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Session II. 3: Breeding and Management of large mammals

Breeding and Management of African Black Rhinoceros at Mysore Zoo

By C. D. Krishne Gowda, Director

About two decades back, the total number of Black Rhinoceros (Diceros bicornis) were more than the other species of Rhinoceros. During that time the figure for the whole of Africa lies between 12,000 and 20,000 dominating the major population in Kenya, Tanzania, Zambia and Rhodesia. Smaller population are thought to survive in Uganda, South and Central Africa.

Today the population of the Black rhinoceros is fast dwinding due to indescriminate poaching for its horn value. Habitat destruction has also eliminated them in big numbers from its wild range. Probably only a few hundred are left in the wild.

Since the number of wild Black rhinoceros are now seriously depleted, utmost care has to be taken to preserve this precious species in its natural habitat. On account of this factor, the procurement of Black rhinoceros from the wild is almost impossible. If the species is still to remain as part of Zoo, it seems necessary that the population already in captivity be managed with the aim of making it eventually self-sufficient.

Breeding Black rhinoceros in the captivity is not uncommonly difficult: adequate nutrition and housing together with rational management based on sound knowledge of their reproductive behaviour usually produce results. Black rhinoceros had bred regularly in some collections for a number of years. But in recent years the number of Black rhinoceros is decreasing in Zoos also. Therefore urgent effort is necessary to step up the production of Black rhinoceros in captivity.

In Mysore Zoo the first attempt was made to breed the Black rhinoceros 2½ decades back and The propagation of this rare species is being continued.

The pair of Black rhinoceros (Diceros bicornis) at Mysore Zoo arrived at the Zoo on 17th January, 1956, from L. Ruhe, Hanover. When they were procured they were housed in a old small enclosure which was measuring 60 feet in length and width about 30 feet which is partitioned by bifurcated wall. The male was about six years old and the female about eight years old The male was smaller than the female and appeared stunted. He was fed specially nutritious food, together with five multivitamin capsules, 28 g. multivitamin syrup and 10 Calcium Gluconate tablets given daily between 9th March, 1962 and 31st May, 1962. His general condition improved considerably after this treatment.

The two rhinos are kept in an enclosure divided by a wall. They can move freely between the two enclosures and the dens that are attached to them.

From the time she arrived at the zoo the female regularly came into oestrus. The cycle was from 30-35 days and each oestrus lasted from 24 to 48 hours. During oestrus she was much more excitable, made a whistling noise and frequently u At this time she allowed the male to mu However, the male was not sexually arouse and they never mated.

As both rhinos were mature, it was de administer hormone treatment to the mal hope of making him sexually potent. February, 1963 a course of Testoviron (test propionate) was started. For six days he w five Testoviron tablets, powdered and mi bananas, three times daily. Sprouting Beng which contains oestrogenic subtances, v fed, together with the normal feed (bo oats, wheat bran, carrots and cabbage). February the male had a partial erectio penis: this had never been observed in A second course of treatment was admini six days from 24th February. Soon after was seen caressing the female. A third treatment was administered from 16th Ap fourth and last course from 13th Augu August.

Meanwhile the female was seen to be on the morning of 16th August. The male to her by erecting the penis to its full about 75 cm and attempted to copulate female. As she was sitting down, the p not be inserted fully into the vagina. F onwards whenever the female was in o approached the male, he would erect his rub it over her genital area. Once aga September, 1964 when the female was the male tried to copulate with her, but she was sitting down and the att unsuccessful. On 26th April, 1965 when was in oestrus the male copulated with h fully for the first time. Copulation lasted 20 minutes. On 26th May a second copulation, also lasting for about 20 mi place. After this the female did not oestrus again.

From then onwards both rhinos li together; the female particularly was aggressive and stopped chasing the remained aloof from him.

On 23rd December 1965 it was r the female's mammae, abdomen and ge swollen and these were taken to be defir pregnancy.

On 25th August, 1966 it was noti female had chosen the more secluded dens where she was less disturbed by tried to drive the male into the oth became increasingly restless. She frequ to the partition to peep at the male and enter her den, she drove him out

rumbling noises. The door between the two dens was therefore closed and the female shut off from the public. She then calmed down.

On 26th August milk was seen oozing from her two mammae. A Viscous fluid was also discharged from the vagina. At about 12.00 hours she lay down in a corner of the den and birth contractions started. The amniotic membrane was seen at 13.45 hours. It burst at 13 55 hours and the amniotic fluid was discharged onto the floor. The baby rhino's front legs were now visible at 14.15 hours the baby rhino was born, the mother lying on the floor. The gestation period, from the last day of the last observed oestrus to the day of the birth was 458 days.

The baby was immediately licked by the mother. It was fully developed and active. Its body was hairless, except for the lining of the ears and the end of the tail. There were two white patches on the head; the growing sites of the horns. The front girth was slightly raised. At 14.30 hours the calf started trying to struggle to its feet. It succeeded in standing at 15.00 hours. At about 15.20 hours the calf started looking for the mammae. At 15.30 hours it was able to walk slowly. It suckled for five minutes for the first time at 16.35 hours. It suckled again at 17.00 hours, at 17.20 hours and at 18 00 hours. After the second feed it became increasingly active, following its mother.

The placenta, which had been hanging from the vulva dropped away at 18.00 hours.

On 27th August the calf was seen suckling at 18.00 hours. From then onwards it suckled about every one or two hours. By 28th August this interval had increased to 2-2½ hours, by 29th August 3 hours and by 30th August 3-4 hours.

The baby Rhino was named as Ganesh. it survived for about one year and died due to Pneumonia.

After they started breeding, it was felt the need of a large spacious enclosure with natural set up had to be provided. An area to the extent of 5 acres with a pond adjoining to the old enclosure with allround moat was constructed. In the newly built moat the Rhinoceros are able to move freely and to browse in the spacious enclosure. The old enclosure is being used for pregnant Rhinoceros to ensure privacy and also for calving and to rear young ones.

On 1—10—1972, Mary and Jacky gave birth for a male baby Rhino named as Gunda, it survived.

Again on 29—10—75, Mary and Jackey gave birth for a female baby, named Prema, it also survived.

On 14—3—79, Gowri born to Mary and Jackey, survived.

On 3—5—1983 Mary and Jackey give birth to a male baby which was named as Gajendra, survived.

Baby Laxmi born on 2—4—1984 to Gunda and Prema but died later.

Again Gunda and Prema gave birth to a male baby Mara I on 24—11 - 1988, survived.

The original male Jackey died on 3—2—1983 after completing 30 years longevity in captivity.

The original female Mary died on 8—7—1986, after completing 33 years longevity in captivity.

Total Birth of Black Rhinoceros is eight numbers. Out of this two have died and six are surviving with good health. One of the female Rhinoceros has conceived and expecting birth. The survival and birth rate of Black Rhinoceros is higher.

Summary

With diminishing wild population of the Black Rhinoceros, the maintenance and breeding the species in captivity becomes increasingly important.

Session II. 4: Importance of Small Vertebrates

Notes on Non-charismatic Mini-vertebrates

By Roland Wirth and Michael Ounsted

Roland Wirth: I am the Chairman of the Mustelid and Vivverid Group of the Special Survival Groups in the Species Survival Commission. We are in process of constructing Action Plans for different endangered species in order to set priorities and identify which ones are most in need of attention. I have a couple of copies of the Action Plan for Mustelids and Vivverids which I will leave here.

In our enthusiasm for saving the tiger, the lion, and the rhino - the "charasmatic megavertebrates" as Jeremy Mallinson referred them - there is a real danger of some of the smaller and less dramatic animals becoming extinct without anyone even noticing. These animals are as important to maintenance of the health of the ecosystem as the larger species.

One of the Indian species that comes under my committee is the Nilgiri Martin which has been sighted only a few times in the last 10 years and occurs in the western ghats. Mainly what I wanted to convey is that we of the Species Survival Group are collecting all possible information on any of the mustelid or vivverid species and the Nilgiri marten in particular and would appreciate your communicating with us if you have anything. If you come across one of these in your field work or you see one in a zoo somewhere, we would like to know. Only by being fully informed can we formulate an effective Action Plan. And this doesn't apply just to mustelids and vivverids, but to any of the endangered species. Thank you.

Mr. Michael Ounsted: I'd like to pick up on a point that was raised by Dr. Wirth and that is that at this Conference no one has talked much about