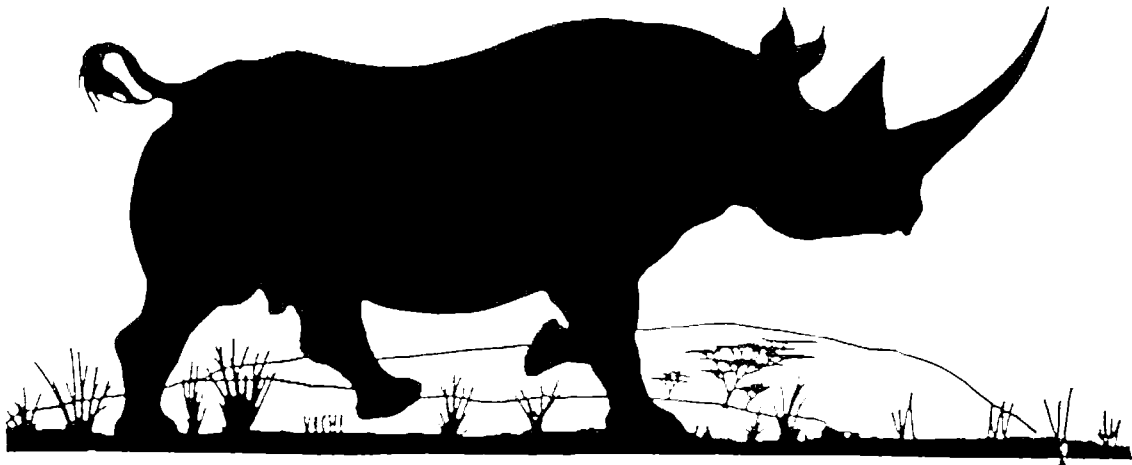


**The Proceedings of the
First International Workshop
on the Diseases of Black Rhinos**

Diceros Bicornis

August 27 - 29, 1993

**White Oak Conservation Center
Yulee, FL, U.S.A.**



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DeAnna Hansen, Administrative Assistant, Fossil Rim Wildlife Center
Sandra Richmond, Agent, Uniglobe - Lonestar Travel, Inc.
Dr. Gary Tabor, Program Officer, Geraldine R. Dodge Foundation
Dr. R. Eric Miller, Veterinary Advisor, Black Rhino SSP and the
Rhinoceros Advisory Group of the AAZPA, St. Louis Zoo
Dr. Thomas Foose, Program Officer, International Rhino Foundation
Dr. Donald Paglia, UCLA School of Medicine
Dr. William Sadler, Manager - Specialty Feeds, Purina Mills, Inc.
John Lukas and the staff of the White Oak Conservation Center

Agenda

Friday August 27, 1993

- 7:30pm Introduction and opening remarks - Evan Blumer
- 8:00pm Basic biology and ecology of the black rhinoceros (*Diceros bicornis*) - Raoul du Toit
- 9:00pm History and overview of the predominant diseases affecting black rhinoceros - Eric Miller

Saturday August 28, 1993

- 8:00am Normal physiological parameters of free-ranging black rhinoceros - Mike Kock and Pete Morkel
- 8:30am Morbidity and mortality associated with capture, translocation and long term holding of free-ranging black rhinoceros - Mike Kock and Pete Morkel
- 9:00am Morbidity and mortality in intensively managed populations of black rhinoceros (Kenya) - Richard Kock
- 9:30am Pathological conditions in free-ranging black rhinoceros - Nancy Kock
- 10:30am Morbidity and mortality in recently exported/imported black rhinoceros - Evan Blumer and David Blyde
- 11:00am Pathological conditions in captive black rhinoceros - Dick Montali
- 12:00pm Mucosal and cutaneous ulcerative syndrome in black rhinoceros - Linda Munson
- 12:30pm **Lunch**
- 1:30pm Overview of the nutrition of free-ranging and captive black rhinoceros - Ellen Dierenfeld
- 2:30pm Phytochemistry and plant/animal interactions relevant to free-ranging black rhinoceros - Raoul du Toit
- 3:00pm Experimental diet formulations for black rhinoceros - Bill Sadler
- 3:30pm Vitamin E, Beta-carotene, Essential Fatty Acids and other bio-protectants - Rob Stewart
- 4:00pm Leptospirosis in black rhinoceros - Carol Bolin and David Jessup
- 4:30pm Encephalomalacia in black rhinoceros - Dave Kenny
- 6:00pm **Dinner**
- 7:30pm Overview of captive management of black rhinoceros - Tom Foose
- 8:00 -10:00pm **Working Groups**

Sunday August 29, 1993

8:00pm Serum and tissue iron in black rhinoceros - Joe Smith

8:30pm Hemolytic anemia in black rhinoceros - Don Paglia

9:30pm DNA correlates for enzyme deficiencies in black rhinoceros - Mike Worley

10:00am - 12:00pm **Working Groups**

12:00pm ***Lunch***

1:00-2:00pm **Working Groups**

2:00pm Reports from Working Groups

3:00pm Development of Research Master Plan and Priorities

4:30pm Closing remarks - Evan Blumer

Participants

Dr. Evan Blumer	Fossil Rim Wildlife Center
Dr. Carol Bolin	U.S. National Veterinary Diagnostic Laboratory
Dr. David Blyde	Western Plains Zoo
Dr. Scott Citino	White Oak Conservation Center
Dr. Ellen Dierenfeld	New York Zoological Society
Mr. Raoul du Toit	Dept. of National Parks and Wildlife Management
Dr. Thomas Foose	International Rhino Foundation
Dr. John Harvey	University of Florida
Dr. David Jessup	International Wildlife Veterinary Services
Dr. David Kenny	Denver Zoological Gardens
Dr. Alan Keitt	University of Florida
Dr. Michael Kock	Dept. of National Parks and Wildlife Management
Dr. Nancy Kock	University of Zimbabwe
Dr. Richard Kock	Kenya Wildlife Service/Z.S.L.
Dr. Eric Miller	St. Louis Zoo
Dr. Richard Montali	National Zoological Park/Smithsonian Inst.
Dr. Peter Morkel	African Wildlife Management Trust
Dr. Linda Munson	University of Tennessee
Dr. Colleen O'Ryan	University of Capetown
Dr. Donald Paglia	University of California, Los Angeles
Dr. William Sadler	Purina Mills, Inc.
Dr. Joseph Smith	Kansas State University
Dr. Robert Stewart	Stewart Products, Inc.
Dr. Janet Stover	White Oak Conservation Center
Dr. Michael Worley	San Diego Zoo

INTRODUCTION

Evan Blumer

As most of you know, the status of the black rhino in the wild is in decline despite the heroic efforts of our colleagues, some of whom are here in the room with us. The numbers of black rhino in Zimbabwe have dropped dramatically in recent months, encouraged by poachers increasing in South Africa. Managers in Namibia and Kenya are bracing themselves for increasing poaching pressures. Efforts to maintain viable populations in captivity and in some instances, the intensively managed *in situ* populations, have been rather severely hampered by high rates of morbidity and mortality due to some syndromes that appear to be unique to the black rhino.

Over the last decade a significant research effort has focused on these problems, spear-headed by Eric Miller. What we have realized however, is that in many cases we have investigators that are focusing on small pieces of a very complex puzzle. Additionally, the various investigators often speak different technical languages, and they really had no forum for the interchange of ideas about what is going on with the black rhinos. We were able to convince some of the parties that funded this workshop, that if we could bring a significant number of the key individuals together, put them in a room together for several days, let them bang heads, and build some relationships, that we might be able to develop a new synthesis of where we are with respect to the puzzles of the diseases that affect black rhinos, and also where we need to go to hopefully overcome them. That is why we are all here. So let us get ready to think and talk and argue and debate and plan, and hopefully have a little fun in the process.

I'd like to first off all thank the organizations that have made this workshop possible: Earth Promise for administrating the projects and the grants; the Geraldine R Dodge Foundation and Purina Mills for financial support; Fossil Rim for allowing time and support to put this together, especially for my time and for my administrative assistants; and to White Oak Conservation Center for agreeing to host.

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The people that are here represent a wide range of experience with rhinos. We go from some of the wildlife vets from Africa who live and breath and sleep rhinos, through to some of our special advisors who have little or no direct experience with rhinos. We thought it was necessary to start with some basics to bring everybody to some common ground. That is why tonight we are going to focus on the basic overview of the biology and ecology of the black rhino and also a historical perspective of the disease problems.

A very important point is that the agenda was developed to give some structure to the proceedings. It is meant to be a guide only. The presentations are intended to be informal, by that we mean that we encourage, in fact, we demand that you ask questions, interject, digress, and basically prevent this from

becoming a series of lectures. We need to turn this into a forum for the interchange of ideas and hopefully come up with some new ideas by the time it is over.

And most importantly, we need to leave this workshop with some products. The three main products that we hope to come out of here with are: 1.) A new synthesis of what our understanding is of the primary diseases that affect black rhinos. A lot of new information has been generated the last year or two. We are finding more and more that some of these syndromes have some common threads. We hope to be able to put them together in some new ways. 2.) We need to develop an understanding of where we must go with our efforts to further understand and eventually overcome these problems. It is clear that in many cases for the foreseeable future that black rhino are going to have to be managed in intensively managed situations. We have to overcome these problems that are plaguing us. After we develop where we must go, we have to turn that into a bit of a skeleton of a master plan, and that is going to guide all of our black rhino health research. 3.) We have to develop a prioritized list of the projects we identify, which we will be able to use to secure some funding. Several funding sources have already been identified, but they are already demanding a prioritized plan. We have too many things to go after to be able to secure funding unless we have a plan.

Finally, as a personal comment, my job has been to get all of you here. Our success here depends on all of you taking things to the proper conclusion, and I hope you will be aggressive about all that.

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