

# Birth of Rhino Calves in Kanpur Zoo

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|         |   |
|---------|---|
| Class   | Mammalia                                |
| Order   | Perissodactyla                          |
| Family  | Rhinocerotidae                          |
| Genera  | 1. Ceratotherium simus                  |
| &       | (White Rhinoceros)                      |
| Species | 2. Dicerorhinus sumatrensis             |
|         | (Sumatran Rhinoceros)                   |
|         | 3. Digerous bicornis (Black Rhinoceros) |
|         | 4. Rhinoceros sondaicus                 |
|         | (Javan Rhinoceros)                      |
|         | 5. Rhinoceros Unicornis                 |
|         | (Indian Rhinoceros)                     |

The family Rhinocerotidae has five species of rhinoceros. Two of these species - Black & White are confined to Africa. Among the other three Asiatic species, the Javan Rhinoceros and the Sumatran rhinoceros are almost extinct, while the third Asiatic species, the great Indian one horned Rhinoceros is one of the largest of all living species. It is, however, a vanishing and endangered breed now.

The Indian rhinoceros are up to 6 ft. 4 inches in height and in weight up to 2000 to 2500 kg. Rhinos are characterised by massive bodies & short legs, which end on broad three toed feet with pad. The animal has a deeply folded skin studded with raised knobs, not much body hair except a stiff brush of tail tip and a single horn. The horn is located above the thick, rough areas of fused nasal bones and the horny material is composed of keratinized cells growing from the epidermis and covering a cluster of long dermal papillae. Since they are a continuous growth, if broken off they ordinarily present no problem, for there is no real skeletal support. Regrowth begins immediately. Rhinos are short-sighted but have an acute sense of smell and hearing.

Indian rhinos have glands in the fore feet which leave scent trails in addition to those of the dung. Deposition of feces in special place is a common habit of Rhinos in captivity. This is advantageous in the maintenance of sanitation. Male rhinos, normally eject urine towards the rear, often with such force that it may carry several feet. They run at 25 mph with the tail held down.

Formerly the great Indian Rhinoceros was extensively distributed throughout the Gangetic plain, but today it is restricted to Assam, parts of Nepal & West Bengal. Recently they have also been rehabilitated at Dudhwa National Park in District Lakhimpur Kheri in Uttar Pradesh.

Until recently breeding of Indian rhinoceros was rare in Zoological Parks. Among Indian Zoos

the Indian rhinoceros has bred in Zoological Gardens of Calcutta, Mysore, Gauhati, Delhi, Hyderabad and Kanpur. These days due to critically low number in the jungles it has become very difficult to procure Indian Rhinoceros for Zoo. Procuring a breedable matching & compatible pair is a hard task and some times not achieved even with the help of money power. A big spacious enclosure with tank and moat is a necessity which acts as another limiting factor and such a suitable Rhino enclosure is a highly expensive item often posing an unsurmountable obstacle. The habit of charging and fighting between themselves specially before coitus is a bloody sight, often resulting in greivous injuries which may be even fatal. In fact owing to this phenomenon many a Zoo authority do not allow them mating.

The Kanpur Zoological Park is not an old Zoo and was opened for the public only 15 years back on 4th Feb. 1974. One pair of Indian rhinoceros was brought from Assam State Zoo Gauhati on 4-3-77 and settled in an enclosure having two indoor enclosures and a common open run of about 90 x 125' size surrounded by a dry moat 6' deep and 4' & wide. The male named 'LACHIT' was born at Gauhati Zoo on 23-5-74 out of male 'SHVAJI' and female 'PADMINI'. The female named 'MAYUNG KUMARI' was caught when 4 months old with date of birth as 11-8-75. Both lived together in Kanpur Zoo in a very nice manner and we can say that the pair is very compatible. The Rhinos reach sexual maturity at three to four



Rhino Calf and mother at Kanpur Zoo

years of age in the females and five to seven years in the males. The age of male at the time of first successful mating was seven years & female six years in Kanpur Zoo.

The pair LACHIT & MAYUNG was living together since their arrival in Kanpur Zoo. No actual mating was observed although heat periods were noted at irregular intervals from Oct. 1979 when fighting and chasing were seen. However the symptoms of pregnancy were first noted in Sept. 1981. Following is the table showing various data regarding breeding behaviour of the said pair.

TABLE

Details of breeding record of Indin Rhinoceros unicornis in Kanpur Zoological Park Kanpur.

| Date of mating | Ext. Signs of preg. marked | Date of Parturition | Gestation period | Sex & name    |
|----------------|----------------------------|---------------------|------------------|---------------|
| 30-5-81 night  | 15-9-81                    | 1-10-82             | 487 days         | female Rashmi |
| 12-8-83 night  | 1-12-84                    | 6-12-84             | 486 days         | Male Lohit    |
| 2-3-86 Day     | 15-3-87                    | 17-6-87             | 471 days         | Male Mohit    |
| 5-3-88 evening | 1-3-89                     | 23-6-89             | 474 days         | Male Rohit    |

The estrous cycles in Rhinos vary from 38 to 58 days apart characterized by frequent urination and a highly intensified respiration. The duration of estrous is approximately 24 hours with copulation taking place during the last half of the period coitus lasts half to one hour usually. It has been observed that just before and during heat the female is constantly chasing and fighting with the male for hours. In such combats both often get badly injured. In the case of the birth of the first calf of Mayung the delivery was expected some time in the first week of Oct. 1982. It may be noted that since their arrival in 1977 the male and the female were living in the same enclosure. But on 1st, Oct. 1982 suddenly the female pushed the male into the dry moat and the female exhibited signs of labour pains. With the experience in the case of first delivery in the Zoo, we separated the female from the male about 3 months before the delivery, so that no untoward incident takes place owing to their combative nature. The practice has been continuing since then in subsequent deliveries.

At the time of delivery the labour pains generally last two to three hours during which period of the female runs, sits and suddenly gets up with copious flow of mucous from her vaginal orifice. Water bag is first seen at the mouth of vulva and foetus comes out wrapped in the water bag.

Suddenly the mother gets up and the water bag is ruptured by traction of navel cord attached to placenta. Then with a jerk the calf starts breathing first irregularly and later on regularly. The total time consumed by labour pains delivery and the expulsion of placenta has been noted to be between 5 to 7 hours in our Zoo. This generalisation is based on all the four deliveries in our Zoo which have been normal. The weight of calf has been from 55 to 66 kg. at the time of birth. Placenta is expelled generally after 3 to 6 hours of delivery, and weight from 5 to 7 kg. The placenta must be immediately removed from the enclosure for other wise there is a danger female rhino eating it.

The Rhino calf starts moving after an hour and the mother allows it to suck milk after every 2 to 3 hrs. At the time of delivery when female is restless with pair it has been observed that the male also gets very much excited and starts rushing towards female by mounting over the wall. It runs here and there & tries to cross the wall & one has to physically prevent it from doing so. The new born calf of Rhino is an excellent swimmer by birth. After getting relief from delivery the mother rhino takes the rhino calf to the water pond where both of them swims for hours a days and come out only to take food. The aggressive nature of mother rhino continues for at least one month after the delivery. It can get easily irritated and may attack the intruder. The female rhino remains with the calf for at least 6 months. When the calf can live independently only. I we allow the female to go to the males enclosures. During the advanced stage of pregnancy we give extra concentrate, minerals and vitamins to the female Rhino and this is continued till the mother Rhino feeds the calf with her milk.

Our oldest rhino calf Lohit aged about 5 years has yet to sprout horns. It appears that in the captive conditions obtaining in the Zoo it takes a little long, for rhinos to develop sexual maturity, though erection, has been observed mounting on the younger calf Mohit male aged 2 yrs. May be it is simply unborn instinct of mounting so inherent among herbivores.

The Gestation period in Rhino at Kanpur Zoo has varied from 47/1 to 486 days resulting in the birth of a single calf.

FEED & FEED SUPPLIMENTS: The digestive system of the Rhino is similar to the equine with a simple stomach, small intestine & very large cecum and colon. No gall bladder is found in the animal. Its kidneys closely resemble that of bovine but are more deeply lobulated. The quantity of the concentrate varies with age, an adult Rhino is given 8 kg / day of commercial feed containing minerals & vitamins. During winter months Rhinos are given kheer in place of concentrate containing gur, groundnut, cake wheat, bran, wheat rice cooked in milk. One Qtl. or green feed is also

given daily in two parts 50 kg. of chari or Baraem & 50 kg. Sugar cane with leaves. In addition we give 3 kg Bananas carrots & cabbage also in these after noon. Fresh water for drinking is always available in the basin. Rhinos are dewormed once every three months.

The average longevity of captive rhinoceros is comparatively short although the greater span

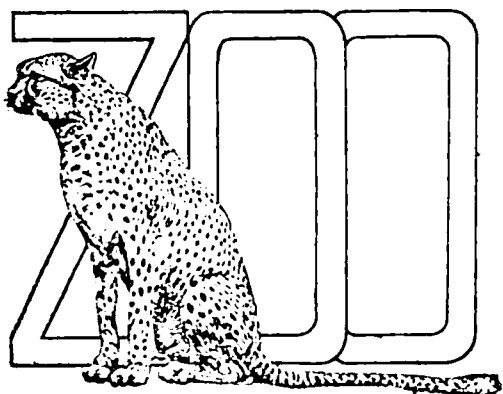
achieved by some individuals indicate that the potential maximum is much greater than the age usually reached. In Zoological gardens Rhinos have survived upto the age of 47 yrs.

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