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

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FROM THE EDITOR

EXCITING TIMES

BY JOHN HOGSTON



The fascination with reptiles as mainstream pets is growing every day. People are becoming accustomed to seeing prehistoric looking critters at their local pet shop. Monitor lizards are included in the new wave of "exotic" pets. Monitors, especially Savannah and Nile monitors, are sold in large numbers every year.

These are exciting times as interest in monitor lizards is growing rapidly. Many of the old vanguard of "snake guys" are turning to varanids as a source of enjoyment. In the soft science of herpetoculture there's arising a new breed; the Varanophile. These are people who live and breathe monitor lizards. They just can't get enough!

With the increasing popularity of monitors there is also an increased need for responsibility. Responsibility of the pet store personnel to educate their customers on what's involved in keeping monitor lizards, and the responsibility of the customer to make sure they learn all that they can about their potential pet. It is also the responsibility of the varanid keeper to respect the inherent fear that some people hold for reptiles, especially if one intends to take his or her animal out in public!

Ultimately, it is our responsibility as varanophiles and herpetoculturists to make sure our local pet shops are informed so in turn they can provide proper information to their customers. In that vain, N.O.V.A. has compiled species-specific care sheets which will appear in various issues of *DRAGON NEWS*. These care sheets can be copied and offered by members to their local pet shop. In turn, the store can make these sheets available to their monitor lizard customers or potential customers. **IT IS IMPORTANT THAT POTENTIAL MONITOR LIZARD KEEPERS KNOW WHAT THEY ARE GETTING IN TO.**

Let's make the experience of keeping monitor lizards truly enjoyable. **BE RESPONSIBLE!**

Let us hear from you!

HAPPY MONITORING!



Varanids around the World
Commentary by Mark K. Bayless

In Michigan, a varanophile who wishes to remain anonymous, experienced a sad lesson regarding his Argus monitor lizard (*Varanus gouldi panoptes*). In searching the surrounding grounds of his home, he collected some toads (*Bufo americanus*), crickets (sp.-?) and grasshoppers (probably *Brachystola magna*) to feed to his two subadult argus monitor lizards (2.0). The crickets and grasshoppers were quickly dispatched, as expected. The larger male quickly ingested the small toad. Within seconds of ingesting the toad, the lizard vomited up the crickets it had eaten, followed by the (dead) toad. The lizard then went into a seizure, convulsions, rolling, frothing at the mouth, and died within 15 seconds of ingesting the small toad. The other monitor lizard did not prey upon the toad, and hence, is in good health.

The mangrove monitor lizard (*V. indicus*) has been known to succumb to ingesting the marine toad (*Bufo marinus*) in the Caroline Islands (Uchida, 1967). Only the Philippine water monitor (*V. salvator nuchalis*) has been reported to successfully ingest the marine toad with no side-effects (Alcala, 1957).

Becky Speer, a varanophile and zoo keeper in Florida, who has bred the mangrove monitor before (Speer, pers. comm.) got a real surprise when one of her mangrove monitor (*V. indicus*) eggs pipped at opposite ends, and discovered she had 'twins! Unfortunately, the babies died within an hour of pipping their egg. On further inspection, it was discovered that both babies were attached to a single yolk. 'Twins' is a common enough event in snakes and sometimes turtles, but this is the first time this has occurred in monitor lizards.

Thanks to K.B. and Becky Speer for sharing this with me.

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Uchida, T. 1967. Observations on the monitor lizard, *Varanus indicus* as a rat control agent in Ifaluk, West Caroline Islands. *Micronesica* 3(1):17-18.



CARE SHEET FOR THE NILE MONITOR (*Varanus niloticus* ssp. Linnaeus, 1766)

HISTORY

The Nile monitor was first described by Swedish naturalist Carl Linnaeus in 1766.

DISTRIBUTION

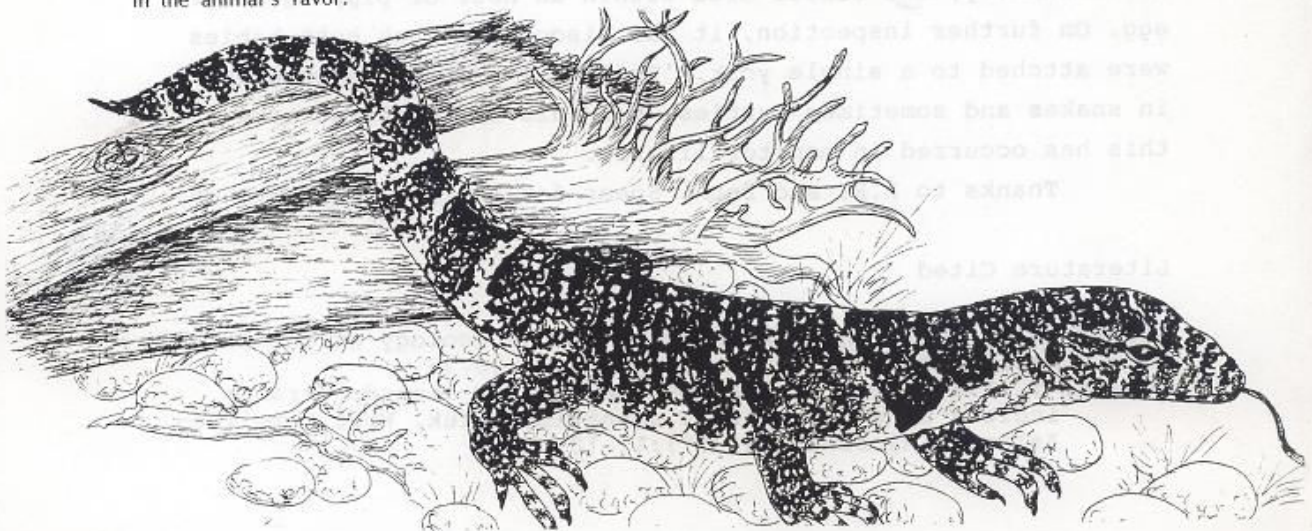
The Nile monitor is found in most of Africa, in 33 countries from Senegal to Somalia and Egypt to south Africa. Although most of its range is sub-saharan, it is also found throughout the Nile River valley, very often found living near streams or slow moving rivers.

DESCRIPTION

Nile monitors are generally olive-green to black with yellow-green to yellow-orange chevrons starting at the base of the skull. The chevrons change into bands or stripes that continue along the back to the base of the tail. Each band is made up of yellow spots (or ocelli), some of which are solid and some with a black dot at the center. The tail is laterally compressed with highly keeled scales. Yellow and black patches alternate down the tail length. Nile monitors also have a dark stripe that runs from behind the eye. There are three noticeable differences between the common Nile, *V. n. niloticus*, and the Ornate Nile, *V. n. ornatus*. From shoulders to hip the common Nile has seven bands and the Ornate has five. The common Nile typically has a dark blue-black tongue and the Ornate's is usually pink with sometimes a reddish or purple tint. The last difference is in the skull structure. The lower jaw bone in the common Nile is thin in construction, which gives this monitor's skull a narrow, wedgelike appearance. The Ornate Nile has a wider and more powerfully built lower jaw bone. This gives the Ornate's head an almost blunt or box-like appearance.

HOUSING

Nile monitors should have an enclosure as large as space will allow. Juveniles can be maintained in an enclosure approximately the size of a 40 gallon aquarium to allow for the rapid growth in the animals first year or so of life. Adult Nile monitors will do well in an enclosure approximately 1.5 to 2 times the length of the animal. The enclosure must also be deep enough to allow the monitor to turn completely around. A minimum of 24 inches of vertical space should be provided for the monitor. When dealing with Nile monitors, or any monitor, it's always better to err in the animal's favor.



SUBSTRATE AND CAGE FURNITURE

Nile monitor enclosures can be lined with any number of materials. Newspaper is inexpensive and easy to remove and replace. Topsoil, non-cedar wood mulch and pine bark nuggets may also be used, but are more difficult to keep clean and take more time to maintain. A sturdy water bowl that the animal can't easily tip over should be provided at all times. Nile monitors will often defecate in the water. It is very important to keep the monitor's water clean! Change the water at least once a day. The enclosure itself should be cleaned or picked-up daily as needed with a good overall cleaning weekly. Sometimes it will be necessary to keep your Nile monitor in another enclosure while you clean its primary cage, because it's difficult to clean with a Nile monitor attached to your skin or clothes! Some sturdy branches and a hide box should be provided as well. Terrestrial monitors dig burrows and usually retreat to these burrows at night or when the animal feels threatened. The hide box can be a large horizontal plastic container with a lid (the deeper the container the better). The box can be filled with non-cedar wood shavings or any number of other materials. The lid should have a hole cut into it to allow the monitor access to its "burrow".

ENVIRONMENTAL CONCERNS

Ambient daytime temperatures for the Nile monitor should be between 85°-95°F with a basking spot temperature of 98°-115°F. Night time temperatures should be between 75°-86°F. These temperatures should be maintained year round. Humidity should be kept in the 70 to 80% range. Misting the cage a couple times a day in the dry winter months can help keep up humidity levels. **NOTE:** Too low humidity can result in shedding problems. Too high humidity can result in skin diseases.

A couple of well placed thermometers and a hydrometer in the enclosure will allow you to keep an eye on temperatures and humidity levels.

Heat can be provided in many ways during the day. The easiest is to maintain a warm room temperature and provide an incandescent light above and outside of the enclosure (wattage will depend on ambient room temp.) as a basking light. A full spectrum fluorescent light will enhance colors and aid in the monitor's ability to metabolize calcium.

ALWAYS REMEMBER TO WASH YOUR HANDS WITH A GOOD ANTIBACTERIAL SOAP AFTER HANDLING YOUR MONITOR OR CAGE FURNISHINGS!!!

TEMPERAMENT

Nile monitors are not for beginners, period! They require a lot of interaction and handling on a daily basis to even have a chance of "taming" them down at all. Juveniles and subadults will usually be the most aggressive. Some Niles will actually grow up to be enjoyable pets. Nile monitors are beautiful animals, but caution and common sense must be used when working with these animals!

HEALTH CONCERNS

Nile monitors make hardy captives. Captive niles will prey on appropriately sized mice and rats, fish (fresh not frozen), insects, crayfish, shrimp, small birds, fertilized eggs, and good quality canned dog or cat food. The poor nutritional non-whole food items should be dusted with some kind of vitamin supplement every other feeding. Juveniles should be offered some food on a daily basis. Adults should be fed twice a week (be careful not to over feed!).

Ticks and internal parasites are common on newly imported animals. Newly acquired monitors should be taken to a competent reptile veterinarian to be examined and treated if necessary.

SEXING

So far, there are no precise sexing methods for monitor lizards. There are however some things you can look for in adult animals. Males are generally more massive compared to females. Males also usually have noticeable hemipenial bulges at the base of the tail. Males will sometimes evert their hemipenes if they become very agitated or while they defecate. Sonograms have been used with a high degree of certainty in determining the sex of an adult monitor lizard.

RECOMMENDED READING

Bartlett, Richard D. and Patricia P. 1996. Monitors, Tegus, and Related Lizards. Barron's educational series, inc. pp 58-60.

Faust, Robert J. and Bayless, Mark K. 1996. Nile Monitors: Ecology, Morphology and Husbandry. Reptiles magazine (November). pp 68-83.

Sprackland, Robert George. 1992. Giant Lizards. TFH publications, inc., Neptune City, N.J.



CONSIDERATIONS

WE NEED SOME FEEDBACK FROM OHIO MEMBERS AS TO WHEN AND WHERE THE NOVEMBER MEETING SHOULD TAKE PLACE!

- N.O.V.A. IS NOW ORGANIZING A VARANID SYMPOSIUM TENTATIVELY SCHEDULED FOR LATE 1998-DETAILS WILL BE IN UPCOMING ISSUES OF D.N. AS AVAILABLE.
- SEND IN THOSE PICTURES!
- LET US KNOW ABOUT YOUR BREEDING SUCCESSES/FAILURES.
- WHAT IS THE FASCINATION WITH MONITOR LIZARDS? LET US KNOW WHAT YOU THINK.

N.O.V.A. WOULD LIKE TO THANK THE FOLLOWING PEOPLE:

- PHIL SAMUELSON FOR THE HERP CLUB PROFILE ON N.O.V.A. IN THE UP-COMING DECEMBER ISSUE OF REPTILES MAGAZINE.
- KELSEY ENGLE AND STEVE IRWIN OF THE QUEENSLAND REPTILE & FAUNA PARK FOR THE FANTASTIC T.M.A.'S AND ARTICLES FOR THE NEWSLETTER AND THEIR EAGERNESS TO PARTICIPATE/CONTRIBUTE!!!!!!
- JOHN ADRAGNA FOR THE ARTWORK FOR THE PARTING SHOT (T-SHIRT?).
- THE COLUMBUS CREW: HELEN BENTON, ANIMAL CARE UNLIMITED.
- KEN MORGAN OF THE COLUMBUS ZOO FOR ALLOWING US TO SHOOT PICTURES OF SOME OF THEIR VARANIDS.

N.O.V.A. WELCOMES NEW MEMBERS:

- JEFF LEMM: CENTER FOR REPRODUCTION OF ENDANGERED SPECIES
- KELSEY ENGLE:QUEENSLAND REPTILE & FAUNA PARK / AUSTRALIA
- ROBERT SPRACKLAND PH.D.
- ALBERT HUISMAN / NETHERLANDS

THE MONITOR LIZARDS OF AFRICA - A PAN AFRICAN CHECKLIST

Part II: ANGOLA

By Mark K. Bayless

As stated in Part I of this series (Dragon News, 1(2) July 1997), I will discuss country by country the monitor lizards that live within the boundaries of the African continent.

Angola

Angola, on the west coast of Africa, south of the equator, has an area of 481,350 square miles, including the exclave of Cabinda (2,810 square miles). Angola is surrounded by the countries of Congo in the north, Zaire in the east, Zambia in the south-east, and Namibia to the south.

Angola's climate varies considerably from the coastal shores of the Atlantic to the central plateau and its interior. In northern Angola, from Cabinda south to Ambriz is a damp tropical climate; along the coast, from Luanda south to Mocamedes is predominantly tropical; with a dry and desert climate in the eastern and south ranges to the border with its adjacent countries. This country experiences two seasons, a dry cool season from June to September, and a rainy, hot season from October to April or May. The average temperature is 68°F, with warmer temperatures along the coast, ^{and} with cooler temperatures in the central interior. The Benguela Current makes the coastal regions arid and semi-arid. Rainfall ranges from 59 inches in

the north-eastern provinces to two inches at Mocamedes in the south.

Thick forests cover the wet regions (especially in Cabinda), with a scrub-savanna vegetation in the drier regions. Endangered species in Angola include the giant sable antelope, black-faced impala and the three species of sea turtle (green, olive ridley and leatherback).

Only two species of monitor lizard are known to Angola, the white-throat monitor (*Varanus albigularis*), and the Nile monitor (*V. niloticus niloticus*). The Nile monitor can be found throughout wet, dry and desert regions where rivers and other sources of permanent water are present. The white-throat monitor is present in drier regions throughout the country, including coastal regions.

I have collected 29 localities for the white-throat monitor, and eight for the Nile monitor in this country. There have been only six Varanus-related papers regarding this Genus and Angolan-herpetological expeditions. The first study of Angolan Varanus-related works was by Jose V.B. Bocage in 1895; seconded by Robert Mertens (1926, 1938); then Albert Monard (1931); Karl P. Schmidt (1933), and more recently by Raymond Laurent (1964). Reports by Jordan (1936) and Parker (1936) give excellent discussions of the terrain and habitats in Angola.

VARANUS TAXONOMY

A white-throat monitor subspecies (*V. albigularis*)

angolensis) was described by K.P. Schmidt in 1933. The primary characteristics distinguishing this form from *V.a. albigularis* is as follows: enlarged scales from the nape to the proximal supracaudals. *V.a. angolensis* is a darker form, when compared to *V.a. albigularis* forms. In addition:

	<u><i>V.a. albigularis</i></u>	<u><i>V.a. angolensis</i></u>
scale count	122-165*	118-136*

* Broadley (pers. comm.)

V.a. angolensis is reported to live in wetter areas (e.g. moist miombo woodlands and forest/savanna habitats) than typical *V.a. albigularis* (e.g. drier miombo woodland, mopane woodlands, Kalahari Acacia wooded grasslands) (Broadley, pers. comm.). Broadley (1991) stated that no races of *V. albigularis* should exist, as there is no correlation with distribution, of the various subspecies (*V.a. albigularis*, *V.a. microstictus*, *V.a. angolensis*, and *V.a. ionidesi*). Bayless and Sprackland (1998, in prep) support Broadley's (1991) opinion, and provide further evidence to support this position.

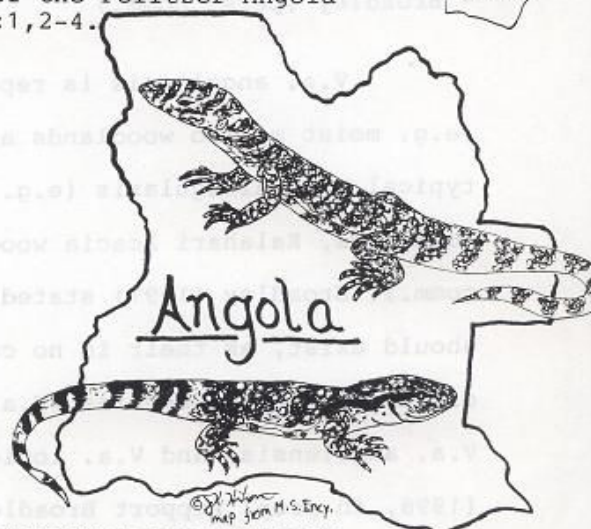
Next in the series is the country of 'Benin'.

I very much appreciate the generous assistance of Dr. Donald Broadley and Dr. Raymond Laurent for their generosity, kindness, and help answering my numerous inquiries.

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- Broadley, Donald G. 1991. A checklist of the Reptiles of Tanzania, with synoptic keys. Syntarsus 1:1-70.
- Jordan, Dr. Karl. 1936. Dr. Karl Jordan's Expedition to South-West Africa and Angola. Novit. Zool. XL(1):17-62.
- Laurent, Raymond F. 1964. Reptiles et Amphibiens de l'Angola. Companhia de Diamantes de Angola, Lisbon.
- Mertens, Robert. 1926. Herpetologische Mitteilungen VIII-XV. Senckenberg. 8(3/4):136-156.
- _____. 1938. Amphibien und Reptilien aus Angola, gesammelt von W. Schack. Seckenberg. 20(6):425-443.
- Monard, A. 1931. Reptiles. Bull. des Sci. Nat. 55:89-111.
- Parker, H.W. 1936. Dr. Karl Jordan's Expedition to South-West Africa and Angola: Herpetological Collections. Novit. Zool. XL:115-146.
- Schmidt, Karl P. 1933. The reptiles of the Pelitzer Angola Expedition. Ann. Carnegie Mus. 22:1,2-4.



CLASSIFIEDS

THIS SECTION IS OPEN TO ALL N.O.V.A. MEMBERS WHO WANT TO BUY OR SELL VARANIDS, TEGUS, OR OTHER RELATED PRODUCTS. NON-MEMBERS CAN PLACE ADS AT A RATE OF .50 A WORD (NO MINIMUM). DEALERS CAN PLACE .25 PAGE ADS AT \$20, .5 PAGE ADS AT \$35, AND FULL PAGE ADS AT \$50. NOTE: N.O.V.A. IS NOT RESPONSIBLE FOR THE QUALITY OF THE MERCHANDISE OR ANIMALS IN ANY AD.

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FOR SALE: Black Tree monitor, *V. beccarii*. \$400/offer. (440) 327-9408.

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WANTED: Information to improve husbandry techniques of New Guinean and Australian varanids. Contact N.O.V.A.

VET'S OFFICE

MYSTERIOUS LUMPS

by Mark D. Butler, D.V.M.

Animal Care Unlimited

2665 Billingsley Rd.

Columbus, Oh. 43235

A Savannah monitor was presented for lumps on the rear legs. It was in good body condition and the physical was otherwise normal. It was kept in a tank with a hot rock, full spectrum light and indoor-outdoor carpet. Water was provided in a small bowl which the monitor knocked over often. It was fed mice every other day.

The most common cause for swellings in all reptiles is abscesses, which are usually well encapsulated pockets of caseous debris (thick pus). A variety of bacteria can cause these abscesses, usually occurring after a penetrating wound. Most abscesses can be treated successfully by opening them up, removing the debris and cleaning regularly with a disinfectant solution.

Other causes for swellings can include sebaceous cysts, tumors, and subcutaneous nematodes (worms). Metabolic bone disease and/or fractures can also cause swellings. When joints are involved, gout should also be considered.

In this case, the lumps were scabby sores. Samples were taken for cytology, histopathology and cultures. All tests eventually confirmed a *Dermatophilus* infection. *Dermatophilus* is a bacterium that is part of a group sometimes referred to as "higher bacteria" because they resemble fungi in some ways. It is considered an obligate parasite, living only on animals, most commonly cattle, sheep, goats and horses. It can be zoonotic (contagious to people) and is usually very difficult to treat.

Treatment included an extended course of a combination of 2 antibiotics, regular bathings in a dilute disinfectant solution, and measures to prevent recurrence:

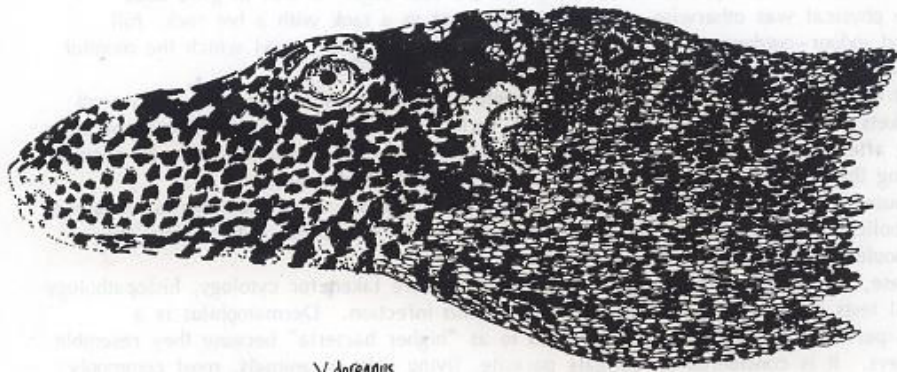
- 1) Get rid of the indoor-outdoor carpeting;
 - 2) Disinfect the tank with a dilute bleach solution;
 - 3) Provide a weighted bowl, or other means to keep the monitor from spilling the water;
 - 4) Get a thermometer and hygrometer to monitor humidity and temperature in the tank.
- (We also recommend a heat source other than the hot rock)

The point to remember is that not *all* lumps are simple abscesses.

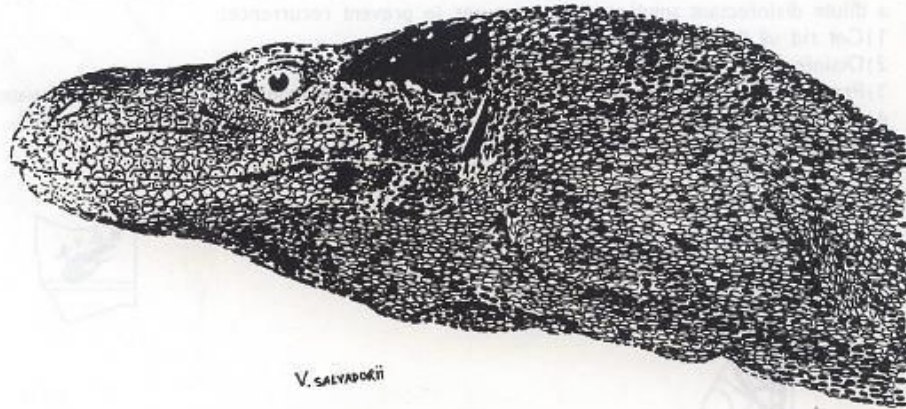


PARTING SHOT

BLUE TAIL MONITOR AND CROCODILE MONITOR DRAWINGS
BY JOHN ADRAGNA JR.



V. doreanasi



V. salvadorii



Adragna

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