Volume 2 Number 1 *1 February 1992*

VaraNews

VaraNews is published by Varanix ©, the Varanid Information eXchange, dedicated to the responsible captive care of monitor lizards through education and the open exchange of all information pertaining to Varanidae.

General Info

There's a lot of material in this issue, so this section will touch briefly on a few random topics.

There have been a few requests to include more photos in the newsletter. Up to this point, they have been used sparingly in order to get the most info as possible stuffed into 8 pages. The format of VaraNews itself is designed to do the same. Rather than go for an "artistic" look (= a lot of white space on a page), the concept is to give you as much information per square inch as possible.

The question of publishing monthly or increasing the number of pages frequently comes up. This is primarily a matter of economics, where the former would double the cost of mailing and the latter would increase both printing and mailing costs. (The limited numbers, under 200, and geographical distribution of VaraNews readers does not lend itself to bulk mailing rates.) Membership dues are currently the only source of funding. Another point to consider is having enough material to fill the pages. Going to a monthly publication would require a constant stream of article submissions. These requests will be fulfilled as soon as possible. Your ideas & suggestions for "growth" into these areas are most welcome.

A thousand thanks to everyone who has taken the time to send in suggestions, articles and kind words.

Coffee Cups Are Here!

After a long delay, the cups with the Varanix logo arrived. Public apologies to those of you who waited 3-4 months to receive your order. The notice in VaraNews 1(7), October 1991, alluding to the imminent arrival of the cups (which actually arrived a few days before Christmas) was based on a promise from the supplier. I seem to have forgotten one of the fundamental rules to which I usually subscribe: "Promises are comfort to a fool". (You may have noticed that no mention was made of the cups in the December issue, which went to print before they had been received.) See the Ads/Notices section for ordering info.

Identity Crisis

Dr. Uwe Krebs has offered a new "monitor" for the Varanix logo. He states that the current lizard sitting atop the Old World in the logo is "not at all aesthetic as monitor lizards are" and that it looks more like a skink. I agree 100% with Dr. Krebs and feel his piece of artwork does much more justice to The Family. If you wish to offer your artistic embodiment of a monitor lizard, we can make a contest out of it in the next issue. If no others are received, the logo with Dr. Krebs offering will be used beginning next issue.

Call for Skins

As many of you are aware, the majority of varanids smuggled into this country come in the form of skins, wallets, belts, etc. and not as live animals. Stephen D. Busack, Ph.D. (Chief, Morphology Section, Nat'l Fish & Wildlife Forensics Laboratory, 1490 East Main St., Ashland, OR 97520) has begun a program intended to help thwart this illegal trade. Dr. Busack made the following statement in an open-letter sent out December 1991:

Monitor lizards are currently a major item in the skin trade and several taxa within the genus are regulated or afforded protection under various provisions of C.I.T.E.S. agreements. Once a varanid skin has been tanned and dyed, however, the species source of that hide becomes difficult to determine; without a means to identify processed skins, enforcement of any regulation is impossible.

I have begun what I consider to be a pilot study to determine whether species identification is possible from a tanned skin, or from a single scale. To accomplish this goal, I have initiated a microscopic study of dorsal and ventral scales of all members of the genus Varanus. My research protocol is twofold:

1. Examine the scales of all species for the purpose of determining if species-level differentiation is possible on a "raw" hide. If species can be identified from the single scales or "suites" of scales characteristics, then:

2. Examine scale characteristics on hides of known species after tanning to characterize surface changes induced by the tanning process,

and I have already had a certain amount of success with those skins (unidentified, of course, but divisible into 3 classes of characteristics) already available to me.

If your collection contains alcoholic or dry representatives of Varanus that have collection data (country and province at the very least), I would much appreciate your sharing the list of available taxa with me. Some time [early 1992] I'll be requesting a loan based on the availability of material across the U.S.

...

Thank you very much for your cooperation with this request.

Wanted: Komodo Dragon

The following message was recently posted on an electronic bulletin board:

> *I am interested in getting a carnivorous lizard that starts small and grows very large. I have talked to people at a few pet stores, and one lizard that has been suggested is a Komodo Dragon. A local pet store says that they think they can get them, although it's been a while since they have been on their distributors' lists. Another pet store laughed when I mentioned this, and said that they were most likely ripping me off, that it's impossible to get one of these. (Schedule 1 endanger species, or some such thing.) Someone else claimed that they have had them in stock and made good pets. A fourth store said that they were "a great way to end up with blood poisoning". Anyway, now I'm interested in these animals. Has anyone out there ever seen/owned one? If I buy one, I'd like to make sure I'm getting the real thing - How could I tell? Also, is it possible for these lizards to be bred in captivity? If they are in fact endangered, I don't want to buy one that was captured in the wild.*

The scary thing is that it was posted in all sincerity and not as a joke! I should add that the ensuing message thread did point out the absurdity of the stores' claims in having had, or being able to get, Komodo dragons from their distributors and that even if they were "available", they are not suitable as a captive pet! If nothing else, the fact that this message was ever conceived is a great call to increased positive public awareness and education about varanids, indeed all reptiles and amphibians.

Tips & Tricks

How are you dealing with the environmental necessities of captive care for your varanid? This is where your helpful hints on topics as food/feeding, heating, water systems, habitat design and maintenance will be shared with the readership.

If you've got some extra closet space to put to good use, Troy Pearson has an intriguing concept that he chose to share with VaraNews readers rather than sending it in to Better Homes & Gardens.

From Closet to Enclosure

by Troy Pearson

This article describes how I converted a walk-in closet in my basement into an enclosure for a 4 ft (TL) water monitor, *Varanus salvator*. The enclosure

VaraNews is the newsletter of Varanix, the Varanid Information eXchange. Varanix was founded to promote responsible care of varanids in captivity through education and the open exchange of information.

A primary function of the eXchange is to build a collective knowledge base that will serve to improve our understanding of the family Varanidae. The goal of these efforts is to improve their chances of survival, both in captivity and in the wild.

Editorial submissions:

May be written, typed or in electronic form (preferred). Both PC and Mac diskettes are acceptable, in ASCII, MS Word, WordPerfect or RTF format.

Please indicate any special conditions of publication, such as withholding mention of name/organization or giving credit to a person or publication.

Back Issues:

To receive the issues listed below, send:
Number 0: $1.50, 1(1) - 1(8), 2(1): $2.00 each

Inquiries and Membership:

One-year membership in Varanix is:

- $10 US/year (USA)
- $12 US/year (foreign)

Members receive VaraNews, the newsletter of Varanix. VaraNews is published bi-monthly the beginning of every even-numbered month.

VaraNews is free to zoos upon request and to herp societies participating in a newsletter exchange program.

Address all inquiries & memberships to:

Greg Naclerio
Varanix
8726D S. Sepulveda Bl. #243
Los Angeles, CA 90045 USA

Tel. (310) 768-8669

Messages may also be left via computer & modem on:

- Herpetology Online Network - (215) 464-3562
  (Herp-Net is a US-based electronic forum which can be accessed at any modem speed. The caller pays only for the phone call. System operator: Mark Miller. Settings: N-8-1-F) Send mail to "Greg Naclerio"
- CompuServe - send mail to user ID: 71320,721

Specify "monitor" or "varanid" as the keyword/ subject

Editorial Review Board: Frank Braun, Mark Bayless

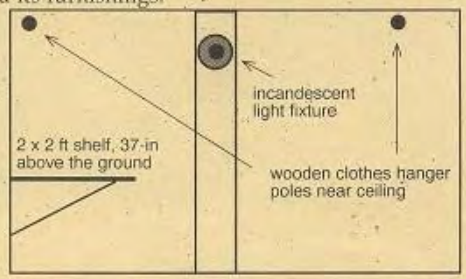
© 1992 Varanix, Los Angeles, CA 90045. Varanix and the Varanix logo are trademarks of the Varanid Information eXchange.The opinions expressed in VaraNews represent those of the respective author.

The contents of VaraNews may be reproduced for inclusion in the newsletters of other herpetological societies with the following provisions: the material is reproduced without change, appropriate credits are given, and a copy of the publication is sent to Varanix.

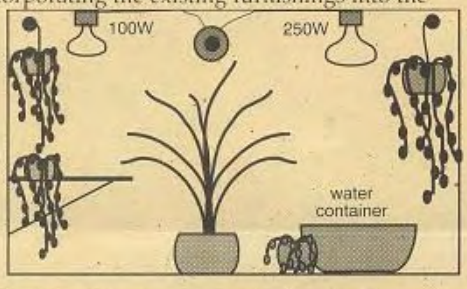
"began" as a 91L x 40W x 74H inch closet with drywall sides and ceiling and a wooden floor raised 3.5 inches above a concrete slab. The entrance door is in the middle of the 91-inch side.

Design

The project began with a sketch of the empty closet and its furnishings:



I drew in what I wanted the enclosure to look like, incorporating the existing furnishings into the



"terrain". A list of materials that would be needed to complete the project was then made:

- 2 electrical junction boxes
- 2 porcelain electrical housings
- electrical cord
- 1 piece dry wall screen (24 x 6 inches)
- 1 4-ft shop light fixture (2 fluorescent bulbs)
- 2 4-ft VitaLites (Durotest, NJ)
- 1 250-watt infrared heat bulb
- 1 100-watt grow light
- 2 24-hour timers
- 1 120V fan
- 2-4 bags pine bark mulch (2 cubic feet each)
- plants (6 Pothos, 1 Areca palm)
- 2 large logs/tree branches
- 7 medium & large rocks
- 5 thermometers (1 water, 3 air, 1 air & humidity)
- various pieces of scrap wood
- long wood screws
- 1 large oval water container (50-gal galvanized)
- paint (Rustoleum wood saver, moisture resistant enamel, non-toxic when dry, in blue, light & dark green, dark brown)

Preparation & Painting

After I found or purchased what was needed, I began by sweeping/"shop vac'ing" out the closet and then washing it down with a dilute bleach solution. Once the area was clean and dry, I cut an air vent (approx. 21 x 5 inches) in the upper right hand corner of the closet front. The drywall screen was then secured with a frame made from some of the scrap wood.

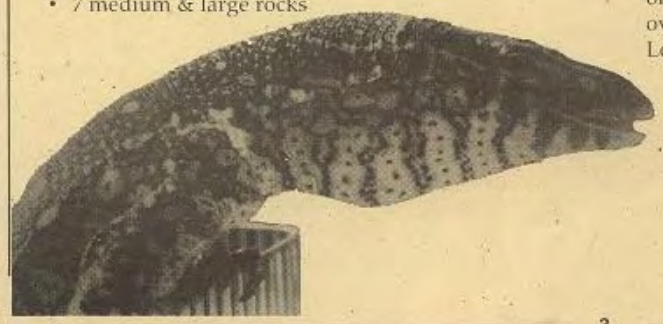
Several coats of paint were used to seal the walls and ceiling to prevent heat and moisture damage. For decorative purposes, the ceiling was painted "sky" blue, the floor and shelves "earth brown" and the walls "foliage" green and brown. The "foliage" effect was accomplished by first painting the walls light green. Dark brown was then used to create tree limbs. After this dried, a darker green was applied, just enough to "blend" the tree limbs into the background.

Extra attention was given when painting the shelves and floor. Good coverage was essential to protect them against the eventual defecation, urination, heat and moisture to which they would be subjected. It is important to stress that non-toxic paint was used. (This paint is intended for use on children's toys.) Fans were used during painting to provide adequate ventilation.

Furnishings

I prepared two large tree branches by cutting them into "workable" sizes and washing them in a dilute bleach solution to kill bacteria and parasites. The branches were thoroughly rinsed and dried before covering them with a protective coat of paint.

The large branches were fastened together with long wood screws. The "composite" branch unit was positioned such that the long section ran the breadth of the closet (91-in) and a short section stretched over the water running from closet back to front. Long wood screws fastened the branches to the

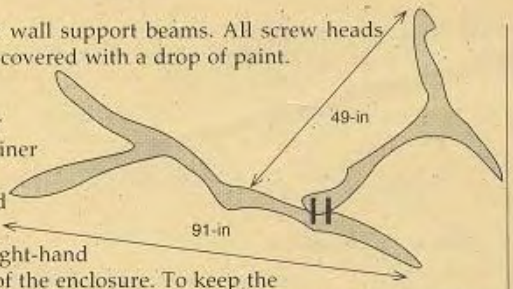


This is your last issue of VaraNews if the mailing label says:

expires volume 2 number 1

No additional reminders will be sent due to the time and cost involved in doing so.

closet wall support beams. All screw heads were covered with a drop of paint.



The water container was placed on the right-hand side of the enclosure. To keep the container in place and aid climbing in and out, some large rocks (1 - 2 feet in diameter) were placed around the outside and a couple were placed inside. Three rocks were put on the shelf, for both decoration and basking. Rocks under the heat lamp capture and retain heat better than the wood shelf.

Substrate is a combination of pine bark mulch and rock. As with all captive enclosures, it is important to maintain a high degree of cleanliness, especially with a substrate that retains moisture. Soiled substrate is removed as soon as spotted.

I added the plants for the finishing touch: 6 Pothos (with lots of foliage) and 1 Areca palm. Two of the Pothos were hung over the shelf, one at each end, and two over the water. One was then placed on a large flat rock on the shelf, using a thin strip of flat metal (aluminum) to strap it to a wall beam, somewhat in the manner of a pipe strap. I made certain there were no sharp or jagged edges to injure the *V. salvator*. The last plant was placed next to the water and surrounded by rocks to secure it in place. The palm was placed in the center of the room; the base was surrounded by rock and mulch.

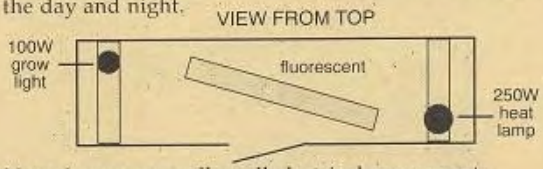
I knew that the plants could be easily damaged by the monitor's digging. I had already planned to substitute fresh for damaged plants, allowing the damaged ones to "rejuvenate" in a plant grow room. I have not as yet found a way to protect the plants, but am not bothered by the extra effort. The Pothos usually bounce right back, so I am able to recycle the same basic stock and am not constantly buying plants.

Some people may argue that the inclusion of plants, real or artificial, makes no difference to the inhabitant. I recognize this and if for no other reason have added them for their aesthetic value. After misting the enclosure, the plants do help maintain higher humidity levels throughout the day. This, of course, suits *V. salvator*.

It is important that the plants be non-toxic. If you are not familiar with plants, consult someone who is. Also, many cities have poison control centers which can provide a list of toxic/non-toxic plants. It is also important to be certain that the plants are pesticide-free.

Heat & Light

I mounted the two electrical junction boxes and porcelain housings on 2 pieces of the 2 x 4's, each 39 inches in length. After the wiring was connected, these light fixture boards were nailed to ceiling reinforcement boards which ran front to back of the closet. The 250W red heat lamp was positioned over the water container on the right side of the closet and the 100W grow light was positioned over the shelf on the left side. The 4-ft fixture with the 2 VitaLites was hung diagonally between the two incandescent fixtures and wired to the grow lamp over the shelf. All wiring was run out of a small hole made in the ceiling and each was connected to a separate timer which was plugged into outlets outside the closet. The grow light over the shelf and VitaLites are used for day and basking light, the infrared light over the water is a heat source during the day and night.



Note: Lamps, as well as all electrical components, must be positioned/protected such that the inhabitants cannot burn themselves. This is usually accomplished by screening them off when they are within reach.

Air circulation and humidity are controlled by the fan mounted in a cutout in the front of the enclosure to the left of the door. The fan is installed in a fashion similar to that described in VaraNews 1(7):2, Controlling Humidity.

The last items put in were the thermometers: one was positioned on the rock under the growth light and one on the branch under the heat lamp (basking temps.); one under the shelf on the substrate (ground temp.), one in the water and one was mounted high on the back wall (air/humidity). These were all mounted to prevent the risk of damage, both to the thermometers and to the inhabitant. I watched temperature for a week prior to introducing the *V. salvator*, making the adjustments necessary to provide the proper heat range. Once in, I continued to observe the temperatures as well as the monitor's behavior and activity level.

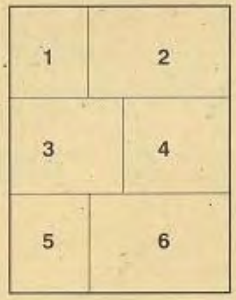
Summary

The closet was fairly simple to transform into an enclosure. When undertaking such a task, it is important that careful attention and thought be paid to provide a safe and secure environment. I welcome any ideas you have on how to improve this enclosure.

Original Articles

Possible topics include, but are not limited to, any aspect of captive care, reports on captive breeding, personal experience, description of natural habitats, flora & fauna, legislation.

1. Ventral side incision, dermis moved aside showing (A) fat bodies
2. Internal organs: (B) liver, (C) large intestines, (D) stomach
3. (C) small intestines(D) stomach, (E) gall bladder
4. (F) 3-chambered heart, (G) lungs surrounding the heart muscle



5. (F) heart, (G) lungs, (H) gastric artery [seen at 90 degrees to (H)]; also seen is mesentary artery and dorsal aorta
6. (I) testes, (J) kidney, (K) renal-portal vein to kidney

The following article is accompanied by the color plate insert. Refer to grid and legend above for identification.

The Necropsy and Internal Anatomy of a White-throated Monitor Lizard (*Varanus albigularis* DAUDIN, 1802)

by Mark Bayless

The White-throated monitor was first described by François-Marie Daudin (1774-1804) in 1802. Little is known about Daudin, but he did author several works on herpetology. A paraplegic suffering from tuberculosis, Daudin died a few weeks after the death of his wife, shortly before his 30th birthday (Adler, 1989; pers. comm.).

V. albigularis inhabits hilly regions, grasslands, kopjes and scrub lands throughout east, south and southeast Africa, including South Africa, Kenya and Tanzania. The "common" savannah monitor, *V. exanthematicus* (Bosc, 1792), of which *V. albigularis* was recently considered a subspecies (*V. e. albigularis*), ranges throughout west, east and equatorial sub-Saharan Africa. A closely related monitor which also resembles *V. albigularis* is found in Angola, *V. exanthematicus angolensis* (Schmidt, 1933). The diet, physiology, behavior and appearance of these animals are similar to the extent they are often confused with one another. Discussion of the taxonomy of this species (subgenus Polydaedalus) has been addressed by Böhme, Joger and Schatti in their 1989 paper, *Fauna of Saudi Arabia*, which also describes the recently discovered Yemen monitor, *Varanus yemenensis*; also by Mertens (1942) and Strimple (1989). The subject is currently being studied separately by Dr. Donald Broadley and by the author.

The White-throated monitor is not commonly seen in pets shops. Export of captive-born animals from South Africa is allowed; Tanzania exports about 100-150 individuals annually (Bayless, 1991). The specimen pictured in this paper was the male "half" of an active breeding pair of *V. albigularis* at the East Bay Vivarium in Berkeley, CA. He died on 14 December 1991. (Having become familiar with this animal over the past few years, I was shocked upon notification of his demise, the cause of which was not known as this article was being prepared. I wish to extend my thanks to EBV for generously giving me the deceased animal.) This *V. albigularis* was 4+ years old and measured 115.5 cm (45.5 in) TL, 59 cm (23 in) SVL. He weighed 11 lb (5 kg).

The necropsy began with an incision made at the cloacal vent moving in an anterior direction. (Please refer to the accompanying color plate.) The interior of the abdominal and thoracic cavity was separated from the endoderm (inner layer of the skin). The first organ observed was the fat bodies, organs where energy-producing nutrients are stored for "leaner times". It is common for fat bodies to be extensive in size in captive individuals due to the abundance of food year-round.

The liver is located anteriorly under the fat bodies and is the largest single organ in the body. This red-brown, triple-lobed organ stores glycogen, a form of glucose necessary for cellular activity, which is made available to the body as required. The liver also stores and distributes carbohydrates, fat and proteins. Ammonia, a direct product of cellular metabolism of carbohydrates, is highly toxic to the body. When combined with carbon dioxide, the ammonia is rendered less toxic. Urea is formed and is eliminated by the kidney's if there is a sufficient water supply in the body. (This is why it is important to avoid dehydration in reptiles.) If the monitor lives in an arid or semi-arid area, (e.g., *V. albigularis*), the body must conserve water. In this case, a concentrated form of urea is formed, uric acid (the white solid/fluid accompanying feces), and eliminated with minimal loss of water.

The digestive and excretory system consists of the stomach, small intestines, large intestines, kidneys, bile ducts, gall bladder and cloaca. The stomach is made of smooth muscle and secretes enzymes to break down the animal's meal into smaller portions. The intestines are separated into two different regions: the smaller intestines, which extract nutrients from the gut via the highly convoluted

inner lining comprising microscopic, thumb-like projections called "villi". The villi also absorb glucose, amino acids and water. The large, or lower, intestine serves as a waste collection and storing tube prior to ejection. All waste products, uric acid, fur, bone and water are ejected from the cloaca into the environment. (Monitors often defecate when handled. Anyone who has experienced the role of "environment", especially with a larger specimen, can attest to the statement made by this action: "Let me go now!")

The heart and lungs are in close proximity to each other and work intricately together. The 3-chambered heart pumps blood throughout the body, both to and from the lungs. The heart transports oxygenated blood from the lungs to every cell in the body. Deoxygenated blood is passed back to the lungs, "cleansed" through passive osmosis, and reoxygenates the blood on the way to the heart. (One may be surprised at how small the lungs appear since these animals can initiate such a loud hiss when threatened. Monitors actually do this by collecting air within the throat cavity and blowing it through their nasal passages.)

The renal and portal veins at the bottom of the abdominal cavity remove, transfer and bring blood, nutrients, glucose, waste products, oxygen, and carbon dioxide to the excretory system (pancreas, kidneys, liver, cloaca). This is one area in which reptilian physiology differs from mammalian physiology, where most organs are not directly connected via portal or renal veins.

The (male) reproductive system consists of the two testes, located above the kidneys next to the portal/renal veins. The testes are creme colored, oval-shaped organs and vary in size and weight depending on the time of year. It is suspected that an increase in hormonal and spermatozoon activity from September to December causes the testes to increase in size and weight (Bom, 1989; Cissé, 1976; Horn, 1989; Visser, 1981; Visser, pers. comm.).

I wish to extend my appreciation to the staff of the East Bay Vivarium (Owen, Ron, Mary, Dale, Cliff, Arvey, Mike, John, John & Jason), to Dr. Kraig Adler, Dr. Wolfgang Böhme, Betty Gordon, Dr. Hans-Georg Horn, Pete Strimple and Gerard Visser.

Literature Cited

Adler, K. 1989. *Contributions to the history of herpetology*. SSAR. p 202.

Bayless, M. 1991. *VaraNews* 1(5):5-8. "A trip from Africa".

Böhme, W., U. Joger, B. Schatti. 1989. *Fauna of Saudi Arabia*. Vol. 10, pp 433-448.

Bom, Ad and Ina. 1989. *Lacerta*. De Steppenwaran (*V. e. microstictus*) in reptielenzoo Iguana 48(1):2-5.

Bosc, M. 1792. *Actes de la Societé d'Histoire Naturelle de Paris*. "Lacerta exanthematica". 1(1):25

Cissé, M. 1976. *Bulletin de l'IFAN*. T. 38, ser A, no. 1. "Le cycle genital des Varans du Senegal (Reptiles Lacertiliens)". pp 188-205.

Daudin, F-M, 1802. Histoire Naturelle, generale et particuliere des reptiles; Ouvrage fasiant suite a l'histoire naturelle generale et particuliere. Paris, de l'Imprimerie de F. Dufait. vol. 3: 73-84.

Horn, Hans-Georg & G. Visser. 1989. *International Zoo Yearbook*. "Review of reproduction of monitor lizards in captivity". vol. 28:140-150.

Mertens, R. 1942. *Die Familie der Warane*. Senckenberg Museum. p 319.

Porter, K.R. 1972. Herpetology. W.B. Saunder & Co. pp 524.

Schmidt, K.P. 1934. *Annals of the Carnegie Museum*. "The Reptiles of the Pulitzer Angola Expedition". 22(1):2-4.

Strimple, P. 1988-89. *The Forked Tongue13(12):8-13; 14(1)5-7; 14(2):5-8; 14(3):7-16*. "The savannah monitor, *V. exanthematicus* BOSC, 1792". Greater Cincinnati Herp. Society.

Visser, G. 1981. *International Zoo Yearbook*. "Breeding the White-throated Monitor at Rotterdam Zoo". vol. 21:87-91.

Monitor-ing Medicine

This section is a new offering for VaraNews readers. Dr. Chris Cauble of the Center Animal Hospital (897 Silver Spur Road, Rolling Hills Estates, CA, 90274) has agreed to serve as consulting veterinarian for this question/answer section of VaraNews. I made Dr. Cauble's acquaintance under dire circumstances: an outbreak of giardia in several Nile monitors, *V. niloticus*. I credit both him and Dr. Cisneros of CAH with saving these animals. Not only do they know and care about the animals, they are also most patient in explaining the details of what is going on with the animal: sickness, recommended/optional tests, course of action, course of prevention.

You are invited to send in your medical questions which will be forwarded to Dr. Cauble. (Needless to say, this column does not lend itself to questions of an urgent nature, which should be attended to by a competent veterinarian.) Best efforts will be made to respond to your questions, time and space allowing. As is always stated in these situations, "we cannot respond individually to each question".

Monitor-ing Medicine also provides a forum for you to share your experiences. Have you had a successful (or otherwise) bout with disease in one of your varanids? What treatment/action was taken? What was the result? For example, I currently have a *V. rudicollis* undergoing treatment. When I received her, she was emaciated, regurgitated all food, had an advanced stage of mouthrot (infectious stomatitis) and harbored a myriad of intestinal parasites. Her medication schedule and progress is being charted and will be presented in a future issue of VaraNews.

I would like to preface Dr. Cauble's debut in VaraNews with a paragraph from an article by Richard Funk, DVM, entitled "Herp Health Hints and Husbandry: Parasiticide Dosages for Captive Amphibians and Reptiles, appearing in the Bulletin of the Chicago Herp Society, 23(2):30, Feb 1988.

The control of parasites in captive amphibians and reptiles is of utmost importance in any properly managed collection. Yet this is one aspect of husbandry that is all too often neglected. Most wild-caught specimens may be presumed to harbor one or more parasitic infections. And although an animal that has been acquired is represented as having been captive bred and reared, it may also harbor parasites because: (1) the animal may in fact not have been captive-produced; (2) some parasites may be acquired from maternal routes of infection; (3) the animal may have acquired parasites while in your or another collection; or (4) the animal may have been fed wild-captured prey which provided a mode of transmission for parasites.

Routine Laboratory Tests of Monitors

by Chris Cauble, DVM

Periodic or routine laboratory tests of a varanid collection or recently acquired animals is strongly advised. The nature and quantity of tests performed depends on the size, fluctuation and history of the animals. Laboratory tests should only be considered secondary to a thorough physical examination.

The single most important lab test on a reptile is the fecal examination. This is used to evaluate the digestion, diet, bacteria load, urinary tract functionality and parasites in the animal. Fortunately, the fecal analysis is one of the easiest or least expensive screening test for reptiles. One must be familiar with the normal diet and digestion of the species being evaluated to properly assess the aspects of the fecal examination. Even though not all parasites shed ova or larvae in the feces to be found upon examination, and others appear only inconsistently in the feces, the fecal examination is still the most valuable tool for determining the presence or absence of parasites in the body. The microscopic analysis also can identify poorly digested food particles, excessive mucus, abnormal urates and relative abundance of bacteria. With a good quality 100 power microscope, you can learn to perform fecal examinations at home.

Bacterial cultures are helpful to identify germs carried by individuals. Some varanids can carry bacteria, such as *Salmonella*; without any apparent problems, and spread the germs to another varanid which may succumb to the disease and die. For this reason, routine cultures of newly acquired individuals is recommended if they are to be introduced to a stable collection. The choanal slit in the roof of the mouth and the cloaca under the tail are the culture sites for screening for respiratory and digestive system diseases, respectively. Periodic cultures of a stable collection may not be necessary unless illness is apparent. Some may find cultures cost prohibitive, for it is generally more expensive than other tests, such as the fecal examination. It is not practical for most people to perform cultures at home due to the required equipment and supplies.

Blood tests are often beneficial. Many different tests can be performed on blood samples. The relatively inexpensive microhematocrit requires only a few drops of blood, and reveals the monitor's hydration status, red blood cell count to determine the presence of anemia, and is a rough indicator of white blood cell count which indicates the presence or absence of infections. The microhematocrit can often be performed in the veterinarian's office with results in less than ten minutes. Larger quantities of blood are required for panels and profiles which indicate more specific information about the lizard's organs, blood cells, electrolyte balance, nutrition and internal problems. The microhematocrit is usually sufficient for the screening of new animals, with the profiles being necessary when illness is suspected.

Cytology and microscopy are quick and usually simple tests that can be performed at home with a good microscope or at the veterinarian's office. Cloacal or throat swabs, as well as stomach lavages collect the parasites and bacteria in these areas. When observed on a slide with a microscope, one can quantitatively evaluate the parasites and bacteria in these areas. Many parasites can be identified, and with proper staining techniques, many bacteria can also be identified. The microscope is also a valuable tool for evaluating discharges from abscesses or wounds, eye infections and abnormal shed skin.

Summary

The fecal examination is perhaps the single most important test to perform on newly acquired specimens. The cultures and blood tests are very beneficial, but often not feasible to run routinely. Many other specific tests may be performed under special circumstances or with diseased animals.

Veterinarian Recommendations

Dr. Cauble and staff also make housecalls for sick reptiles and amphibians out of their Glendale, CA-based Mobile Vet Clinic, (818) 242-5576. (Full service outpatient medical clinics are also held the first Thursday of each month at a local herp supplier.)

Scott Oggeri would like to recommend a veterinarian for people in the NY area. Scott also had a couple of monitors with giardia, which the good doctor identified and treated.

Dr. Krasnoff, 691 Glen Cove Rd.,
Glen Head NY 11545 (516) 674-3322

Ads / Notices

Reasonable-length line ads are free and should relate to the audience of this newsletter. Ads/notices will be included as space allows. Varanix is not responsible for the quality of merchandise advertised and reserves the right to refuse any ad deemed inappropriate. Consumers are encouraged to inform Varanix of their satisfaction or dissatisfaction with a product or service. Your comments will remain confidential.

Varanix Coffee Mugs

On one side is the Varanix logo in black with the monitor in green. The other side has the text piece shown below, with all characters in black except the first letter of each species, which will be in the same green as the monitor in the logo.

COST: $5.95 per cup. S&H: Add $3.50 for the first cup and $1.50 for each additional cup. Please allow 3-4 weeks for delivery. (These shipping rates are for the US only. Overseas rates appear to start at about twice the cost of the cup itself. Contact Varanix if you are still interested.)

100% of the profit is used to fund projects and expenses of Varanix.

komodoensismertensiprasinusvariusexanthematicuspanoptes
rudicollisindicusglauertisalvadorikordensismitchelli
acanthurusprimordiusdumerilliiflavescensrosenbergi
timorensisbrevicaudagiganteusgleboplamaspenceri
albigulariscaudolineatusniloticusolivaceusgriseus
tristiskingorumsemiremexgouldiisalvatoreremiusgilleni
karlschmidtiocellatusnebulosustorribengalensispunctatus

§ WANTED §

1.1 Argentine black and white tegus, *Tupinambis teguixin*, for captive breeding. Specimens must be healthy and flawless. Joel Shaner (804) 847-7964.

Information on Dumeril's (*V. dumerili*) or black roughneck (*V. rudicollis*) monitors. Also information on incubation of monitor eggs, such as temperature, humidity, substrate, reports on successful/unsuccessful hatchings. Mike Fost, Zoo Atlanta Reptile House, 800 Cherokee Ave., SE, Atlanta GA 30315-1440. (404)987-3933

§ PUBLICATIONS §

Write or call for a free booklist from the following vendors unless otherwise noted.

1991 Animal Directory of the U. S. A listing of 1200+ breeders/dealers of domestic & exotic animals, equipment & supplies. $19.95. Free ad listing w/purchase. FAUNA CLASSIFIEDS, 555 Vista Rio Court, Woodbridge, CA 95258

Herpetology Books - Paul Gritis, 1731 W. Market #12, Bethehem, PA 18018 USA (215) 867-9723

Herpetological Booksellers, Goodwill Lane, Holbrook, NY 11741 USA. tel. (516) 585-6539, fax (516) 585-6115

§ ANACONDA to ZOOXANTHELLA §

To contact another member about other herps or ?, you are invited to leave a notice here.

Mark Bayless is working on a study of the African monitors *V. exanthematicus* and *V. albigularis*. The purpose of the study is to improve husbandry techniques. Mark Bayless, 1406 Holly St., Berkeley, CA 94703, or call (510) 527 3744

Please give me a call if you are going on any field collecting trips. Steve J. Upton, Div. of Biology, Kansas St. Univ., Manhattan, KS 66506 (913) 532-6639

Varanix
8726D S. Sepulveda Bl. #243
Los Angeles, CA 90045
USA

stamp

printed on 100% post-consumer recycled paper