

## UP TO MY EARS IN RHINOS

By Robert W. Godfrey

It would be nice if the title of this article were true. Unfortunately, it is not, and there is an urgent need to gain more knowledge about rhino reproductive physiology. It is hoped that the techniques of artificial insemination (AI) and embryo transfer (ET) can be utilized to increase the population size of captive and, eventually, wild rhinos. In order to successfully utilize these procedures, some knowledge of the anatomy of the female reproductive tract will be necessary.

Over the past year, several reproductive tracts from female black and white rhinos have been obtained at necropsy. Linear measurement of the tracts as well as any pertinent physical attributes were recorded for all five of the tracts. It appears that the major obstacle to be overcome is the overall length of the tract. In mature black and white rhinos, the entire tract was approximately 100 cm in length, which makes rectal palpation of ovaries somewhat difficult unless the palpator has long arms. In order to conduct transrectal ultrasound examinations, researchers are currently evaluating extensions for use with ultrasound probes. It is hoped that the extensions will provide sufficient length to examine the ovaries. The distance from the vulva to the cervix averaged 40 cm in length. The cervix itself was not exceedingly long (averaging 14 cm), but the path through the cervix appeared extremely tortuous. The cervical canals of three mature rhinos (one black, two white) contained five to six folds of tissue which formed eccentric rings. The cervical lumen contained several 90° turns and blind pockets which could be difficult to navigate with a catheter for placement of semen or collection and placement of embryos.

All of the tracts collected had a constriction in the posterior urogenital canal, just anterior to the urethra. This hymenal membrane was in various states of patency which appeared to be related to age and parity of the animal. The older animals had large (1 to 3 cm) perforations in the membrane, while the hymen in a seven-day-old calf tract contained much smaller holes (< 1mm). A primiparous white rhino examined had remnants of a hymen visible in the tract at the same location of the intact membrane in the other tracts.

Two of the older animals (one 28-year-old black rhino and a 27-year-old white rhino) had what appeared to be hyperplasia of the endometrium. It was more pronounced in the white rhino uterus, but the animal had been stimulated with exogenous hormones (gonadotropins and progestins) which may have accentuated this condition. The hyperplasia was not as pronounced in the black rhino tract, but it was uniform throughout both uterine horns, as in the white rhino tract. It is uncertain if this condition is related to the fertility of these animals. Another white rhino (21-year-old, primiparous) did not exhibit any signs of endometrial hyperplasia. It was also not apparent in the three-year-old and seven-day-old black rhino tracts.

It is obvious that the overall length of the female rhino reproductive tract will be a major obstacle to overcome in order to utilize assisted reproductive techniques in these species. The ability to navigate through the cervix will also be a factor to consider when developing and attempting AI and ET procedures. Future projects will need to develop procedures for dealing with the peculiarities of rhino reproductive anatomy if AI and ET are to be used successfully.

## ENCOURAGING NEWS FROM ZAIRE

By Robert W. Reece

Highly motivated personnel, new management, and the financial help of the World Wide Fund for Nature and the Frankfurt Zoological Society are being cited for the recent successes with northern white rhino in Garamba National Park in Zaire. The 3,000 square mile park in northeastern Zaire is home to the last remaining wild northern white rhino.

Unfortunately, throughout much of the park's 50-year existence, poaching of rhino and other animals was rampant. By 1983, only 15 northern white rhino remained. Since 1984, no rhinos have been poached in the park. Even more encouraging is the news that ten rhinos, four in the last year, have been born during that same period, bringing the total population to 26.

Dr. Kes Hillman-Smith, a dedicated researcher and long-time advisor to Garamba, credits the new park warden, Dr. Muhindo Mesi, with instilling new leadership and innovation. In addition to curtailing the poaching, he has developed an educational program for the villagers who live on the outskirts of the park.

According to Muhindo Mesi, the guards remain the first line of defense. Though better paid and equipped, those now employed to protect the rhino work much harder than did their predecessors under the previous management. As a result, recruiting good employees has been more difficult. Much remains to be done, but everyone involved in the Garamba effort can be extremely proud of their achievements.

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and providing management advice to the conservation authorities. It will also identify research and conservation priorities for black rhino as a guide for the funding organizations. We strongly believe that the cooperative spirit of the plan, its strategies, and the activities of the RMG will greatly enhance the survival prospects of the black rhino, both in southern Africa, and in the rest of Africa.

AROUND THE HORN is published by Kings Island Wild Animal Habitat in association with the Cincinnati Zoo Center for Reproduction of Endangered Wildlife.

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PRINTED ON RECYCLED PAPER