IUDZG -
THE WORLD ZOO ORGANISATION

52nd Annual Conference
Technical / Scientific Session

Hosted by the Berlin Zoos
17 - 21 August 1997

TABLE OF CONTENTS

Scientific/Technical Session - 52nd Annual Conference, Berlin, Germany, 17-21 August 1997

Page

New Perspectives of Breeding Management and Reproduction Control in Captive and Wild Elephants. 1
Prof. Dr. Reinhold R. Hofmann, Dr. Thomas Hildebrandt, Dr. Frank Göritz
IZW Berlin

The New Elephant Park at Schoenbrunn Zoo. 13
Dr. Helmut Pechlaner
Schoenbrunn Zoo, Vienna, Austria

Elephant Keeping - Different Ways Lead to Success. 18
Hans Jörg Adler
Allwetterzoo Münster, Münster, Germany

The Management of the Asian Elephants at the Taipei Zoo 28
See-Wu Chu
Taipei Zoo, Taipei, Taiwan, Republic of China

Advances in Elephant Foot Care. 38
Y. Sherry Sheng
Metro Washington Park Zoo, Portland, Oregon, USA

A New Elephant Exhibit at Wuppertal Zoo. 42
Dr. Ulrich Schürer
Wuppertal Zoo, Wuppertal, Germany

Management and Behaviour of Asian Elephants at Paris Zoo 47
Claude Renvoise
Paris Zoo, Paris, France

New Enclosures for Keeping Black Rhinoceroses in the Zoological Garden Leipzig. 60
Dr. Peter Müller
Leipzig Zoo, Leipzig, Germany

Is Your Rhino Pregnant? (Infra-Red Thermography: a Non-Invasive Method). 65
Dr. Sabine Hilsberg
Berlin Zoo, Berlin, Germany

Animal Rights Philosophy - an Evolutionary Biologist's Critique?. 70
Dr. Michael Robinson
National Zoological Park, Washington, D.C., USA

The Problem is Much Bigger Than Managing Elephants and Rhinos. 97
Dr. Jerry R. Schubel
New England Aquarium, Boston, Massachusetts, USA

Page

The Breeding Herds of African and Asian Elephants, White Rhinos at the Zoological Center Tel Aviv Ramat-Gan. 104
Tibi Shapira
Zoological Center Tel Aviv Ramat-Gan, Ramat Gan, Israel

The Importation of Black Rhinoceros to Australia - Capture, Quarantine, Research and Breeding Programmes. 105
Dr. John D. Kelly
Zoological Parks Board, NSW, Australia

Rhinos in Berlin 119
Dr. Bernhard Blaszkiewitz
Tierpark Berlin-Friedrichsfelde, Berlin, Germany

Rhinoceros Conservation at the Zoological Society of London - Captive Breeding, Science, and Action in the Field 123
Dr. Jo Gipps, Nick Lindsay, and Simon Tonge
Zoological Society of London, London, England

Black Rhinoceroses in Captivity - International Studbook Evaluation. 128
Dr. Reinhard Göltenboth
Berlin Zoo, Berlin, Germany

Husbandry and Breeding the Koala (Phascolarctus cinereus) in the Duisburg Zoo. 149
Reinhard Frese
Duisburg Zoo,

A Release Program for Yellow-Footed Rock Wallaby (Petrogale xanthopus xanthopus) to the Flinders Ranges, South Australia. 155
Edward James McAlister and S.C. Barlow
Adelaide Zoo, NSW, Australia

Maintenance of Pelagic Jellyfish in the Zoo-Aquarium Berlin. 161
Dr. Jürgen Lange
Berlin Zoo, Berlin, Germany

Five Years of Studying Gorillas at Berlin Zoo. 166
Prof. Dr. Carsten Niemitz
Berlin Free University, Berlin, Germany
(Paper not available at time of printing.)

Reintroduction of a Young Female Chimpanzee at Berlin Zoo. 167
Franziska Martin and Prof. Dr. Carsten Niemitz
Berlin Free University, Berlin, Germany
(Paper not available at time of printing.)

Giant Panda Genetic Studies: Charismatic Links to In-Situ Conservation. 168
Dr. Oliver A. Ryder
Zoological Society of San Diego, San Diego, California, USA
(Paper not available at time of printing.)

In-Situ Conservation Activities for Endangered Primates in Vietnam. 169
Hans Jörg Adler
Allwetterzoo Münster, Münster, Germany

Title: **Rhinoceros conservation at the Zoological Society of London - captive breeding, science and action in the field**

Authors: **Dr Jo Gipps, Director, London Zoo**
Nick Lindsay, Senior Curator, Whipsnade Wild Animal Park
Simon Tonge, Senior Curator, London Zoo

Abstract:

The Zoological Society of London has been actively involved in the conservation of both African and Asian rhinos for fifty years and, before that, held and bred them since its foundation. Now, the combined strengths of the Society in captive breeding and husbandry, scientific research into nutrition, reproductive physiology and small population ecology, and active involvement in a wide variety of field conservation projects, demonstrate a powerful and integrated approach to the conservation of a species group that acts successfully as a model for all our major conservation initiatives.

INTRODUCTION

The theme of my paper is integration - How can we best act for a species - any species - by co-ordinated activity?

The topics I propose to cover will be:

- breeding - historic and recent
- science - both research and its application
- action in the field

In the case of rhinoceri, I believe we have a good example of how it may be possible, through co-ordinated and integrated effort, to make a significant contribution to their conservation.

Clearly, the picture for all species of rhinoceros is very bleak. In 1996, the estimated numbers of Black rhinoceros was only 2,500, White rhinoceros 7,500, Greater Asian one-horn rhinoceros around 2,000, Javan, maybe 75 and Sumatran around 250.

In all these cases, as we know, captive breeding can only be part of the solution. We cannot ignore the certainty that, in the not too distant future, the situation will be much worse for rhinos in the wild, and those animals in zoos around the world can only become more important not less.

A Little History

Rhinos have been kept at London Zoo from the earliest days. In 1834, on the 24th May, a male Asian one-horn rhinoceros was purchased from Captain Farqurson for the (huge (then)) sum of £1,050; it died on 19th November 1849 having lived in the Zoological Gardens for 'fifteen years, 5 months and 25 days'. Photographs of Asian one-horn rhinos from 1864 and the early 1900s exist in the archives of the Zoological Society of London.

A young male Javan rhinoceros was purchased on the 7th March 1874 from Messrs Cross and Jamrach for £800 and in 1872 a female Sumatran rhinoceros was bought for £1250 (from Mr Jamrach again). The first Black rhinoceros (a young male) was bought on the 11th September 1868 for £1000 from Carl Hagenbeck.

So, rhinoceros species have been kept at London Zoo for many years but in those days, captive breeding was clearly not on the agenda.

Asian Rhinoceros

The captive founder population of Asian one-horned rhino is 45.46; since 1982, steady growth has been achieved until the current position is 70.59. The target is between 150 and 200 animals in captivity.

In recent years, Whipsnade Wild Animal Park is the only zoo in the UK breeding Asian greater one-horn rhinos. The original animals were Rupa from Delhi in 1973, then Kuma, who came from Berlin in 1976. Of eight births, 3 male survivors are now at Chester, Dvur Kralove (where the female there is pregnant) and Planckendael, where two living off-spring survive.

We have recently received two young females from Royal Chitwan National Park in Nepal (of which more below) which are presently in London Zoo awaiting completion of new facilities at Whipsnade.

Black Rhinoceros

The current population of Black rhinoceros in captivity is around 98.120 in 75 collections. From 93.108 founders, there are now 1.1 in the fifth generation. Twelve calves have been produced by the Zoological Society of London.

At London Zoo, we recently successfully hand-reared a young female, Rosie, in December 1988, using a milk formulation prepared specially from analysis of natural milk by research veterinary scientists at ZSL. Black rhinoceros has always proved difficult to hand-rear and our success here was very pleasing; Rosie is now with Jos, a young male from Dvur Kralove and they have yet to breed.

Southern White Rhinoceros

The captive population of Southern white rhinoceros is derived from 235. 327 founders and there are 45.36 animals in the second generation. The current population is 345.361 in 246 collections. 3.3 of the first generation animals have been born at Whipsnade Wild Animal Park and the herd there continues to flourish.

The wider work of ZSL

ZSL continues to work with these three species in the application of science in the field. As is so often the case, it is individuals' commitment, often over many years, that ensures the continuing success of these projects.

For the last five years, Richard Kock, an experienced wildlife veterinarian, has been seconded by ZSL as Senior Vet to the Kenya Wildlife Service. His task has been not only to treat sick and injured wildlife, but to train Kenyan vets in wildlife medicine. He was previously the Senior Vet at Whipsnade, and his extensive hands-on experience gained there has been of great value in application in the field.

He was responsible for coordinating the movement of ten black rhinoceros from Nairobi National Park to Tsavo East, thus completing the goal of setting up founder populations throughout Kenya.

Richard has also assisted the authorities in Tanzania with darting three Black rhinos in the Southern Serengeti for horn transmitter replacement, to allow Park Rangers to establish home ranges and to aid security. ZSL has also provided support with vehicles, crates etc. As in all such projects, involvement of local people has been absolutely crucial.

ZSL also seconded Rob Brett as National Rhino Coordinator to the Kenyan Government from 1990 - 1995. He carried out an assessment in Uganda for the reintroduction of Black rhino as a model, and he is now seconded to the Save the Rhino Trust in Namibia to coordinate a census of the desert-adapted Black rhino there. This is the only viable Black rhino population outside a national park or protected area; local people have been actively involved in data collection, and around 120 animals have been identified.

A research endocrinologist, Julie Garnier, has been working in Zimbabwe to develop a non-invasive technique for monitoring rhino reproductive status from faecal steroid levels; this work is based on techniques and information gained from captive animals.

In Sumatra, ZSL has been acting as consultants to the Gunung Leuser Development Project, the aim of which is to conserve and develop sustainably the Leuser ecosystem by managing the Leuser National Park; this work has been done on ZSL's behalf by Dr Kathryn Monk. In addition to management of the park itself, buffer zones, where rural activities can develop, are also being set up. Although this is not directly rhino-related conservation, the area contains rhinos which will have greatly enhanced protection as a result.

Finally, in Royal Chitwan National Park in Nepal, Dr Jacques Flamand (who was previously Director of the King Khalid Wildlife Research Centre at Thumamah in Saudi Arabia) is working on a community-based project for four years, to conserve Asian one-horned rhinos there. Chitwan contains 25% of the remaining wild population of these animals and Jacques (who is seconded to the Nepalese Department of National Parks and Wildlife Conservation) will carry out clinical treatment of rhinos as well as any other veterinary input (on other species and on domestic livestock around the park) required by the management programme.

In another area, Simon Tonge, Senior Curator at London Zoo, visited Nepal to advise the Zoo Authority in Kathmandu on a masterplan for the zoo there; management of the zoo has been taken over by the King Mahendra Trust. The Curator of Mammals at London Zoo, Douglas Richardson, has paid a further visit to the zoo for six weeks, to provide further assistance, particularly in the areas of enclosure design and behavioural enrichment.

Conclusions

In this article, I have given a series of examples of breeding, research and activity in the field, related to rhinos. What connects them, and why do I think they tell an important story?

What connects them is the Zoological Society of London and its component parts - London Zoo, Whipsnade Wild Animal Park, the Institute of Zoology and Field Conservation.

The stories that these examples have told , in every case, is that by transferring expertise and experience from one area of activity to another, and by coordinating the work of Curators, Keepers, Vets and Research Scientists, you achieve much more than those individuals would ever achieve alone.

In other words, I believe that the synergy between experts in different fields generally confirms the maxim that "the whole is greater than the sum of the parts". If it is so, then the model should be applied more widely than it is already to different species and in different parts of the world.

Many organisations represented in the World Zoo Organisation also possess these range of skills and ZSL is not unique in this matter. Many organisations, however, are too small to consider being able to contribute in all these areas. My argument is, however, that the benefits we gain from such inter-disciplinary cooperation are potentially so great that we ignore the methodology at our peril - the current state of rhino populations around the world, in the wild and in captivity, confirm that fact.

Both the World Zoo Organisation and the Conservation Breeding Specialist Group are intrinsically cooperative organisations, and it is only by working together, in all areas of conservation activity, that we can hope to save these strange and wonderful creatures from extinction.