever eaten a rodent, and they are in excellent health. Although many people have had a fair degree of success with savannah monitors on a varied diet which includes rodents, I have seen more than ten adults of this species die of obesity and hair

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impactions when the diet was made up 90% or more of rodents.

Research projects such as these are important in maintaining the health and well-being of captive animals, but may also be important for managing populations in reserve systems in the wild. Hopefully, some of these projects will indicate the type and amount of habitat that needs to be saved to sustain a population of wild monitors. In connection with this, the education of local people may be the key to the survival of the world's wild monitors.

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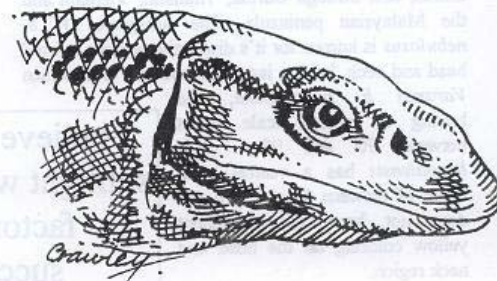
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V. albigularis

Reproduction of the Bengal Monitor Lizard, *Varanus bengalensis*, in Captivity.

By: Daniel Gorman.

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Introduction

The Bengal monitor lizard consists of two sub-species, the nominate form *Varanus b. bengalensis*, and *Varanus b. nebulosus*, the clouded monitor. Collectively they have a broad geographic distribution, ranging from Pakistan, India and Sri Lanka, east through Burma, Thailand, Vietnam and the Malaysian peninsula. The subspecies *V. b. nebulosus* is known for its distinctive yellow colored head and neck, having larger supraocular scales than *Varanus b. bengalensis*, and having a ventral scale count between 70 and 90. *V. b. bengalensis* has a ventral scale count of between 90 and 110 and does not have the prominent yellow coloring on the head and neck region.

Housing and Husbandry

I have one male and one female *Varanus b. nebulosus* and one female *Varanus b. bengalensis*. These animals were between 51 and 61cm (20 and 24 in) total length (TL) when purchased. They were housed together in a 178 x 61 x 61cm (70 x 24 x 24in) glass terrarium with a screen top until they reached approximately 102cm (40in) TL (one year after I received them). The enclosure was heated with two seventy-five watt incandescent "Chroma-Lux" bulbs. Additional lighting came from two 1.2m (4ft) full spectrum, fluorescent "Vitalite" bulbs. Large rocks were placed in the enclosure for the lizards to bask on or retreat under. Branches were available for climbing and woodchips were used as a substrate. The enclosure was placed in direct sunlight in which the lizards

could bask during the summer months. I believe that direct sunlight (through a screened window) was a critical factor in the successful breeding of these animals. Since the males attain an average TL of 149cm (4.9ft) and can weigh 2.7 kilograms and females attain an average TL of 119.3cm (3.9ft) and can weigh 1.5 kilograms (Auffenberg, 1994), I decided to house the animals in an enclosure similar to but larger than the one described above. This

enclosure is 4.9 x 1.2 x 1.8m (16 x 4 x 6ft). Two separate eight foot units made from wood with sliding glass doors make up the bottom half of the enclosure. An eight foot long screen unit sits on one of the lower units. The animals have access to this screened area through a hole in the top of the enclosure below it. The main advantage with this setup is that the animals can be separated, each animal into its

own enclosure, during egg laying, feeding and cleaning. The heating and lighting arrangements for this enclosure are similar to that of the smaller enclosure. Spotlights hang over the rocks in one corner of each enclosure so the animals can thermoregulate by basking under the lamps. Strict attention was paid to photo period, controlled by a digital timer. During the summer months (June, July and August), temperatures range from 23-37°C (73-98°F) with "hot spots" of 38-43°C (100-110°F). Photoperiod was set at 14L:10D. After summer there is a gradual decrease in temperature until it reaches the winter months (December, January and

I believe that direct sunlight was a critical factor in the successful reproduction of these animals.

February), where temperatures range from 11-26°C (52-78°F) with a day/night cycle of 9L:15D. The animals were put into hibernation for about three months beginning in late November and ending in late February. The enclosures were kept dry until early June, which in their natural environment is the beginning of the monsoon season. At this time I began misting the enclosure once a week. Corresponding with the height of the monsoon season (end of June, early July), it is increased to four or five times per week (approximately 38 liters in total).

Diet

The diet of juveniles consists of crickets, super mealworms, earthworms, cooked chicken, rat pups, and pinkie mice. As they began to grow and mature I began feeding them larger prey such as mice, chicks, and rats as well as live insect prey. Food is accepted dead or alive. All food is dusted with one of the following vitamins: Reptivite, Nekton-Rep or Rep-Cal. The amount of food offered to each animal varies with the time of year and body condition. I generally feed two times a week in the summer months, decreasing food intake into the winter. No food is offered to adult animals during the months of December, January and February. Insect prey is increased during the "monsoon" season and decreases during hibernation and dry season.

Courtship and Breeding

In this species, courtship behavior, mating, and egg deposition has been observed in captivity (Auffenburg, 1983; Klag & Kantz, 1988; Horn & Visser, 1989). In nature these behaviors have been observed only on rare occasions (Deraniyagala, 1958). Breeding of my animals first occurred in 1991. The first week in September, one female (the *V. b. nebulosus*) stopped feeding. In all other cases females fed right up to egg deposition. On September 19th she deposited a clutch of nine eggs. All appeared to be in good condition, but were lost due to improper incubation techniques. Although the eggs failed to hatch, embryos were found when the eggs were

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opened. At this time, all three adult specimens were under 102cm (40in) TL so the breeding was a great surprise to me. Copulation between the male and female was not observed, but the male was observed on several occasions in August to mount, scratch and rub his chin upon the female *V. b. nebulosus*. No courtship behavior was observed between this male and the female *Varanus b. bengalensis* during this time.

From August 1992 to October 1993, eight additional clutches were deposited. During this time the animals were housed in the larger enclosure.

1992 Data:

Over a period of nine days beginning on July 23, 1992 twenty seven copulations were observed between the male and female *V. b. nebulosus*. The

male was observed using both left and right hemipenes during copulation. On August 29th, nineteen eggs were deposited by the female. Twenty-six days passed from the last observed copulation to the date she laid her eggs. The male was also observed copulating with the female *V. b. bengalensis* on August 9th. No other copulations were observed but I believe that more occurred throughout the week. This female deposited a clutch of eleven eggs 36 days after the observed copulation on September 19th. The clutches from both females were lost, one due to incubation failure and the second due to predation by

the male and other female in the enclosure. This was determined from egg fragments found in their feces. At this point, the male continued to court both females. Copulation between the male and the female *V. b. nebulosus* was observed between September 22nd and October 1st. She deposited her second clutch October 27th. This clutch consisted of twenty-two eggs. Eleven neonates hatched from this clutch with an average TL of 24.8cm (9.8in) and an average weight of 19.5 grams. Incubation lasted 252-261 days at a temperature of 28-29.4°C (82.4-85°F). The female *V. b. bengalensis* deposited her second clutch

Females became more active two weeks prior to egg deposition, roaming their enclosures at odd hours. It is my opinion that they were searching for a suitable place to lay their eggs.

on December 1st, seventy eight days after the first. This clutch was unexpected as it was late in the season and no copulation was observed between this pair. The clutch consisted of twenty-two eggs. Six of these hatched. Neonates averaged TL of 21.6cm (8.5in) with an average weight of 17.5 grams. Incubation lasted 234-240 days at a temperature of 29-30°C (84.2-85°F). Females became more active two weeks prior to egg deposition, roaming their enclosures at odd hours. It is my opinion that they were searching for a suitable place to lay their eggs. Manipulations were tried to encourage the females to use nest boxes but proved unsuccessful. The clutches were laid during the day and night, the process taking from 3 to 5 hours. They generally deposited their eggs out in the open, on the substrate of the enclosure but a few were buried under rocks.

1993 Data:

Copulation was once again observed between the male and both females beginning in early July, 1993. The animals were separated in August. The female *V. b. bengalensis* deposited twenty-three eggs on August 12th. Seventeen of these eggs hatched after an incubation period of 296-300 days at a temperature of 27-28°C (80.6-82.4°F). The female *V. b. nebulosus* deposited twenty-seven eggs. Unfortunately twenty-five of these eggs were lost, apparently due to a white fungus that covered them after they were placed into a vermiculite substrate. The two remaining eggs were moved to a different incubator. One of them went on to hatch after 282 days, at a temperature of 27-28°C (80.6-82.4°F).

Both females were kept in separate enclosures with no contact with the male after their first clutch was deposited. They were well fed and quickly regained body weight. On October 16, forty-nine days after her first clutch, the female *V. b. nebulosus* deposited a clutch of twenty-six eggs. On October 24th the *V. b. bengalensis* deposited twenty-five eggs, seventy-three days after her first clutch. Of

the seventy-five eggs, three were not viable and two were eaten by the other female. Both clutches produced neonates. Nineteen *V. b. nebulosus* hatched 258-261 days at a temperature of 28-29°C (82.4-84.2°F). They had an average TL of 22.1cm (8.7in) and weighed an average of 19g. Nine *V. b. bengalensis* hatched in 251-254 days at an average temperature of 29-30°C (84.2-85°F). They had an average TL of 21.5cm (8.5in) and average weight of 18g. Successful hatching occurred in both of the second clutches without the females copulating with the male since the first clutch was deposited, possibly indicating sperm storage capability in this species.

Incubation

All eggs that successfully hatched were incubated in a "Hova-Bater" incubator. The eggs were removed from the females' enclosure and put

into plastic sweater boxes filled ¾ of the way with vermiculite. Just the tops of the eggs were visible. The vermiculite was moistened with filtered water at a ratio of 1:2 (water:vermiculite) by weight. Each box can hold twenty-five eggs. The sweater box was then placed into the center of the incubator with a probe thermometer going through the side of the incubator into the sweater box. Wet vermiculite is then piled around the sides of the container to keep humidity high in the incubator. I feel that the holes in the top of the incubator should be kept sealed

Eggs that were thought to be dead were left alone until I was sure they were dead. I must stress that patience is important when dealing with monitor eggs. I've had eggs that I thought were dead, hatch.

because high humidity and little temperature fluctuation for the first couple of months is important. Since the embryos are so small, oxygen demands are low at this time. In the early stages of incubation each container is opened once a day, allowing for gas exchange. During this time I would check the eggs for signs of dehydration (eggs collapsing) and signs that they might be going bad. When signs of dehydration were noticed, moistened vermiculite was added around the eggs. Eggs that were thought to be going bad were left alone until I

was sure they were dead. Usually eggs will turn brown and start to smell after they die. I must stress that patience is important when dealing with monitor eggs. I've had eggs that I thought were dead, hatch. When checking eggs I would mist the outsides of the sweater box to bring humidity up, always being careful not to get water on the eggs. As incubation progresses, the oxygen demands of the embryo increases. Eventually containers are aerated four to five times a day, always followed by misting. Finally with two months to go in the incubation period, all holes in the top of the incubators are unsealed to allow increased gas exchange. Experiments with other incubators and different incubation techniques proved unsuccessful. The above description proved the best for successful hatching of this species.

Neonate Care

Neonates usually took from 24 to 48 hours from the time they pipped the egg to full emergence. After hatching, the neonates were housed individually in 46 x 30.5 x 30.5cm (18 x 12 x 12in) 10 gallon glass aquariums. White paper towels were used for substrate for approximately one week, or until the yolk sac was absorbed. At that time, green indoor/outdoor carpeting was cut to fit each tank. Cardboard was placed between the tanks, acting as a visual partition to reduce stress. Each tank was provided with PVC pipes and branches for hiding and climbing, "Croma-Lux" bulbs for heat and "Vitalights" to provide ultraviolet radiation, important for calcium metabolism. Three to five days after hatching the neonates were chasing crickets and soon eating pinkie parts. All food and water is supplemented with the vitamins mentioned above.

Approximately one month after the October 27th, 1992 *V. b. nebulosus* breeding, swelling in the front claw of the first born specimen was noticed. Shortly after, this same swelling was noticed in three siblings. The first was taken to a veterinarian with a stool sample for analysis, which turned out to be negative for pathogens. One possible cause of this swelling was the method of cleaning the carpets in the enclosures. Since each cage had only one carpet, the

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carpets were not properly dried after cleaning. There are now two sets of carpets for each neonate. They are cleaned with a bleach/water mixture and allowed to dry thoroughly. The vet prescribed Baytril® to be given orally to the affected neonates. To do this without causing undue stress, the medication was placed in a pinkie mouse. The pinkie was then fed to the neonate. Two of the four specimens affected lost claws prior to being medicated. The swelling was reduced after the treatment. None of the others were ever affected.

Status and Conservation:

The Bengal Monitor is listed by the Convention on International Trade in Endangered Species (CITES) as an Appendix I animal, meaning that this species is threatened with extinction and private institutions or individuals cannot buy or own these animals without state and federal permits. They have been placed under total protection in an attempt to slow the ever growing skin trade. This species is

routinely killed for food, village medicines and due to superstitions that say they bring bad luck when one crosses your path or enters your home. Tens of thousands are killed on highways each year, particularly during the rainy season. Adults and eggs are sold in markets in Sri Lanka, India and Vietnam (Auffenberg, 1982; 1989). It is very important that private breeders learn more about

They have been placed under total protection in an attempt to slow the ever growing skin trade.

the reproductive biology of captive varanids since the skin trade and habitat destruction may result in herpetoculturalists working with environmentalists and governments to conserve the species.

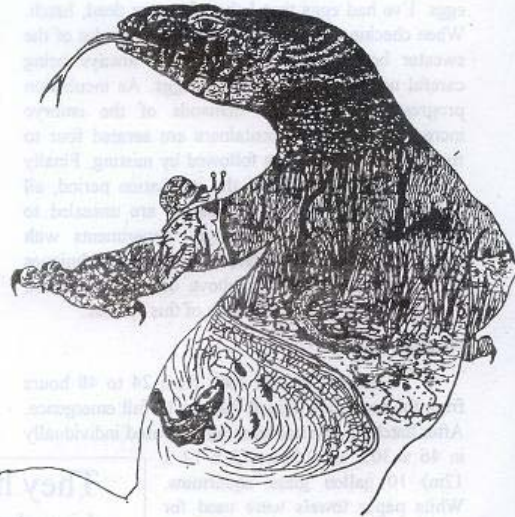
Acknowledgments:

Special thanks to Dr. Walter Auffenberg who graciously took time out on my behalf to advise, consult and assist in the successful breeding of these Bengal Monitors. Thanks is also extended to my Mom, Dad, brother Jimbo, and my girlfriend for their encouragement. Appreciation is extended to Bill Holmstrom of the Bronx Zoo, David Galbraith of the Grandby Zoo, Allen Toth, Gary Balok, Jasmin Bin Abdul and Brij Gupta. I also thank Mark Bayless who assisted me with literature sources.

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VARANIDS



Letters to the Editor

Dear Mr. Morsi,

Thanks very much for the free issue of "Varanids"! Nice artwork on the cover. I like the balance between the articles. "Monitoring the World" has some curious short bits while Donal Boyer's comments on husbandry were more scientific and in-depth. I believe in constant research in the area of captive husbandry and I like to have the benefit of others' experiences to draw from. Captive care is always evolving and improving here at my house! As far as suggestions for the newsletter, I would like to see a page dedicated to caging/husbandry advances, as far as what others are building themselves and how it's working for them. I also would like to hear about other peoples trial-and-error successes/failures with interactions between themselves and their lizards, especially what is working for them in the way of acclimating their monitors. Thanks once again and keep up the good work.

Paul A. Massignani, Jr.
South Holland, IL.

Dear Varanid Society,

Thank you for mailing me the inaugural issue of "Varanids". I am anticipating more informative issues in the future. I have an intense interest in varanids and I own seven specimens. I have 4 savannah monitors, a white throat, mangrove and water monitor. In future issues I would like to see information pertaining to captive breeding, husbandry, and natural history. I would also be interested in book reviews of past varanid publications and future publications. Finally, I think an index of articles published in scientific and technical journals would be very useful.

Kevin R. Taylor
Stoney Mountain Exotic Reptiles
Phoenix, AZ

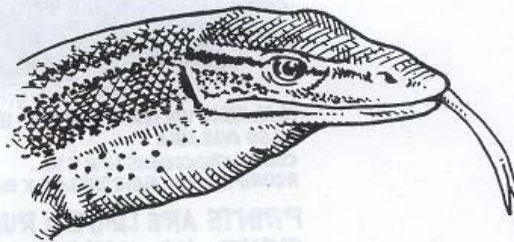
I am very pleased that people such as Kevin and Paul took time out to write and make useful suggestions and comments. Some of Kevin's suggestions have already been addressed. In Jeff Lemm's article there is a list of technical articles published by the San Diego Zoo's Center for Reproduction of Endangered Species.

Dear Varanid Society,

I saw your ad in the latest issue of Reptile and Amphibian magazine and I would very much like to receive your newsletter. Also, if you could use any artwork or graphics in your newsletter, I would be only too pleased to contribute. My interest in monitors is chiefly expressed in painting and drawing these magnificent animals and I have quite a backlog of material to draw from. Thanks a lot and good luck.

Philip Crawley
Australia

As you can see I have put Philip's artwork to good use. I would like to take time out to thank him for his beautiful work as well as all the other people that sent me material. I am very pleased with the artwork response and hope that it continues to blossom.



V. gouldii

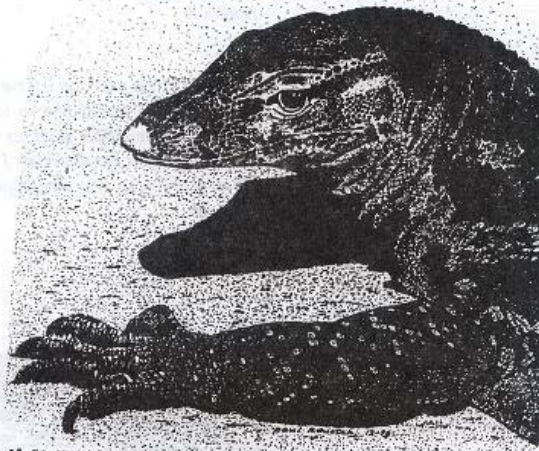


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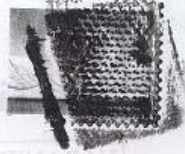
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