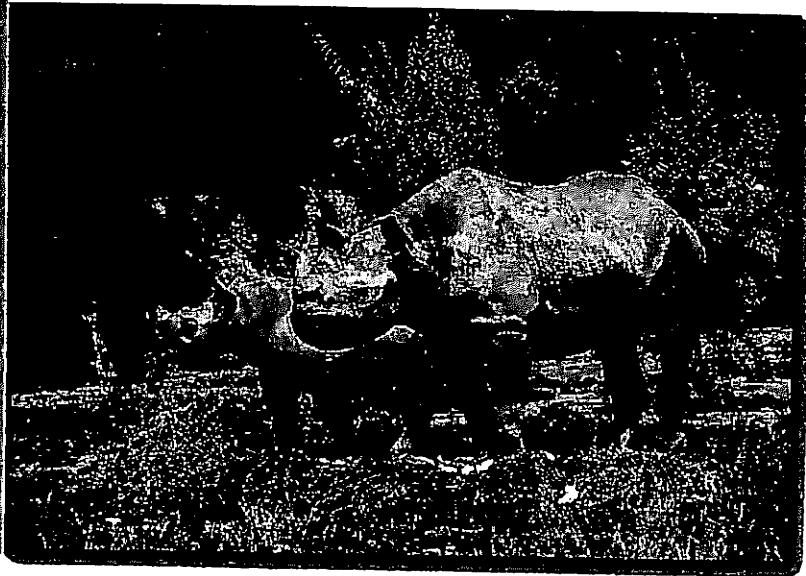
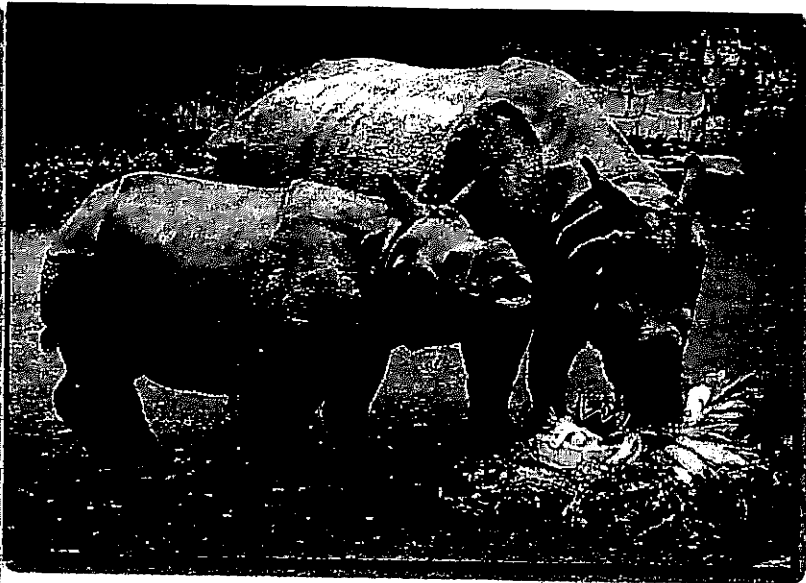
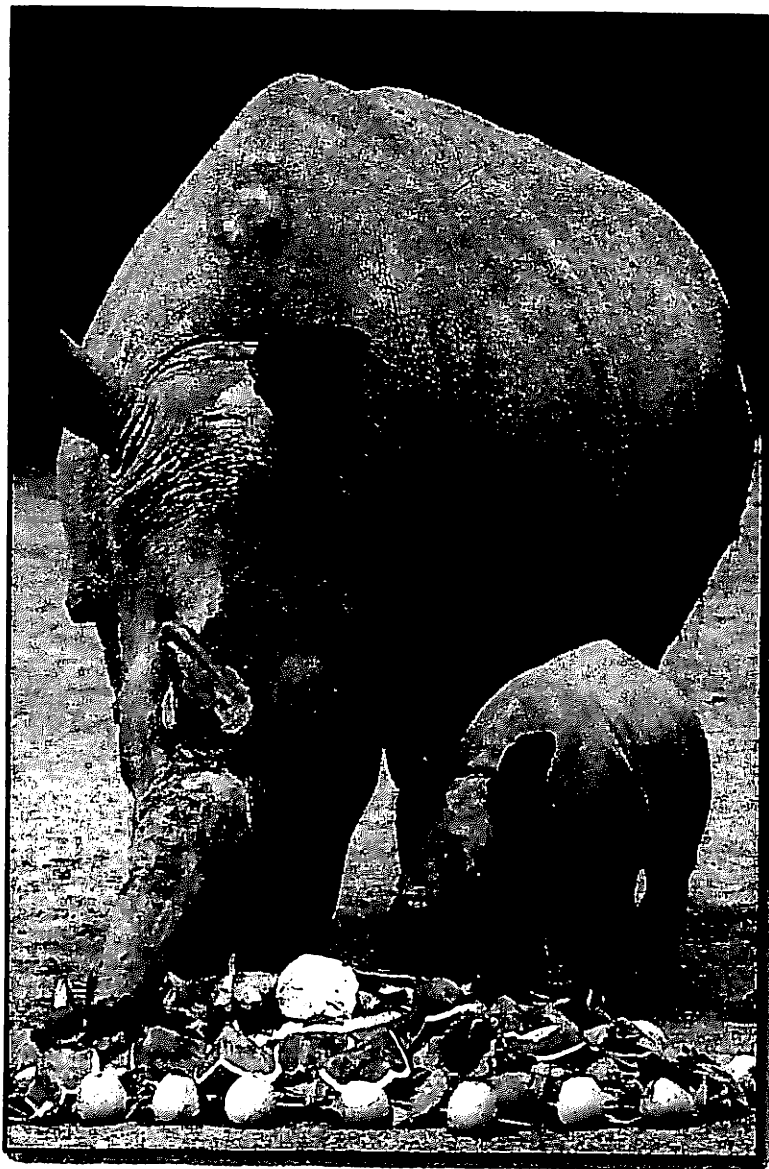


Breeding of Endangered Species in ZOO Dvůr Králové III.

RNDr. Dana Holeckova



Making this book would be impossible without keepers' efforts and records in logbooks, which in particular applies to Miroslav Svitalsky, who was in charge of caring of the rhinos since they arrived at the zoo.



Mirek Svitalsky with young black rhinos Jos DK 7 and Sany DK 8 plus a northern white rhino female Najin DK 7 (zc)

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Front cover photo: Northern white rhinos Najin DK 7 and Fatu DK 9, Indian rhinos Numa and Nova DK 3 and eastern black rhinos Jiddah DK 17 and Dzanty DK 33 (dh)

Back cover photo: An eastern black rhino - female Musso DK 20 (dh)

BREEDING ENDANGERED SPECIES AT DVUR KRALOVE ZOO VOLUME 3

RNDr Dana Holeckova

Rhinos



Ministerstvo životního prostředí
České republiky



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PREFACE

From the aspect of taxonomy, rhinos are placed among odd-toed ungulates (*Perissodactyla*), forming a self-contained family of rhinoceroses (*Rhinocerotidae*), members of which have been ranging over the Earth since the Tertiary period. The group evolved very explosively, starting its history in North America, which then moved to Eurasia and eventually Africa. The fabulous woolly rhinoceros (*Coelodonta antiquitatis*) still ranged over numerous Asian regions during the Ice Age only several millenniums ago and the Sumatran rhinoceros can be placed amongst the close relatives of this creature.

The rhinoceros is the largest living terrestrial mammal after the elephant and the hippo; they can weigh up to 2.5 tonnes. These peaceful herbivores now face extinction despite the millions of rhinos living on the Earth a mere two hundred years earlier or the hundreds of thousands just a century ago. The reason for such decline is chasing for their horn going hand in hand with depleting the natural habitats. The future for the rhino can only be ensured by a strict protection. It was poaching what made all rhino species nearly extinct, and notwithstanding the prohibited trade in all species of rhinos obtained from the wild, as well as rhino derivatives - horns, bones and the like - under the Washington Treaty, which has been in effect near to 35 years, the threat of poaching still remains active in most of the countries forming the range for rhinos, which is a very alarming fact.

The existing five rhino species are placed in four different genera (SPINAR 1984). Two species - the white or square-lipped rhinoceros (*Ceratotherium simum*) and the black rhinoceros (*Diceros bicornis*) - inhabit open areas of Africa south of Sahara, while South Asia, Malaysia and some islands are home to the remainder comprising three species, with the Indian rhinoceros (*Rhinoceros unicornis*) being the most common of these. A miniature of the Indian rhino and the rarest Asian species - the Javan rhinoceros (*Rhinoceros sondaicus*) - is rarely found in some hard to access Vietnamese regions, in addition to the island of Java. The last to mention is the Sumatran rhinoceros (*Didemnoceros sumatrensis*) surviving in the impenetrable tropical forests of Sumatra, a peculiarly furred creature and the smallest rhino species (HOLECKOVA 2008).

As a result of uncontrolled hunting, the southern subspecies of the white rhinoceros nearly became extinct in the 19 century, saved from being wiped out thanks to the strict protection of the only remaining population in South Africa. Dozen thousands of rhinos lived in the savannahs of Africa south of Sahara even in the 1960s. With numbers standing at some 100,000 animals, the black rhino (*Diceros bicornis*) was the most common rhino species, and the wild population of northern white rhinos, comprising 2,250 individuals, was roughly twice as large as the population of the southern forms at that time. Asia still had a few thousand of all the three rhino species, the most common of which was the Indian rhinoceros.

With the extreme increase in poaching, a sharp decline could be seen in all species of rhinoceroses, with the exception of the southern form of the white rhino, whose number was still growing due to protection.

Thanks to the efforts of international conservation community and protection activities of many African countries in recent decades, small populations of black rhinos could be stabilised and new established in strictly protected areas. Rhinos are now virtually protected by bodyguards and range in the middle of conservancies and national parks, be it over large fenced areas, or free. Nonetheless, they are monitored twenty-four hours a day and miniature transmitters that are usually placed in their horns make sure that the rhinos are tracked remotely night and day by their guards using telemetry.

While the population of the southern white rhino has been rising periodically to the current numbers of some 18 thousand individuals, the northern white rhino has just now got to the very brink of extinction.

The table on page 6 documents the development of numbers of each rhino species in the wild throughout the recent 35 years.

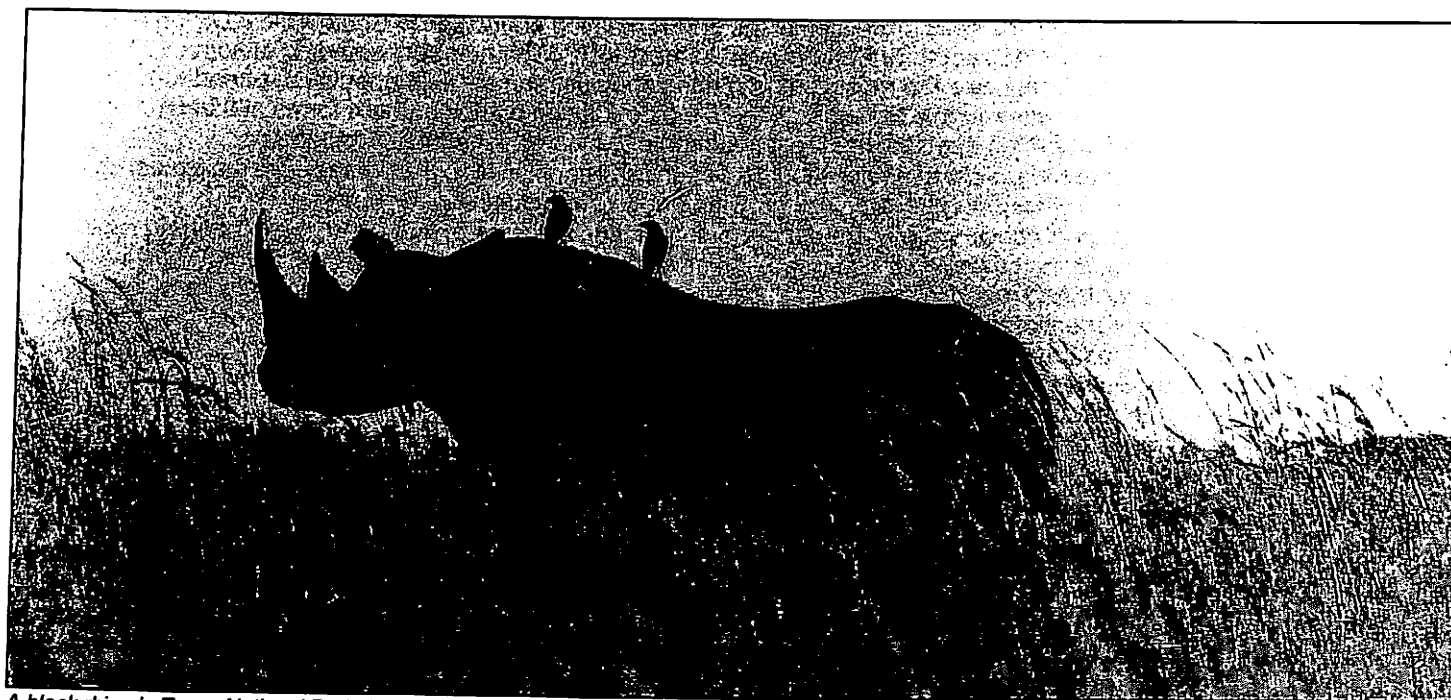
Dvur Kralove Zoo is an established rhino holder - the biggest in Europe and second largest in the world, after the Wild Animal Park, San Diego, California, USA. Rhinos have been kept here since 1970. By the end of 2009, 47 rhinos had been born at the zoo, which involved 35 black rhinos (*Diceros bicornis michaeli*), 5 northern white rhinos (*Ceratotherium simum cottoni*), 3 southern white rhinos (*Ceratotherium simum simum*), 1 subspecific hybrid white rhino (*C. s. simum* x *C. s. cottoni*) and 3 Indian rhinos (*Rhinoceros unicornis*).

This book is to summarise the breeding history of three rhino species in Dvur Kralove, as well as the zoo's involvement in conservation activities, more specifically, the reintroduction of the black rhino into Tanzania and the northern white rhino conservation project.

The history of the rhinoceros collection in Dvur Kralove Zoo is outlined in the table on page 7.

Development of wild rhino numbers since 1985

Species	1985 (PENNY 1988)	1993 (FOOSE 1993)	1999 (EMSLIE 2000)	2007 (EMSLIE 2008a)	2009 (MILLIKEN et al. 2009)
Black rhinoceros <i>Diceros bicornis</i>	8,800	< 2,400	2,704	4,240	4,280
White rhinoceros <i>Ceratotherium simum</i>	3,937	5,700	10,405	17,500	17,480
African species	12,737	8,100	13,109	21,740	21,760
Indian rhinoceros <i>Rhinoceros unicornis</i>	1,893	2,000	2,520	2,565	2,800
Javan rhinoceros <i>Rhinoceros sondaicus</i>	50 ?	< 100	60	50	38-49
Sumatran rhinoceros <i>Didemnoceros sumatrensis</i>	483-877	800	300	280-320	160-300 ?
Asian species	2,426-2,820	2,900	2,880	2,895-2,935	2,960-3,100
TOTAL	15,163-15,857	< 11,000	15,989	24,635-24,675	24,758-24,909



A black rhino in Tsavo National Park, Kenya, the 1970s (jov)

History of the rhinoceros collection at Dvur Kralove Zoo prior to 31 December 2009

(Completed and elaborated by HOLECKOVA 1996) (1.0 - male, 0.1 - female)

YEAR	Total imported	Imported from the wild	Imported from captivity	Total born	Total died	Total left	Total left for the wild	Status as per 31 Dec
1970	6 (2.4)	6 (2.4)	-	-	-	-	-	6 (2.4)
1971	10 (4.6)	10 (4.6)	-	-	-	-	-	16 (6.10)
1972	5 (1.4)	5 (1.4)	-	-	1 (1.0)	2 (1.1)	-	18 (5.13)
1973	2 (1.1)	2 (1.1)	-	-	-	-	-	20 (6.14)
1974	3 (1.2)	3 (1.2)	-	-	-	4 (2.2)	-	19 (5.14)
1975	6 (2.4)	6 (2.4)	-	-	-	-	-	25 (7.18)
1976	-	-	-	1 (1.0)	1 (1.0)	3 (1.2)	-	22 (6.12)
1977	2 (0.2)	1 (0.1)	1 (0.1)	2 (0.2)	-	-	-	26 (6.20)
1978	1 (1.0)	-	1 (1.0)	3 (1.2)	4 (1.3)	-	-	26 (7.19)
1979	1 (0.1)	-	1 (0.1)	1 (1.0)	1 (1.0)	4 (1.3)	-	23 (5.18)
1980	1 (0.1)	-	1 (0.1)	1 (1.0)	-	7 (2.5)	-	18 (5.13)
1981	1 (1.0)	-	1 (1.0)	-	1 (0.1)	-	-	18 (6.12)
1982	-	-	-	-	1 (0.1)	-	-	17 (6.11)
1983	-	-	-	1 (0.1)	-	1 (0.1)	-	17 (6.11)
1984	-	-	-	2 (1.1)	-	-	-	19 (7.12)
1985	-	-	-	-	-	-	-	19 (7.12)
1986	1 (1.0)	-	1 (1.0)	2 (1.1)	1 (0.1)	-	-	21 (9.12)
1987	-	-	-	1 (1.0)	-	-	-	22 (10.12)
1988	-	-	-	-	-	-	-	22 (10.12)
1989	-	-	-	3 (1.2)	-	5 (3.2)	-	20 (8.12)
1990	3 (2.1)	-	3 (2.1)	1 (0.1)	1 (0.1)	1 (1.0)	-	22 (8.14)
1991	-	-	-	3 (2.1)	1 (0.1)	1 (0.1)	-	23 (10.13)
1992	2 (2.0)	-	2 (2.0)	3 (0.3)	1 (0.1)	2 (2.0)	-	25 (10.15)
1993	1 (1.0)	-	1 (1.0)	-	-	1 (1.0)	-	25 (10.15)
1994	-	-	-	3 (1.2)	1 (0.1)	2 (1.1)	-	25 (10.15)
1995	-	-	-	1 (1.0)	1 (1.0)	1 (0.1)	-	24 (10.14)
1996	-	-	-	1 (0.1)	3 (1.2)	3 (2.1)	-	19 (7.12)
1997	-	-	-	4 (0.4)	-	-	-	22 (7.15)

YEAR	Total imported	Imported from the wild	Imported from captivity	Total born	Total died	Total left	Total left for the wild	Status as per 31 Dec
1998	1 (1.0)	-	1 (1.0)	1 (0.1)	-	-	-	24 (8.16)
1999	-	-	-	-	1 (1.0)	1 (0.1)	-	22 (7.15)
2000	-	-	-	3 (1.2)	-	-	-	25 (8.17)
2001	1 (1.0)	-	1 (1.0)	-	-	1(0.1)	-	25 (9.16)
2002	-	-	-	2 (0.2)	1 (0.1)	-	-	26 (9.17)
2003	-	-	-	-	-	-	-	26 (9.17)
2004	-	-	-	1 (0.1)	1 (0.1)	-	-	26 (9.17)
2005	-	-	-	1 (0.1)	-	2 (1.1)	-	25 (8.17)
2006	-	-	-	2 (1.1)	2 (1.1)	2 (2.0)	-	24 (7.17)
2007	-	-	-	3 (3.0)	4 (2.2)	1 (1.0)	-	22 (7.15)
2008	3 (3.0)	-	3 (3.0)	-	-	-	-	25 (10.15)
2009	-	-	-	2 (0.2)	2 (0.2)	9 (4.5)	7 (4.3)	16 (6.10)
Total	50 (24.26)	33 (11.12)	17 (13.14)	48 (17.31)	29 (11.18)	53 (25.28)	7 (4.3)	-



(zc)

Acknowledgments

At this point, I would like to thank all the rhino keepers in Dvur Kralove for their daily scrupulous care and management, for animal weighing and obtaining the data presented in this publication. More specifically, my thanks go in particular to keepers Mirek Svital-sky, Jan Zdarek, Ing Pavel Petrzilek, Radek Jaros, Mirek Maslo, Milan Skorepa, Jirka Kabat, Oldrich Vyhledal, Martin Kober, Zde-nek Vondra, Martin Vyhledal, Jirka Novak, Mirek Pochyly, Radek Hlavka, Vlastimil Hajek and Roman Lar. Thanks to the precise record keeping in logbooks, even many important details could be traced back. I thank all the rhino keepers who have passed through the rhino section in the period of review for their accurate record keeping.

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In addition, providing the most recent data is something I need to thank for Dr Reinhard Frese of Berlin Zoo, International African Rhino studbook keeper.

Last but not least, I thank for the information received from colleagues from the Czech and Slovak zoos holding rhinos.



(zc)



Keeper Ivan Ringl with a southern white rhino (pb)



Keeper Miroslav Svitalsky with northern white rhinos (zc)



MVDr Jiri Vahala anaesthetising a rhino, 1986 (zc)



A four-month-old black rhino (dh)

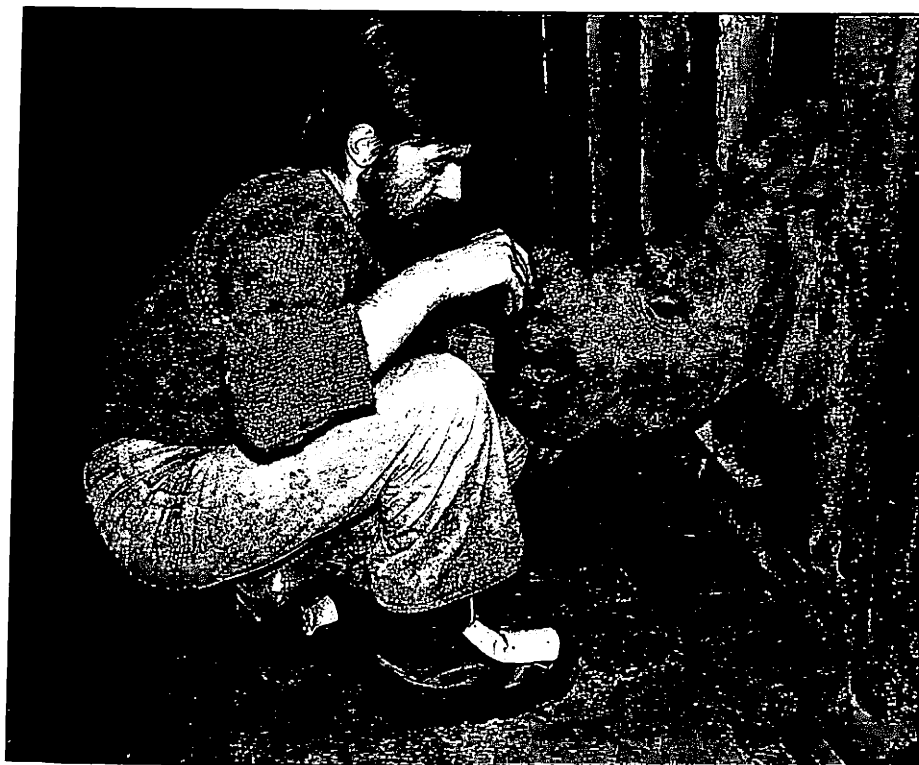
Dedicated to Miroslav Svitalsky

This book is inscribed to Miroslav Svitalsky, who devoted his professional life to rhinos held at the Dvur Kralove Zoo. Miroslav began caring for rhinos at the time of their arrival to the zoo. He took care of them as they were growing up, standing behind every breeding success until his untimely death. His work became his fate, with Miroslav paying the highest price for his unselfish efforts to make the northern white rhinos reproduce. In this person, Dvur Kralove Zoo lost one of their best keepers, who could be without any doubt ranked amongst the absolute world elite in the field. Many figures and details shown in this book would not exist without his observations and accurate records in breeding logs.

Dvur Kralove nad Labem, December 2009

Dana Holcova

RNDr Dana Holeckova
Director
Dvur Kralove Zoo



Miroslav Svitalsky with a half-year-old northern white rhino female Nabire DK 6, 11 February 1984 (lh)

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