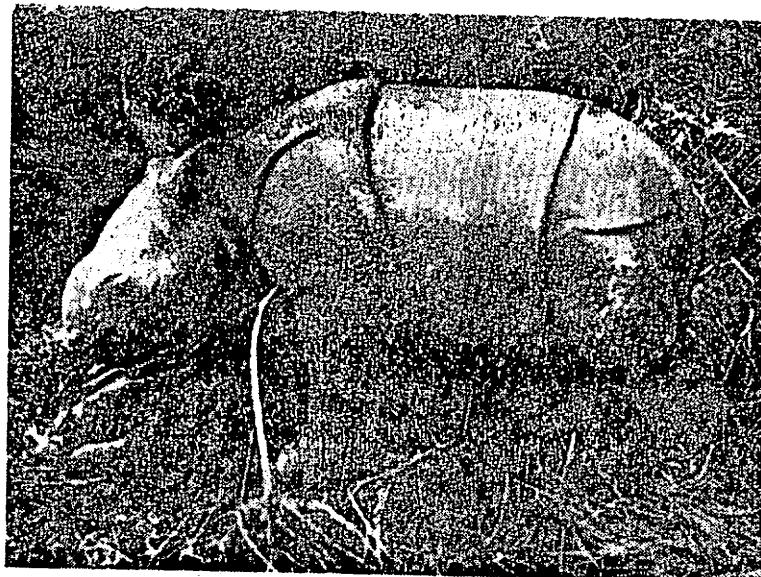


✓ Some Observations on the Process of Parturition, Neonate and Maternal Behaviour in Great Indian One Horned Rhinoceros (*Rhinoceros unicornis*.)

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New-born rhino calf at Assam State Zoo

The knowledge of the process of parturition in any species is of utmost significance from reproductive and managemental points of view. It is more so in rhinoceros, as it is one of the most valuable and rare kind of wild life. In the wild state, the mating of the rhinoceros takes place unnoticed in grazing places and the process of parturition is also accomplished. Very little knowledge has been gathered on the process of parturition, neonate and maternal behaviour of the rhinoceros. Because of the fighting behaviour among the rhinoceros particularly with the animals of opposite sex, the advanced pregnant animals need to be separated to avoid possible injury to the pregnant animal, abortion or injury to the neonate rhino calf. The present study has been conducted to gather knowledge about the process of parturition and its different sequences in captive rhinoceros to reduce the hazards mentioned.

Sanyal (1892) observed restlessness and reluctance for feeding except browsing of plants before parturition. Acute labour pain was observed before one parturition. Acute labour pain was observed before one hour of parturition. The mother did not show interest in the calf after

parturition. After one and a half hour of parturition the calf searched for nourishment with staggering gait.

Baruah (1969), reported the body length of the rhino calf at birth to be 105 cm. Schenkel and Hulliger (1969), observing the mother and newborn calf, stated that the body was light grey in colour. It followed its mother and tried to suckle when she stopped moving. The mother stood motionless for about 3 minutes for suckling. He also observed that with the exception of the first day after birth, where shorter suckling scenes were observed, suckling took about four minutes each time.

Grzimek (1972) also recorded the different aspects of labour before birth lasting for about one hour, but actual birth took place within 15-30 minutes. He also observed the height of the calf at the shoulder after birth to be 62-64 cm. Mishra (1986) observed that in rhinoceros, one calf per birth is a rule. He further noted that the female rhinoceroses are excellent mothers and in captivity most calves born have been reared. Goswami et al. (1987) reported the placenta of the rhinoceros to be of the diffuse type.

Materials and Methods

The process of parturition was studied in a primagravida One Horned Indian Rhinoceros at Assam State Zoo, Guwahati, kept for breeding purpose with her mate in permanent enclosure. Close observations were made and the data were collected. The neonate calf was separated from the mother on the second day, and biometrical study was conducted with the help of a standard measuring tape.

Result and discussion

The different symptoms to be observed in parturition are not distinct in rhinoceros, except restlessness. The actual time taken from appearance of water bag to the expulsion of foetus was 22 minutes, and the time taken from expulsion of foetus, to the expulsion placenta 190 minutes. The placenta was of the diffuse type. The findings have been given in Table 1. The newborn calf stood after 35 minutes of birth and started suckling after 50 minutes. The total body length of the foetus was found to be 105 cm. While the girth at chest and height at shoulder were 93 and 45 cm respectively. The data has been shown in Table 2. On the very first day of birth the rhino calf was found to be in a staggering gait and took time to locate the udder to suckle. It suckled perfectly only for 6 times. On the second day it could run and could climbed to a slant up of the enclosure and followed the mother. It took milk 14 times in the second day. On third day, it suckled 12 times, ran and followed the mother in water, as observed from 7 A. M. to 7 P. M. The mother was found to be very affectionate to the newly born calf. She guarded the neonate calf grazing nearby. The rhinoceros was found to lift one of the hindlegs to facilitate the calf to suckle. When the calf was separated, the mother searched for it by moving hither and thither with a grunting sound.

The present study simulates with the report cited by Sanyal (1892) where he saw restlessness and acute labour in rhinoceros before giving birth. The duration of parturition (22 minutes) was supported by the study of Grzimek (1972) found the duration of actual labour process to be 15 to 30 minutes. The placenta of rhinoceros was found to be of the diffused type, as reported by Goswami et al. (1987). The maternal behaviour including feeding the calf was very affectionate. This is in line with the study of Schenkel and Hulligen (1969), where they observed that the mother stood motionlessly to permit suckling. Mishra (1986) also put forward similar findings where he described the rhinoceros to be an excellent mother. The height (56 cm) found in this study was a bit less than that described by Grzimek (1972) to be 62-64 cm. But the length of the neonate calf (105 cm) found in this study coincides with the earlier study (Barua, 1969).

TABLE 1

Different aspects of parturition in one horned Indian Rhinoceros

1. Date of parturition	:	11.5.87
2. Age at the time of parturition	:	9 years
3. Length of gestation period	:	461 days
4. Length of labour pain	:	170 mins
5. Time taken for expulsion of foetus after appearance of water bag	:	22 mins.
6. Time taken for expulsion of placenta from expulsion of foetus	:	190 mins
7. Types of placenta	:	Diffuse type

TABLE 2

Biometrics of the newborn rhino calf

1. Colour of the calf	:	Grey white
2. Sex	:	Male
3. Total length	:	105 cm
4. Girth on chest	:	93 cm
5. Height	:	45 cm
6. Length of head	:	30 cm
7. Girth of head	:	93 cm
8. Girth of neck	:	54 cm
9. Length of tail	:	54 cm
10. Standing	:	35 mins after birth
11. Suckling	:	50 mins after birth

Summary

The process of parturition along with neonate and maternal behaviour had been studied in captive one horned Indian rhinoceros. The total time taken for the whole process found to be 382 minutes including length of labour, (170 mins) expulsion and foetus after appearance of water bag (22 mins) the expulsion of placenta (190 mins). The placenta was found to be of the diffuse type. The calf stood after 35 mins of birth and suckled after 50 mins. The rhinoceroses were found to be affectionate mothers. The length and shoulder height of the new born calf were found 105 cm and 45 cm respectively.

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References	
Ali Khan,	M. G. and Choudeury, B. C. (1987). Zoo's Print. 11 (4-5), 13-15.
Barua,	M. (1983). Silver Jubilee Souvenir Assam State Zoo, Guwahati.
Goswami,	U. C.; Bhattacharyya, B. K. and Sharma, P. K. (1987). Current Science, 54(8), 380-381.
Grzimek,	H. C. B. (1972). Animal life encyclopaedia, Von Nostrand Reinhold Company, New York, Cincinnati, Toronto, London, Melbourne.
Mishra,	G. C. (1986) On distribution abundance and breeding biology of Rhinoceros (<i>Rhinoceros unicornis</i>), Production and Management, Indian Veterinary Research Institute, Izatnagar, U. P.
Sanyal,	R. B. (1892) A Hand Book of the Management of Animals in Captivity in Lower Bengal. Bengal Secretariat Press, Calcutta. 164-167
Schenkal,	R. and Hulligen (1969). Ecology and Behaviour of Black Rhinoceros Verlag Poul Parey, Hamburg and Berlin, 91-95.



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