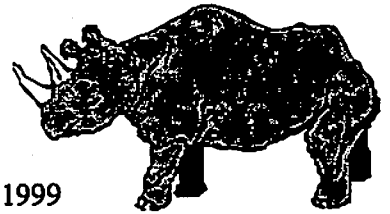


# REALLY, RHINOS!



Volume 13, no. 2, 1999

## Doctor, Are We Pregnant?

Tom deMaar and Kimani Kuria

[*Swara* Volumes 20:6 & 21:1, December, 1997 & January, 1998]

How do you tell if a white rhino is pregnant? Even after a gestation period of eighteen months, a baby rhino at birth is insignificantly small compared to the mother. In the case of the white rhino, the mother may weigh 1,6000 kilos while at birth the baby weighs only about 60 kilos. No wonder she barely shows any signs.

To make things more complicated, pregnant female rhinos are still often served by bulls, so sexual activity is no indicator - the mother may be keeping a secret. Even in the closely managed environment of a zoo many rhino pregnancies go unnoticed until the final months. The staff may have an idea that the mother is pregnant, but frequently no one is sure. So how can we tell the condition of a rhino that roams freely over a large area?

The question of rhino pregnancy has become very important in rhino management Today, rhino populations are so low that most animals are maintained within controlled environments. Within this system of rhino sanctuaries it is sometimes necessary to move certain animals for genetic reasons, for population control, or to create new sanctuaries. Moving a female before she is pregnant yields an empty cup. Much better to move a pregnant one so the operation yields two individuals at the new site instead of one. However, to move a female when she is in advanced pregnancy puts the life of the baby at risk. The key is to make the move while the baby is still small and well-protected by its mother's body.

Fortunately there are several technologies that can determine pregnancy. One of these measures hormones related to pregnancy that are excreted by the mother. The same type of test is available for humans at most pharmacies. The human test is very simple: a few drops of urine on an indicator and moments later a color change indicates yes or not. But how do you get urine from a wild rhino? It is a

rather dangerous proposition unless one has a very long stick.

Several years ago, urine collection was attempted. Game rangers were armed with syringes to collect urine from leaves and nay other place it was found. Unfortunately, this process yielded very variable samples. Some were contaminated with sand or dust. Sometimes the urine would be diluted with morning dew and give wrong results. Perhaps looking in the stool would be easier? Granted, it is also contaminated, but the foreign materials is a known entity and thus consistent. The added bonus is that rhino stool is available in large quantities.



The search for this technology led to the Deaconess Research Institute in Billings, Montana, to a group led by Dr. Jay Kirkpatrick. Technician Beaux Berkeley had already begun a survey of white rhinos using animals in Zimbabwe but she needed more samples since each species is unique and for each the levels and types of hormones present needed to be standardized. Ms. Berkeley needed to compare white rhinos, measure their hormone levels, and wait to see which in fact gave birth So we enlisted other rhino facilities and asked them to collect stool from their females.

Collecting rhino stool is a very meditative procedure. First, you find your volunteer and identify her. Then you wait. Listening to the wind and hoping a rhino will defecate is a strange pastime indeed. We watched the world of nature go by. However, we never forgot our true purpose and our eyes kept flicking back to check our volunteer. When she

finally did her business we would pinpoint the spot and wait until she wandered off. A still warm specimen was collected and immediately labeled and placed in a cold box. Upon returning home a five-milligram sample was placed in liquid nitrogen for deep freezing. When all the samples were collected they were packed together and sent with a special courier to the laboratory in Montana.

Several days later, the stool samples were thawed and the hormone extracted from them. An ELISA (enzyme-linked immuno-absorbent assay) test was performed. In plain English this means that the hormone was measured by exposing it to antibodies specifically designed to grab it. Attached to the other side of the antibodies was a marker that would show a color when exposed to a certain chemical reaction. Measuring the amount of color gives the level of hormone present..

A total of sixteen female white rhino samples were collected and sent. Samples were contributed from Ol Jogi Game Reserve, Lewa Conservancy, Solio Ranch and Mount Kenya Game Ranch. The results showed some pregnant and some not. Since the test, five of the right animals that registered as pregnancy have given birth or have been proven to be carrying. The results show that this test can be a valuable management tool for rhino populations.

## ***Mysterious Dependents of the Black Rhino***

Daphne Sheldrick

[Sawara 20:5, September/October, 1997, p.25]

Through millennia in conjunction with this ancient species, parasites have evolved that are specific to rhinos. For instance, the tiny flies known as *Lyperosia* that breed in rhino's communal dung piles and which swarm and alight on the animal in soft clouds, particularly during the dry season.

Another is the *Gyrostigma*, resembling a wasp, *Gyrostigma* is a beautiful metallic blue fly with scarlet legs and head stripe, but devoid of mouth parts. Once this fly has hatched from a pupa in the ground it must find a living rhino within its five day life in order to begin its mysterious life cycle anew.

Even today, very little is known about this quaint

and beautiful insect, not only because its life is so short and it is so easily mistaken for a wasp, but also because it is crepuscular [active in the twilight] and elusive, active only at dawn and at dusk.

Most of the *Gyrostigma's* life cycle is spent in the form of a large and rather revolting looking beetle-like 'bot' that shares the rhino's food source actually inside its stomach in a seemingly symbiotic relationship.

Many rhinos harbor large infestations of bots which might possibly become parasitic should the animal be in poor physical condition. No one knows how long a bot remains in the stomach of the rhino, but eventually it is passed in the dung to pupate in the ground with the first rains, but only if the rains are going to be substantial and conditions promise to be just right - otherwise the bots simply stay put until the next season, sometimes appearing briefly at the anal orifice to take a look around and, if conditions don't suit them, hurrying back in!

The eggs of the *Gyrostigma* fly which are in minute, oblong shaped and white, are laid in the soft striated indentations of the skin around the neck and head, and after some six days hatch into tiny 'inch-worms' no longer than the comma of a typewriter. At first it was assumed that these worked their way along to either the rhino's nose or mouth, but through observing them on our orphans, we discovered that they simply bore straight through the hide and from there somehow end up in the stomach.

## ***More on rhino parasites!***



Penzhorn, B.L., R.C. Krecek, I.G. Horak, A.J.M. Verster, J.B. Walker, J.D.F. Boomker, S.E. Knapp, and S.K.F. Qkuandt. 1994. Parasites of African rhinos: A documentation. Proceedings of a Symposium on Rhinos as Game Ranch Animals, Onderstepoort, R.S.A., pp. 168-175. R.S.A., pp. 168-175.

Gibbons, L.M., S.E. Knapp, and R.C. Krecek. 1996. *Diceronema versterae* n. sp. n. (Atractidae: Cosmocercoidea) from the black rhinoceros, *Diceros bicornis bicornis*, in South Africa. *Journal of the Helminthological Society of Washington*. 63:98-104.

*Diceronema versterae* gen. n., sp. n. (Atractidae: Cosmocercoidea) is described from the stomach of a black rhinoceros, *Diceros bicornis bicornis*, from the Umfolozi Game Reserve, KwaZulu-Natal Province, South Africa. The new genus and species differs from all other genera in the family Atractidae in the presence of a cup-shaped buccal capsule, the presence of symmetrical cervical papillae each with 4 prongs, the restriction of spines to the ventral surface of the female tail, the presence of caudal alae on the posterior end of the male, the ornamentation on the ventral surface of the male, and the structure and arrangement of the male caudal papillae.



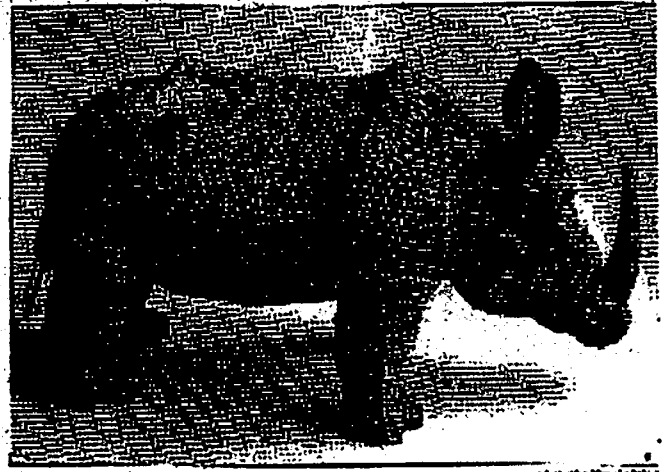
Knapp, S.E., R.C. Krecek, I.G. Horak, and B.L. Penzhorn. 1997. Helminths and arthropods of black and white rhinoceroses in southern Africa. *Journal of Wildlife Diseases*. 33: 492-502

Helminths and arthropods were collected from two black rhinoceroses (*Diceros bicornis bicornis*) and one white rhinoceros (*Ceratotherium simum*) and ticks were collected from four black and two white rhinoceroses in southern Africa. The helminth parasites of a black rhinoceros from Umfolozi Game Reserve, Republic of South Africa and of a black rhinoceros from Namibia were quantitatively measured and recorded for each compartment of the alimentary tract. *Probstmayria vivipara* was the most abundant parasite in each animal. A new species of nematode, *Diceronema versterae*, was found in the stomach of one animal. *Draschia megastoma* was present in the descending colon of the same animal but was twice the size of specimens reported from equids and the typical granulomatous lesions present in horses were not observed. Other helminths recovered, which are new records, were: *Parabronema foundi*, *Kiluluma* spp. *Kiluluma goodeyi*, *Kiluluma magna*, *Khalilia rhinocerotis*, *Oxyuris karamoja* and *Anoplocephala gigantea*. The stomach bot, *Gyrostigma pavesii* was collected from one black and one white rhinoceros. The ticks recovered from the black rhinoceroses were *Amblyomma hebraeum*, *Dermacentor rhinocerinus*, *Rhipicephalus maculatus*, *Rhipicephalus muelhensi* and *Haemaphysalis silacea*. The two white rhinoceroses harbored A.

*hebraeum*, *D. rhinocerinus*, *Hyalomma truncatum*, *Rhipicephalus simus*, *Rhipicephalus appendiculatus* and *Rhipicephalus zambeziensis*.

For more information, contact:

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Arriba, Mexico!!

In the lake region of Michoacan, there is a menagerie of woven furniture in animal shapes. Mario and Lena Torres weave their intricate pieces on hand-forged iron frames with a water hyacinth reed called tule that they harvest from a lake near their home. Then they finish the furniture with a hard, clear shellac for durability. If this "Rhino Trunk" intrigues you, contact the folks at :

Stray Dog Imports  
PO Box 296  
Rossville, GA 30741.  
(706.861.1365)

**HAVE A  
COOL  
SUMMER!**





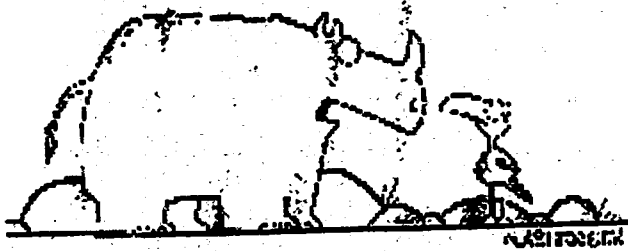
## Grants Support "Rhino Man"

African Wildlife News, Fall, 1998

Grants totaling \$12,500 were awarded to support the work of noted rhino conservationist Michael Werikhe in Kenya's Tsavo East National Park, where roads and facilities were damaged by heavy rains caused by El Niño.

Werikhe is widely known as "Rhino Man" for his international one-man crusade to raise awareness of threats to the black rhino. He has trekked thousands of miles in walkathons across Africa, Europe and the United States on behalf of the rhino, raising more than \$1.5 million to aid the species' survival. Werikhe, of Mombasa, Kenya, is also involved in other causes such as controlling pollution and conserving forests and marine life.

AWF, the American Zoo and Aquarium Association and the International Rhino Foundation each gave \$2,500 to Werikhe's project, and the Disney Wildlife Conservation Fund donated \$5,000. AWF also contributed nearly \$8,000 in emergency funds to repair El Niño-damaged fences at the Ngulia Rhino Sanctuary in Tsavo West and to support park patrols there for six months.

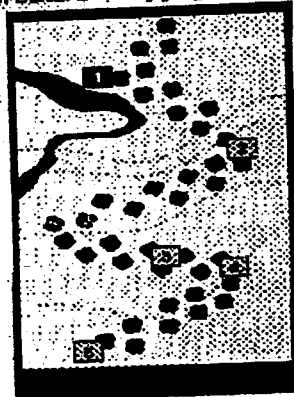


"I spent months trying to pop it—  
I thought it was a pimple."

## A DAY IN THE LIFE OF A RHINO

Go online and track a black rhino for a day, through the watering hole to the dining area and ... well, umm, to the impromptu restrooms. The researchers have already named him, but we find it's even more fun if you call him a name like "Slappy" or "Slim."

1. Trackers: Spying on an rhino



Tracks indicate that the rhino left its daytime resting place and headed straight for water to drink - typical rhino behavior. Rhinos also like to bathe and wallow in nearby mud.

[www.discovery.com/ex/ad/newsletter/indep\\_newsfeatures/trackers/rhino.html](http://www.discovery.com/ex/ad/newsletter/indep_newsfeatures/trackers/rhino.html)

## HOW THE RHINOCEROS GOT HIS NOSE\*

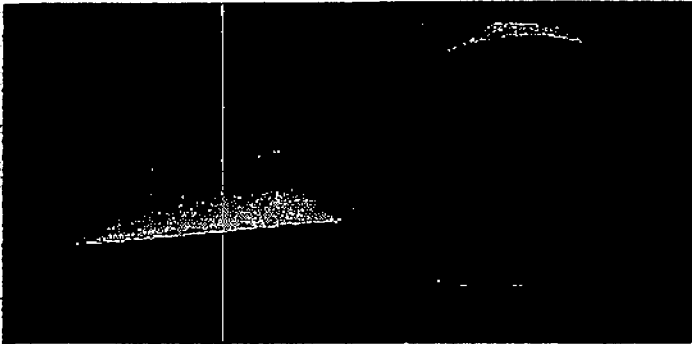
The very first Rhino (from Tokyo)  
Just loved telling joke afer jokeo,  
But he also told lies  
Of incredible size  
Which is how he became a Rhinocchio.



...from Lewis, J. Patrick. (1990) *A Hippopotamusn't and other animal verses*. New York: Dial.

# RHINOBUY\$ RHINOBUY\$ RHINOBUY\$

Beer tap for Rhino Chasers. \$30 (includes postage).  
Contact Judyth at 520.327.9048 or rinophyl@rtd.com



Make room on your wall for this custom made and very unique rhino head sculpture by Sedona artist Michael Colpitts.

Contact Michael at:  
520.204.9496 or write:

2420 Maxwell Lane  
Sedona, AZ 86336

(This one costs @ \$200)



Make your bath time more fun with a rhino tub buddy. Contact Legends and Lore, Inc. PO Box 8046 Rapid City, SD 57709 1.800.888.1495.

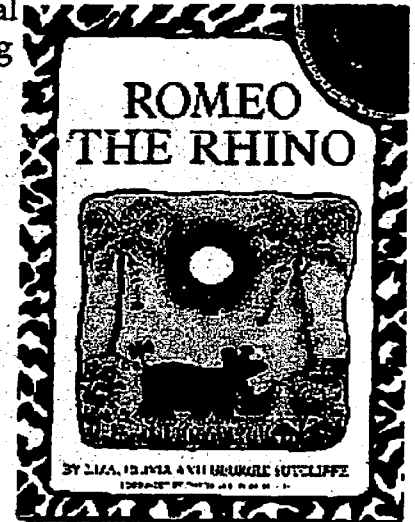


Wooden rhino keychains for sale!  
Contact Roy Quast  
17143 Ranchcountry,  
Hockley, TX 77447

The sun was ablaze in the African skies,  
His Righness, King Romeo, had tears in his eyes,  
"Cruel Poachers still kill us, more Rhinos will die,  
"We'll soon be like Dinos and roam in the sky.  
"We're killed and then butchered, our horns are then sold  
"For handles of daggers, love potions and gold!"

So begins the magical story of Romeo, King of the Black rhinos and his fierce battle against poachers. Find magical eggs on each page. Test your rhinowledge and have fun! This story in rhyme was written and illustrated by Liza, Olivia and Georgie Sutcliff and is now available from the

Save the Rhino Trust. If you wish to get a copy, email Lorna: [srtrhino@iafrica.com.na](mailto:srtrhino@iafrica.com.na) or write: Save the Rhino Trust, PO Box 224, Swakopmund, Namibia.



AND a note from Lorna...

"Jambo Judyth

Glad you enjoyed the book. I love it, especially the true/false section at the back. I get so many basic enquiries regarding rhinos, and I'm so tempted to put the book in the post to them, however most adults would think we'd gone totally nuts if we sent them what is essentially a kids book!

We retail the book at N\$ 20 each. would be. We also sell Rhino activity books for N\$ 12 each, that's about US\$ 2. Also leather rhino key-rings, t-shirts."

This book is really is a colorful and informative way of teaching kids of all ages about the rhino's plight.

## Search for the Black Rhino: Internet Coach®

Devised as an adventure game in the style of Myst, players must use search tools on the web to collect information to help search for a rare Black Rhino. Search for the Black Rhino teaches users Internet research skills as they trail an elusive Black Rhino. They learn to use Internet search engines to locate, analyze and compile data. Search explores extensive geological and zoological content with stunning 3-D graphics. Users can also link directly to the Internet for additional resources. No Internet connection necessary because Web simulations are used.

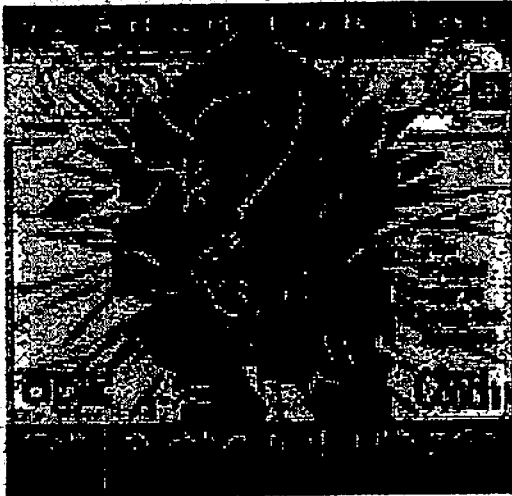
### System Requirements:

#### Macintosh:

68040 Processor or Power PC System 7.1  
8 MB RAM (16 MB recommended)  
No disk space required  
4X CD-ROM drive  
13" 256 Color  
Monitor

#### Windows:

486-based PC  
Windows 3.1, 95 NT  
16 MB RAM  
No disk space required  
4X CD-ROM drive  
256 color video  
adapter



A single copy is only \$43.95 (including shipping) and a teacher edition is also available. Contact Apte and order directly online (I did!):

<http://www.apte.com/>

A one year quarterly subscription to *Really, Rhinos!* is \$20 (\$25 foreign). Make check payable to Judyth Lessee. 100% of each subscription is donated to rhino conservation projects. Send feedback or rhino citations to: *Really, Rhinos!*, PO Box 40503, Tucson, AZ 85717-0503. Phone: (520) 327-9048. e-mail: rinophyl@rtd.com. [www.rtd.com/~rinophyl](http://www.rtd.com/~rinophyl) (Patience; we're working on it!!)

If you find errors, please know they are printed for those who always look for them. We try to print something for everybody.

**Really, Rhinos!**  
PO Box 40503  
Tucson, AZ 85717-0503

To save one rhino is to save the world's rhinos.