after the five-day-period there's also be taken blood samples of each animal.

The samples shall be anaiyzed at the laboratories of the university in Leipzig.

## Ethological contribution to the White rhinoceros (*Ceratotherium simum simum*) reproduction in captivity.

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The RŻserve Africaine de Sigean exhibits three White rhinoceros (*Ceratotherium simum simum*), which have never reproduced. This study involved leaving, progressively, the animals together as long as possible, to find out what would be the consequences on their time budget, but especially on their reproduction. To determine the females reproductive cycles, analysis of the progesterone metabolite have been made.

Leaving them together have changed their daily activity pattern. Concerning reproduction, the male tends to be less aggressive in presence of the females all day long, whereas both females show constant aggression toward the male. The female hormone analysis data indicated the absence of any reproductive cycle, which could explain the constant number of offensive interactions against the male observed per hour, during the analysis time. Finally, the male's behavior is more elated to reproduction while not being separated from the females.

**Key words:**

White rhinoceros, reproduction in captivity, agonistic interactions, behavior related with reproduction, time budget.

## An Experimental Study of Foraging in a Group of Bongo (*Tragelaphus euryceros*) at Nürnberg Zoo

*Gabriele Volkmann, Master Thesis, Zoologischen Institu tder Friedrich-Alexander-Universität Erlangen-Nürnberg, 2000, Supervisor: PD Dr. Udo Gansloßer*

In the following paper the feeding behaviour of the Bongo-antelope was tested. This was practised with a group of bongos (1; 2; 3) in the zoo of Nuremburg. I explored five normal and four various changed feeding situations. For the normal situations (1; 3; 5; 7 and 9) the animals were fed with fresh grass in their enclosure. During the various situations in each case a new kind of food was put into the enclosure: These were feeding branches in situation 2 and I put apples and carrots into the enclosure in situation 4. During situation 6 the grass was replaced by hay and white beet. In situation 8 the grass was supplemented by pellets, fruits and vegetables.

The effects of the new feeding types on different behavioural patterns had to be investigated. First I examined, if the animals fed more or less grass during the new feeding situations. Then I tested the influence of the new food on the activity of the study animals. The following behavioural patterns were examined here: standing, lying, walking and chewing the cud. Besides I examined the influence to one stereotype behaviour, "licking the fence". Additionally the social interactions were observed. These were aggressions, retreat and sociopositive interactions. I also investigated the group cohesion (social distances; being alone or close to the animal X).

All behavioural patterns, except the social interactions, were compared with each other for every animal. Additionally the animals were compared with each other in every feeding situation.

The amount of grass eaten by the animals depended on the quality of the new food. White beet, pellets, fruits and vegetables are more concentrated and lower fibrious than feeding branches and hay. The amount of grass being eaten was influenced more by fibrious kinds of food than by the concentrated food.

The individuals of the group did not take the same period of time to feed the new food. There were differences depending upon the popularity of the food and the rank position of each individual within the group. The male bongo and the juveniles eat longer of these kinds of food than the two female bongos.

The activity of the animals was not influenced by the feeding situations. The individuals showed many differences in their individual activities. The male and the juveniles were lying much more than the females.

The behavioural pattern "chewing the cud" was correlated with the behavioural pattern "lying". There are nearly the same results here, especially within the comparisons of the animals with each other. Chewing the cud is dependig upon the kind of food given to the animals. The stereotype behaviour of "licking the fences" was a special problem of one of the females. During the new feeding situations this behaviour pattern decreased.

The social behaviour has also been influenced by the new feeding situations. The aggressive behavioural patterns, being shown by all individuals, increased. The amount of retreat increased too. With this behavioural pattern I found out the rank position of each individual within the group. The highest rank was occupied by the male. The juveniles were nearly not affected by the adults' rank positions. The sociopositive interactions have