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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.

Right to it ...

Translations: Die Familie der Warane

The copy of Merten's "Die Familie der Warane" has been received and the first 15 or so pages have been sent to the translator. This was primarily done to verify interest on the translator's part and gauge the quality of the translation.

The primary translator (a retired German national with available time) charges $5 per translated page and is willing to do at least 10 pages/week. Even at this phenomenally low rate ($30 - 40 per 1000 words, approx. 2 pages, is even considered a fair rate), it's going to cost a few bucks. And as the translator is not a herpetologist, the "bulk" translation will have to be reviewed from a technical point of view. Then there's printing, etc.

If this project interests you, put on your thinking cap in search of ways to help it all come together... technical review, creative financing, etc. (The only fundraising project currently coming to fruition is the sale of coffee cups with the Varanix logo and another piece of artwork. This is detailed elsewhere in the newsletter.)

Once all other details (e.g., necessary authorizations) are worked out, it'll be full steam ahead. More next time...

Stress and Habitat Design

Every living creature existing today is still here because of its species ability to adapt to its environment and find its place in a complex ecosystem. Well before *Homo sapiens* arrived on the scene, our captive varanids' ancestors were carving our their respective niches and developing the necessary instincts to survive in their natural habitat. Generation after generation, the survivors passed this "information" on to their offspring.

Eh boom! We abruptly remove them from their homeland, pack 'em up and transport them across the seas. As if this wasn't stressful enough, many of the animals who happen to survive end up in the unnatural surroundings of an improperly furnished cage with little/no heat, too much/too little humidity and no hiding/resting spot. The following paragraph sums up the stress situation in captive reptiles:

> *What kind of stresses do reptiles have? Like humans, reptiles are subject to both physical and mental stresses. The most common physical stress on reptiles is probably inadequate environmental temperatures. To prevent physical stress in reptiles, it is important to understand each species and its natural history. The general habitat of an animal, such as desert or tropical forest, is important to know, but in addition it is equally important to know how the animal uses the habitat.*

De Nardo DVM, D. 1990. Stress: A real but not well understood phenomenon. *The Vivarium* 2(5):25-29.

Dr. DeNardo raises an important aspect of captive care that is often overlooked. It is as important to satisfy a captive's psychological needs as its physical needs. (Dr. DeNardo's article provides an excellent explanation of the physiological effects on the body of a stressed animal. A cause & remedy discussion on stress in the captive environment is also included. This article alone is worth the price of the back issue: Contact AFH, P.O. Box 1131, Lakeside, CA 92040. Request *The Vivarium*, Volume 2 Number 5)

How can one reduce psychological stress in the captive environment?

To begin with, the enclosure must provide a sense of security. Start by making three of the four habitat sides opaque. (How many of you feel insecure sitting with your back to the open in public places, preferring to sit with your back to a wall? Or, is this an Italian genetic trait?) Then, provide an appropriate, secure shelter to which the inhabitant can retreat and hide in when threatened. Consider a monitor whose preferred safe spot in the wild is a river or tree. It may not feel as secure when forced to hide in an artificial cave. (Worse than "inappropriate" is, of course, no shelter.) Most reptiles also prefer a "snug fit". In a larger habitat, this can be demonstrated by

setting up various size hiding spots and observing that which the inhabitant prefers.

In general, one would ideally re-create a captive environment identical to the varanid's homeland; no short order! In order to undertake such a task, we need to know something about the local geography. And what about the other animals that share the same natural habitat, especially the food resources? What type of vegetation is there and are there any plants suitable for captive enclosures?

To this end, you are requested to share your knowledge of the natural habitat for a species: geography, temperature/humidity ranges, preferred hiding/resting place. Let other readers know about any videos/documentaries offering a look at varanids in their natural habitats, and also where the videos could be found. (Robert Sprackland wrote in some time ago to say the BBC has produced a video entitled "Enter the Dragons".)

It's one thing to knowing what an animal's environmental requirements are; it's another thing to recreate a slice of the wild . From the start, habitat size is important, as the most commonly kept captive varanids (*V. exanthematicus, V. niloticus, V. salvator*) grow relatively large. Unfortunately, large, properly-equipped custom habitats can be expensive to build. One of the goals of this newsletter, and organization, is to provide readers with workable, economical (when possible) solutions to meet the physical and psychological needs of captive varanids.

Send in any notes, sketches, etc. you have on any aspect of habitat design, for both indoor and outdoor enclosures. Guarantee: An eager audience awaits your helpful hints on habitats & husbandry.

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.

Heating Large Habitats

One reader specifically asked: "*Is information going to be made available on better ways to heat large cages safely?*" I would like to offer the following description of a setup I use in a 6 x 12 x 6.5 foot plexiglas and wood indoor enclosure. The heating system is comprised of a forced-air heater, a length of 8-inch diameter flexible aluminum heating duct, a couple of 8-inch diameter aluminum manifolds/flanges and some assorted hardware (screws, tape, etc.).

(The following discussion is intended to provide a habitat heating alternative to people experienced working with electricity. If you are unsure about installing such a setup, get the help of an experienced individual.)

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.

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

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

Editorial Review Board: Frank Braun

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The heater (Sears brand in the $40 range) has a circular coiled heating element (wire) and fan. It can operate at 750 or 1500 watts; the 750W setting is used. The contact-type thermostat was removed from the unit and placed in the top of the habitat with the adjustment accessible outside the cage. As this inexpensive (cheap) unit has no marked settings, adjustment is accomplished over a short period of time with the aid of a thermometer hanging on the opposite side of the habitat, near the top. (There are new electronic climate control systems entering the market. This type of thermostat should be more efficient, reliable and precise than the contact-type units which must be periodically checked, filed and adjusted. If you are familiar with these new units, you are invited to submit a discussion of their use, cost, where-to-buy, etc.) On/off operation is controlled by a timer.

Electric wire was run from the thermostat down to the heater. This connection was made as short as possible. The longer the wire, the heavier gauge (thicker) the wire must be. This is to allow the current to flow "unrestricted". (Once the connection is made and the heater is running for a few minutes, if you grip the wire and it feels warm, the wire gauge is too narrow/thin.)

It's as important to use the proper electrical connectors when splicing the wire between the thermostat and the heating unit; a simple "twist 'n tape" is usually not sufficient. (When the unit is in operation, you will feel this type connection get quite hot.) The proper crimp-type connectors will suffice.

The heater itself is positioned under the habitat (the floor of which is 18-in above ground level) allowing heat to rise into the cage into one of the hiding spots, under one end of a 2-3 by 4 ft piece of flagstone securely supported 10-in above the habitat floor. (This meets the previously discussed "snug fit" criteria.) The stone retains some of the heat and at the same time offers a slight temperature gradient across its surface due to its size. (The inhabitant often sleeps over the inlet, getting the first morning warmth when the heater comes on. Throughout the day, he can be observed in different places around the "hot" spot, retiring to the water tank on the other side of the habitat to cool off.)

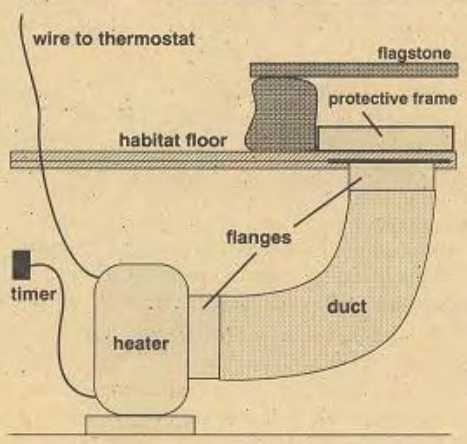
The aluminum flanges are at least as large in diameter as the face of the heating unit; one attaches to the heater, the other to the habitat inlet. (The flanges and duct can be found at any hardware store.) The heater flange is cylindrical, 3-4 inches tall with a 1 inch lip around the base. This lip was shaped to fit over the face of the heater. (Select the type of flange which best suits the heater; there are many to choose from.) It is attached with a few screws and duct tape.

The habitat floor flange has a square, flat base which extends out about 2 inches. From inside the habitat, it is set in an 8-in diameter hole drilled in the floor. Heavy-gauge wire screen covers the inlet to prevent escape. (As the habitat floor consists of two sheets of 1/2-in plywood, the flange base and screen are set between the two layers. This prevents the lizard from making direct contact with the sharp edges.) A 12-in square, 4-in tall smooth wooden frame is placed on the cage floor around the inlet. When the inhabitant lies across this, he is kept off and above the inlet itself. Otherwise, he would "smother" it, creating backpressure on the heater (see note of caution below).

Underneath the cage, the duct is connected to both flanges by a couple of metal screws. The duct comes horizontally off the face of the heater, bends 90 degrees and rises vertically to the floor flange. This conveniently keeps any debris (e.g., dirt, feces) from plopping directly into the heater. I periodically inspect the duct for debris, though I have never found much. It is also best to minimize the total length of the duct; this, too, reduces backpressure on the heating unit.

Keep the area around the heater as open and clean as possible to provide adequate ventilation and avoid overheating. As with any electrical system, it is important to perform periodic checks and maintenance. The heater itself should be cleaned as required. Grimy dust tends to accumulate on the heating element and fan, making it less efficient and prone to overheating.

NOTE OF CAUTION: **It is important that the heat inlet to the habitat not be obstructed**. Any restriction of the incoming heated air creates backpressure on the heater and could result in overheating. These heaters typically have (they should have!) a "failsafe" circuit that prevents meltdown, automatically shutting the unit off if internal temperature becomes excessive. If your heater is making use of this safety feature, correct the problem immediately!



Publications

This is where books, magazines, newsletter articles, etc. of interest to Varanix members will be presented and discussed. Many people are looking for a source of good literature about varanids. If you know of any good publications, send in the title, author, publisher and publication date/issue and comments on the publication's focus.

Varanus salvator (and *Varanus indicus*, too)

If water monitors are your fancy, the next three pages should interest you. First, Harry Andrews of the Madras Crocodile Bank took a break from tending 3000 croc eggs to share some *salvator* news.

> *Our* salvators *are doing rather too well, I must say. We had 100% hatch success this year and very healthy stock. To top it all, we now have the first record of two year old* salvators *breeding, being the second generation of young born at the Bank. This has never been reported before, either in captivity or in the wild."*

Two articles follow. One is a reprint of an article by Pete Strimple which originally appeared in The Forked Tongue, the newsletter of the Greater Cincinnati Herpetological Society. The second offering is an original article by Michael Balsai on *V. salvator* and *V. indicus*. Both authors are known for their extensive studies and published works on monitor lizards.

The Water (Malayan) Monitor, *Varanus salvator*

by Pete Strimple

Monitors belong to the family Varanidae which is made up of the single genus *Varanus*, containing some 30 species. The family name Varanidae comes from the Arabic word "ouran" which is their name for the Nile monitor, *Varanus niloticus*. Monitors are Old World animals and are found throughout most of Africa, east through south and southeastern Asia, Malaysia, Indonesia, the Philippines, New Guinea and Australia. They are absent from Madagascar, Tasmania, and New Zealand.

The family Varanidae is best known for its giant, the Komodo dragon, *Varanus komodoensis*, with a maximum length of about 10 feet. There are a few other monitors that also attain a rather large size, including the Perentie (*Varanus giganteus*) from Australia and the Water, or Malayan, monitor (*Varanus salvator*) discussed below. The Perentie rivals the Malayan monitor in size, or so some herpetologists believe. There are reports of Perenties measuring slightly over 8 feet in total length, while the maximum length for the Malayan monitor is believed to be 8 feet.

While some of the monitors are truly "giants", many people don't realize that most of the monitors don't exceed 6 feet in total length. Moreover, there are a few species that rarely, if ever, exceed 15 inches in total length. A few examples are the Short-tailed monitor, *Varanus brevicauda* (which is the smallest monitor), *Varanus caudolineatus*, and the Pygmy Mulga monitor, *Varanus gilleni*, all three being found in Australia.

Monitors are rather elongated lizards with well-developed limbs which make many of the species excellent climbers. The tail is also useful, helping monitors become especially good swimmers, the water monitor being a good example.

Varanus salvator

Range

The water monitor is found on Sri Lanka (Ceylon), in northeast India, east through southern China and southeast Asia, south through Malaysia and Indonesia, and to the east in the Philippines. It is absent from New Guinea and Australia. This lizard goes by several native names; in Ceylon, it is called the *kabara-goya*, and in Malaya it is known as *biawak*.

Habitat

Throughout its range, *Varanus salvator* is rarely found far from water. It can be found in tropical lowlands, humid forests, mangroves, stream and river banks, coastal canals and river deltas. It is quite a good swimmer and is sometimes found swimming far out at sea.

Size

Varanus salvator is generally considered to be the second largest of the monitors with a maximum length of 8 feet. Most adults, however, are smaller with an average length between 4-6 feet, but 7-foot specimens are not uncommon.

Description

Adult water monitors have a rather heavy build, with a long tail that is usually one and a half times the body length. The ground color is generally black or dark gray with a series of crossbands (sometimes obscure) composed of whitish or yellow circles. The snout is banded or ringed with black and yellow, as is the tail. The belly is lighter than the ground color and is typically yellowish. Older specimens frequently have less distinct markings on the body and tail, and may appear as a large grayish lizard.

Food

Like most monitors, the water monitor is carnivorous, eating anything that it can catch. Juveniles feed on insects, mollusks, crustaceans, frogs, fish and newborn rodents. As they grow larger they will eat snakes, birds, eggs (bird and reptile), lizards and small mammals. Fully grown adults eat birds, mammals and carrion.

Reproduction

Female water monitors are generally mature enough to breed in three to five years. They normally lay their eggs during the beginning of the rainy season (June), thereby providing them with the moist conditions needed to develop and hatch. An average clutch may contain between one to two dozen eggs, although a large female could lay as many as three dozen, perhaps more. These eggs are whitish in color and are about three inches in length. They are frequently deposited in holes in the bank of a river, or in hollow trees along the river's edge. The incubation period is rather long, and some eggs may require up to five or six months to hatch, although the average is probably shorter.

On hatching, young water monitors are quite attractive little lizards averaging around a foot or so in total length. The ground color is black with a contrasting banded pattern of yellow spots. The snout is lighter in coloration with the black and yellow rings standing out quite vividly. There is also a black streak, bordered by yellow, that extends posteriorly from the eye. The belly coloration is whitish or yellow.

Disposition

Juvenile water monitors may tend to be aggressive at first, but with careful handling they will usually tame down in captivity. Large adults that have been in captivity for a while have actually been known to leave their cage when opened and cling to their keeper in "a manner suggesting an embrace" (Ditmars; Reptiles of the World, 1938). This was the case with a specimen that was kept in the reptile house at the Bronx Zoo. However, when this monitor, and its cage mates, were moved to an outdoor exhibit for the summer, a complete change in temperament was brought about. These monitors would hiss loudly at their keeper and lash out at him with their tails. When they were brought back inside for the winter they quickly tamed down to a docile state.

No matter how tame one of these large lizards may seem, one should be aware that serious injuries can be delivered from their powerful jaws and sharp teeth, as well as from their strong, sharp claws. Even their tail can inflict painful welts if one does not move out of the way in time.

EDITOR'S NOTE: This article appeared in the October 1983 issue of The Forked Tongue. Now, eight years later, discussion of "largest size" also includes the crocodile monitor, *Varanus salvadorii*, considered to be the monitor lizard achieving the greatest total length.

Two Wide Ranging "Asian" Monitors

by Michael J. Balsai

Two of the widest ranging monitor species in Asia are the common water monitor, *Varanus salvator*, and the mangrove monitor, *Varanus indicus*. Together, they constitute a large percentage of the varanids that one might encounter in tropical Asia. It is also interesting to note that where one species is found, the other normally is not. The reasons for this are not known.

Both of these species are among the most beautifully colored (depending on the color morph for *V. salvator*) in all of tropical Asia, and both make interesting captives that require similar captive maintenance conditions. Examination of the ranges and lifestyles of these two species should provide an interesting exercise in Asian varanid ecology and biogeography. This article will begin in the eastern Pacific and work west.

Varanus indicus

Varanus indicus is found in the following places: New Guinea, North Australia, Timor, Caroline Islands, Marshall Islands, Mariana Islands, and the Solomon Islands. Most, if not all the *V. indicus* entering the pet trade in the USA are coming out of the Solomon Islands, and have been "commonly" available as specimens for about 2 years now. In the Solomons, this lizard is found on: Bougainville, Shortlands, Rendova, Isabel Island, Guadalcanal, Nggela, Savo, Malaita, Rennell, San Cristobel, Ugi, Olu Malau, Kolombangara, and Gizo. Mertens (1942) claims that an endemic subspecies, *V. i. spinulosus*, occurs on San Jorge Island (which is near Isabel Island). Two other subspecies are recognized, *V. i. indicus*, the most widely distributed, and *V. i. kalabeck* in New Guinea. All these subspecies are distinguished by differences in the appearance of their neck scales. *V. i. spinulosus* has fine spike-like nuchal scales, *V. i. indicus* has somewhat closely apposed smooth neck scales, and *V. i. kalabeck* has nuchal scales that are widely separated from each other, and are very small and slightly keeled.

Varanus indicus has a distinctive appearance. They are, for the most part, black, blackish-olive or dark purplish-brown with (usually) small yellow, cream, yellow-green, or sometimes greenish-blue spots on the dorsal side. Ventrally, they are cream, yellow, very light green, or white. The tip of the snout and "lips" are usually orange-pink. They are about 0.5 meters SVL, with a total length of about 1 to 1.2 meters. A really big fellow might get to a total length of about 2 meters, though this is very uncommon. The eye is large and about midway between the nostril and ear. Their heads are rather large and elongate, and their tails are highly keeled. *V. indicus* is equipped with powerful jaws and formidable claws.

This animal takes mostly vertebrate food as an adult. As a juvenile, it eats skinks, insects and other arthropods. It is active diurnally and favors tidal/esturine mangrove, monsoon vine forest, rainforests, and tidal river/stream habitats. This monitor likes semi-open areas as well, and prefers coconut forests on some of the smaller Solomon Islands. It can usually be found basking on branches overhanging water and shelters in hollow limbs and trunks. Interestingly, this lizard will either dive into the water (usually) or climb higher when disturbed (occasionally). *V. indicus* lays its eggs under decaying vegetation on the ground or in rotting timber on or above the ground. Up to eight eggs may be deposited.

This species does very well as a captive, but as most specimens are wild caught adults, they are somewhat "skittish". I find them to be shy and they spend the majority of their time hidden under the substrate. Despite this, they are one of my favorite species; I presently keep four specimens.

V. indicus likes warm somewhat humid conditions and appreciates a place to swim. They will also climb when given the opportunity. I use a newspaper substrate and very large aquaria to house my specimens, and I recommend keeping them separated. They are voracious eaters and I feed my specimens "prekilled" mice and occasionally baby chickens.

Varanus salvator

Varanus salvator inhabits areas west of those of *V. indicus*. It is found in the following places: the Philippines, Indonesia (including the Komodo islands), Sumatra, Borneo, Celebes, Sri Lanka, the Andaman Islands, Burma, Thailand, Malaysia, and most other parts of Indo-China, southern China, the Nicobar Islands, and extreme northeast India in the areas of Orissa, Bengal, Bangladesh. *V. salvator* is also found in eastern India, particularly in the Himalayas area. It was mentioned by Cogger (1986) that this species was known from a single "doubtful record from the tip of Cape York Peninsula". My suspicion is that this record may have been for an animal that had somehow been carried there from its normal home, perhaps transported there on floating tree parts after a storm. In actuality, I believe this lizard does not normally occur anywhere in the Austral-New Guinea area, eastwards.

Varanus salvator was split by Mertens into six subspecies: *V. s. salvator*, *V. s. cumingi*, *V. s. togianus*, *V. s. marmoratus*, *V. s. nuchalis*, and *V. s. scutigerulus*. Again, the subspecies are largely distinguished by differences in neck scales, and also differences in the number of ventral cross rows and color patterns. The subspecies *cumingi*, *marmoratus*, and *nuchalis*, are found on various islands of the Philippines. The *togianus* subspecies is found in Celebes and the surrounding islands (including parts of Komodo). *V. s. scutigerulus* is found mostly in Borneo, and the *salvator* subspecies is found throughout the rest of the range. It is interesting to note that most authorities consider *V. salvator* to be, perhaps, the most "primitive" of all the living monitors. It is also believed that *V. indicus* may have evolved from *V. salvator* or some close common ancestor.

V. salvator is reasonably easily distinguished from *V. indicus*, by its larger size (as an adult) and by color. For the most part, these monitors are brownish-black with five rows of crossbands (usually very bright in young animals) consisting of yellowish white spots. The feet and tail are spotted and/or striped in whitish yellow as well. Some specimens show a lovely yellow banding across the jaws and *V. s. cumingi* may have quite a bit of yellow on the head. The belly is largely whitish-yellow and there may be some black spots on the underside of the neck. A yellow band may run down the side of the neck from behind the eye across the ear almost to the forelimb. *V. salvator* adults usually show significant fading of the stripes and spots across the dorsal side as they mature, with some old adults looking to be largely black on top.

This species can reach lengths of two meters, with really big specimens measuring in at 2.5 meters! The larger animals can weigh 14+ kg, whereas the smaller ones may weigh about 8+ kg. These lizards also have strong jaws, formidable claws and a highly keeled tail. By the way, do not confuse the appearance of this species with *V. niloticus*. The latter has its nostrils located about midway and laterally between the snout and eye, while *V. salvator* has its nostrils close to the tip of its nose.

These monitors also love water (obviously) and are even at home in salt water (like *V. indicus*). *V. salvator* likes to frequent trees and other vegetation along rivers and estuaries. In settled areas, they can be found in rice paddies. They will readily climb trees and seem to prefer to sleep on bushes overhanging water or in burrows that were excavated along the stream (or whatever body of water) bank. This lizard is reported to lay as many as 25 to 30 eggs, depositing them in holes in trees or along the banks of bodies of water, and sometimes even in termite nests.

In the wild this lizard dines on a wide variety of food. The diet includes crustaceans found along the banks at low tide, flying squirrels, rodents and other mammals, dung beetles and other insects, lizards, frogs, crocodile eggs and young, fish, birds, tortoises and turtles and their eggs, snakes, snails and other mollusks, and, of course, carrion. In captivity, they are hearty eaters and I usually feed them on pre-killed mice, small rats, and baby chickens. One specimen, weighing 1.8 kg, had eaten a mouse deer that was probably over 50% of its own weight!

Captive *V. salvator* like a very warm humid environment, similar to *V. indicus*. I use a newspaper substrate for my specimens and very large cages; even some of the "take-apart" dog kennels with very close bars are good. The largest Neodesha® cages might serve, as well. It is always worth considering specially built quarters. I also provide tubs of water for the lizards to soak and large branches for those who enjoy climbing.

These lizards usually tame well if obtained small and handled frequently and gently. However, it was noted by Ditmars (1933) that if tame specimens are housed outside, they may become "wild" and aggressive. Bringing them indoors can apparently restore tranquility in a fairly short time.

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Coffee Cups

There has been enough initial interest to move ahead with this fundraiser. One hundred cups will be made. Each white coffee cup will have 2 pieces of artwork. On one side is the Varanix logo in black with the monitor in green. The other side will have 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.

The price is $6.95 per cup. SHIPPING AND HANDLING: Add $3.50 for the first cup and $1.50 for each additional cup. Please allow 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 of Varanix (of which the most visible is the Mertens translation).

komodoensismertensiprasinusvariusexanthematicuspanoptes
rudicollisindicusglauertisalvadoriikordensismitchelli
acanthurusprimordiusdumeriliiflavescensrosenbergi
timorensisbrevicaudagiganteusglebopalmaspenceri
albigulariscaudolineatusniloticusolivaceusgriseus
tristiskingorumsemiremexgouldiisalvatoreremiusgilleni
karlschmidtiocellatusnebulosustorriibengalensispunctatus

Ads / Notices

Reasonable-length line ads are free and should relate to the intended audience of this newsletter. 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/service. Your comments will remain confidential and on record.

Phylogenetic Review of Varanidae and You

Robert Sprackland is engaged in a review of the monitor lizard family and is looking for slides/photos of unusual, live varanids. The photos are for use as references in his study and are not intended for publication at this time. Please indicate any conditions under which they are being provided. Dr. Sprackland will arrange to have slides copied and returned to you. (Of course, donations of photos/slides are most welcome.) Address all correspondence to:

Robert Sprackland
California Academy of Sciences, Dept. of Herpetology
Golden Gate Park
San Francisco, CA 94118.

§ BOOKS §

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

1991 Animal Directory of the United Stated: A listing of over 1200 breeders/dealers of domestic & exotic mammals, birds, reptiles, amphibians, fish, invertebrates, wholesalers, equipment & supplies. $19.95. Free ad listing with 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

§ FOR SALE §

Pricelists from the following dealers included the varanids listed. Contact the vendor for pricing.

Gulf Coast Reptiles, Inc. 12710-2 McGregor Blvd., Fort Myers, FL 33919. tel. (813) 433-5525, fax (813) 433-3156 The Aug 91 list included: East African White Throat (V. exanthematicus ssp.), 3-4 ft; V. exanthematicus, 1-2 ft; V. niloticus, 2-3 ft.

QVFMR, 6850 Cleveland Drive, Punta Gorda, FL 33982. tel/fax (813) 575-1775.The Aug 91 list had the following monitors: Baby savannah & Nile, Black tree, Crocodile.

§ WANTED §

The following varanids for captive breeding: 1.0 V. niloticus, 0.1 V. salvator (both 4+ ft TL), 1.0 V. indicus (3+ ft TL). Leave msg. and I will return call. Bill Moss (612) 488-1383.

Good quality color transparencies of *V. karlschmidti*, *V. indicus spinulosus*, *V. griseus* in the Middle East, Africa and Pakistan/India. (Limited photo budget.) Daniel Bennett, 118 Sheffield Road, Glossop, Derbyshire SK13 8QU, Great Britain

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