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TITLE: The White Rhinoceros (Ceratotherium simum) - A Bibliography

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Provided by Wendy Stroud, Audubon Park and Zoological Garden

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BIBLIOGRAPHY ON THE WHITE RHINOCEROS (CERATOTHERIUM SIMUM)

GENERAL


A general discussion of Ceratotherium simum including data on distribution, fossil record, form, function, reproduction, ecology, behavior and genetics.

A discussion and description of the differences between the two subspecies of Ceratotherium and analysis of the evolution of the species.

General husbandry, nutrition, breeding, handling and transportation, clinical pathology, parasites, and systemic medicine for captive rhinoceroses.

Comprehensive results of a three and one half year study of the social system of two thousand white rhinoceroses in Zululand's Umfolozi Game Reserve. Included are discussions on evolution, physiology, ecology, morphology, nutrition and reproduction.


MORPHOLOGY AND PHYSIOLOGY


This is the first presentation of histological details of the visera of Ceratotherium.


The range of normal histological variation shown by the several node-groups is given for Ceratotherium simum. All nodes proved to be of the haemolymph variety.


A description of certain preputial glands found in Ceratotherium but not found in Diceros. These glands are constructed of a dense mass of lymphoid tissue with a large eccrine sweat gland embedded within. In the central depression on the papilla lies the ostium of the gland duct.


-----. 1979a. The rhinoceros faucial and laryngo-pharyngeal tonsils." *Journal of Zoology*, 187(4):471-504. A description and discussion of the tonsillar formations in the lateral food channel of the rhinoceros including *Ceratotherium simum*. Also discussed is the anatomy and morphologic significance of the hitherto unrecognized organ, the laryngopharyngeal tonsil which is functionally supplemental to the faucial tonsil.

-----. 1979b. The mammalian temporo pterygoid ligament. *Journal of Zoology*, 188(4):517-532. A structural and functional account of the generally unrecognized fascial ligament, the temporo-pterigoidium found in eutherian mammals, including *Ceratotherium simum*. This ligament is responsible for the development of the Eustachian process and hammular process to which it is attached.


[See also Groves 1972 and Owen-Smith 1975 in the General Section.]

**SOCIAL BEHAVIOR**


Owen-Smith, N. 1971. Territoriality in the white rhinoceros (*Ceratotherium simum*). *Nature* (London), 251:294-296. A discussion of the territorial system of *Ceratotherium simum* which is based on a space-correlated dominance
relationship in which breeding bulls defend individual areas against rivals, but will share these areas with subordinates.

A brief summary of a motion picture that shows the results of the field study of white rhinoceros social organization and territoriality.


Territoriality discussion including data on range exclusivity and sharing, dominance interactions, scent markings, reproductive exclusivity and methodological criteria for territoriality.


[See also Groves 1972 and Owen-Smith 1975 in the General Section.]

PATHOLOGY AND MEDICAL CARE

A discussion of the parasitization of Ceratotherium simum by two different species of piroplasms. The parasites are (1) either a Theileria or a small Babesia sp. and (2) a large Babesia. This is the first recorded incidence of a large Babesia in white rhinoceroses.

A discussion of the treatment of eight square-lipped rhinoceroses with dimethyl-hydroxytrichloroethyl phosphonate and the parasitical evidence obtained from pre- and post-treatment fecal egg counts.

DeVos, V. 1975. Death due to volvulus in a white rhinoceros (Ceratotherium simum) from the Kruger
Frape, D.L., M.G. Tuck, N.H. Sutcliffe and D.B. Jones. 1982. Use of inert markers in the measurement of the digestibility of cubed concentrates and of hay given in several proportions to the pony horse Equus caballus and white rhinoceros Diceros simum. Comp. Biochem Physiol. and Comp. Physiol., 72(1):77-84. The rate of passage of chromic oxide was similar in the pony and rhinoceros. Using 4N-HCl-insoluble ash, higher amounts digested were found. Normal conditions were maintained when rhinoceroses received 109KJ apparent DE per kg bodyweight daily.


neoplastic diseases of wild animals.


A discussion of the use of Xylazine and Rompun as a sedative for ungulates including Ceratotherium simum. Included are recommended techniques, darting procedures, general effects, disadvantages, problems, and combinations with other drugs.


An analysis of the hematology, serum chemistry, plasma proteins and serum hormones of Ceratotherium simum.


[See also Jones 1979 and Owen-Smith 1975 in the General Section.]

REPRODUCTION AND GROWTH


1972. Birth and growth of a male white rhinoceros at Hanover Zoo. *Int. Zoo Yearbook*, 12:122-123. Discussion and tabular comparisons of the growth during the first nine months of a male white rhinoceros born at Hanover Zoo, a male black rhinoceros born at Hanover and a female white rhinoceros born at Pretoria. Included in the tables are height, length of body, horns, ears, head and tail, girth, and weight.


Eriksen, Erik. 1977. Birth of two white rhinoceroses (*Ceratotherium simum simum*) at the Copenhagen Zoo. *Zool Garten. N.F.*, Jena, 47(1):33-44. A description of the mating and parturition of two white rhinoceros females and a discussion of the first three months post-partum behavior of the females and that of their calves. Emphasizes that the facilities at the Copenhagen Zoo are more restricted than the facilities that have had successful rhino births.


Schaurte, W.T. 1969. On the birth of a square-lipped rhinoceros (*Ceratotherium simum simum*) in the

A discussion of the birth of a white rhinoceros and lists the exact gestation period to have been 484 days. In German.


A short review of the birth and post-natal behavior of a male calf at Pretoria Zoo.


A description of diet, body measurements, tooth eruption, heart rate and temperature of a captive female white rhinoceros calf.

[See also Groves 1972, Jones 1979 and Owen-Smith 1975 in the General Section.]

**IMMOBILIZATION AND TRANSLOCATION**


Keep, M.E. 1971. Etorphine Hydro Chloride antagonists used in the capture of the white rhinoceros (Ceratotherium simum simum). Lammergeyer, 13:60-68. The methods of capture, dosages of various drugs used and the efficiency of each antagonist in allowing white rhinoceroses to rise after administration is discussed.


------. 1975. The use of Etorphine Hydrochloride (M-99 Reckitt), Fentanyl (Janssen) and Hyoscine HydroBromide combination for the field capture of white rhinoceroses. Lammergeyer, 19:28-30. Discussion and data on the use of various immobilizing drugs and their antidotes on white rhinoceroses.


[See also Jones 1979 in the General Section.]

MISCELLANEOUS


A list of the number of southern and northern white rhinoceroses in captivity and their locations.


A short discussion on the dwindling number of rhinos due to poaching and political struggles. In Uganda, the population is down from five hundred in 1971 to two. South Africa, where the situation is much better, now refuses to supply Kenya with more whites because of the risks.


Growth rates of *Ceratotherium simum simum* decelerated in captive stock since the explosive growth rate during 1971-72, but, there has still been a two-fold increase in captive stock. The Jan. 1977 International Studbook lists 351 white (Northern and Southern) rhinos in captivity. The birth rate in whites is increasing with the most success at San Diego Wild Animal Park (11.9) and Whipsnade Park (6.5) where whites are kept in large naturalistic...
environments. With increased birth rates few animals need to be taken. The average age of captive rhinos is low, especially for females, which means that the captive birth rate should continue to rise.


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