

MAMMALS OF NEPAL

(With Reference to those of India, Bangladesh, Bhutan and Pakistan)

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Butt: Butting is the most common form of aggression in tahr. It consists either of a push with the blunt legs or the horns or of a jab with the tips. The attack is generally directed to the neck of the opponent. Schaller observed this type of behaviour on a number of occasions (8 times, the shoulders and sides 9 times, the thighs 3 times and rump 5 times). Female also delivers most butts, usually to courting males and young butt each other several times seemingly in play.

Clash: Tahr clashes its horn in a characteristic manner. Generally one animal takes the initiative with the opponent merely catching the bout with horns, but at other times both jerked down their heads and pushed each other back and forth. Yearling males and females clash most often usually after the yearling display a low stretch. A yearling male and female also spar gently, low stretch displays, exposing the small rump patch. The anus appeared to pucker outward. The threatened animal promptly avoids this opposition. At other times, the displaying animal walked broadside to his opponent, a position which did not cause an immediate threat:

Broadside: One tahr may stand close to another with its neck stretched somewhat forward and with its muzzle held horizontally or tipped slightly up or down. Geist (1971) illustrated this posture in his book. The displaying animal either stands parallel to the other or faces in the same direction.

Head to Tail: Two young ones stood parallel and head to tail as they looked at each other's sides. On two other occasions, a female and yearling mate assumed similar positions, but circled rapidly with heads locked as if to jab.

Horning Vegetation: Tahr horn vegetation. This is characteristic of yearling males, sub-adults, and adults. Some males horned during aggressive encounters, as above example shows, but others thrashed vegetation in no particular context.

Hunch: Generally adult or sub-adult male hunch each other. Mostly his backs hunched his legs beneath him, lowered their neck either in an extended or retracted position and pointed their muzzle oblique downward. His tail was raised vertically as in a low stretch display, a position which shows off the small rump patch. The anus appeared puckered outward with hair and nape and shoulders more erect than usual, he may seldom point directly at the opponent who often responds by trotting to another male in this posture. Tahr groom themselves in conflict situations such as during courtship, when one male meets another, and when displaying broadside.

Present Status

Tahr inhabit rocky, very steep and precipitous rocky ground. This animal is most abundant in Langtang National Park. The Jageshor Kund also contains good numbers of this species. The Himalayan tahr has also been introduced to New Zealand. It is found throughout the Himalayan region around 14,000 ft. and below in precipitous terrain of cliffs and dense forest. The favourite terrain of tahr is rugged with very precipitous ravines, loose scree and large boulders. They abound above 14,300 ft. in Rasuwa, but in Dhorpatan they occur at 11,500 to 13,000 ft. altitude. In Dhorpatan area Surtibang ridge-including Chauribuke-South of Uttar Ganga and S.W. of Phagune Peak is rich in healthy populations of tahr of about 75 and 50 animals respectively (Wegge 1976).

Asiatic One Horned Rhino

Rhinoceros unicornis (Linnaeus)

Local name: Gaida

Asiatic Rhino is one of the peculiar animals of Asia and it is regarded as an apothecary of Asia. Several legends and beliefs are attached to this animal. The Rhino is mentioned in most of the great Hindu epics, e.g., Vedas and Puranas. It is regarded as a holy animal. "It is said that during the time of Babur, the King of Cambay had gifted a rhino to the Portuguese King Emmanuel. The King wanted to test this strange animal's skill. It was put in a ring with an elephant and the elephant fled the moment it spotted the one-horned creature. The king was impressed and decided to present it to Pope Leo X. However, the ship carrying the rhino was hit by a storm and capsized" (Sumati, 1976).

"In Nepal, the flesh and blood of the rhinoceros is considered highly acceptable to manes. Brahmins and people of high caste offer libation of animal's blood. In Sreddha the libation of water and milk is poured from a cup carved from its horn. The urine is considered antiseptic and is hung in a vessel at the principal door as a charm against ghosts, evil spirits and diseases. These beliefs connected with the rhinoceros are prevalent in varying forms in Burma, Siam and China. They set a great value upon the animal and provide the main reason for persecution".

S.H. Prater (1965).

The rhino has its obscure genealogical history. Three species of rhino are known in Asia, i.e., the great one-horned rhino (*Rhinoceros unicornis*) the smaller one-horned rhino (or Javan Rhino *R. sondaicus*), Asiatic two-horned rhino (*Didermoceros sumatrensis*).

All surviving population of rhino is included in a single family Rhinocerotidae. Rhinos are characterised by massive build and stumpy legs with three toes. The bone of rhino are noted for its thickness and solidity. The skin is sparsely clad with hair or is naked. The Indian and Nepalese species have heavy hide which in some places have deep folds. The nasal bones are enlarged to serve as support for a single horn or double horns. In case of two-horned species, the horns are placed one behind the other. The horn has no connection with its bony skull because it is made up of closely matted mass of horny fibre. The horns of the rhino grow throughout its life span and lost horns are reproduced.

The great Indian Rhinoceros: The Indian rhino *Rhinoceros unicornis* Linnaeus is one of the largest species of rhinoceros. It once had a wide range of distribution but now its range is confined to isolated jungles. According to Gee (1968) in Mohenjodaro era (5,000 years ago), the Rhino occurred by burning, cutting and overgrazing in this area. During the Islamic invasion of 1438, the Rhino was published to the western range towards the border to Kashmir. In the middle of the last century, the rhino became extinct in the Ganges valley and by 1880 its western limit was Nepal.

A male Great Indian Rhino may stand over 6 ft. (180 cm.) at the shoulder with an average height of about 5 ft. 8 in (17 cm.). Behind the wither its girth is near about 11 ft. (335 cm.), and the Rhino horn measures 24 in. (61 cm.),

The skin of a Rhino is divided into shields by heavy folds at fore and hind quarter of the body in front of the thighs. The skin folds of the shoulder, however, do not reach across the back. Folds of the flanks, shoulders, and hind quarters have skin studded with masses of



One horned rhino (*Rhinoceros unicornis*) lives boggy grassland and phana, its population has increased due to efficient management of Royal Chitwan National park. Some rhino has been translocated to Royal Bardia National Park.

rounded tubercles. Sexes are alike but the males are slightly larger and more robust than the females.

Ecology and Behaviour

Rhinos prefer to live in swamps and grassy plains. They also love to live in wooded jungle near ravines and low hills. Rhinos feed mainly on grass, *Imperata* (Khar), *Cyperus* spp. (in wet areas), *Cynodon dactylon* (Dub grass) in dry areas. They take avidly elephant grass (*Pinnisetum purpurm*). Besides this 29 common species of grass and rushes common in wallows and river beds are eaten by the Rhinoceros. The Rhinos are known to congregate in the Chitwan meadows from January to May when there is a luxuriant growth of new shoots after burning takes place. At this time they like to take tall grass species and sprouts. From May onward they move away to the edge of shallow ravines and edge of fields where aquatic plant growth is found in profusion.

The rhinos spend the hottest part of the day wallowing in marshy mud holes. At wallowing spots several animals may congregate together. They may be seen grooming each other. They feed from late afternoon throughout the night. They seek resort in the hills during the rainy season. The Indian rhino (*Rhinoceros unicornis*) is a true grazer but its other kin, for example, Javan rhino (*R. Sondaicus*), and Sumatran rhino (*Didemceres sumatrensis*) are true browsers.

The Rhino is known for its blundering gait which give an impression of clumsy behaviour. Behaviourally, the rhino is quite agile and can manage short bursts of high speed. The rhino charge is generally recognized as an exploratory gesture. The mother rhino with calf shows an instinctive charging behaviour. Unless seriously provoked, however, the rhino have one peculiar habit which often expels their dung. They always drop their dung at one and the same place. Any rhino passing the dung heap gets an urge to relieve backwards. This is one of the vulnerable occasions when a poacher can strike.

Population

Andrew Laurie has carried out detailed study of the rhinos in Chitwan National Park. He identified 168 animals. Dinerstein and Price 1991 estimated a population of around 270-310 individuals. Rhino count in 1994 by Yonzon, figures out about 440 to 460 individuals in the Royal Chitwan National Park. About 41 rhino known to exist in the Royal Bardia National Park. Usually, young calves become easy prey to tiger and some deaths occurred as a result of injuries inflicted during the course of fights. Laurie estimates a population increase of rhino by 2.7 percent per year. He has shown that the rhino calving interval is known to be of 3.8 years. He too does not record any definite peak breeding season of the rhino. In the Royal Chitwan National Park, the birth of rhinos takes place in a period of several days. There is little information about the mother to young relationship in the wild.

The rhino dung piles become an important factor of social communication. According to Laurie, a scent marking is less effective for the Indian rhino, although it is highly effective in its African kins.

In the Royal Chitwan National Park, Laurie observed the following defecating behavioural patterns.

All rhinos defecate on old and fresh dung as it is a stimulus to defecate. Usually, calves defecate after their mothers. A rhino ready to defecate first approaches a dung pile, sniffs at

it, swivels around its hind quarters, lift their tail and defecate. Rhino urination occurs generally when one rhino encounters another a man or elephant. A rhino also urinates when it leaves the wallow or when it travels from one boundary to another in the forest. It also takes place while walking and feeding. Further urination takes place when one rhino sees another male rhino urinating.

In rhino other varieties of behavioural patterns also may be observed. A greeting behaviour in the rhino is common. It generally occurs between calves and approaching strange rhinos and between sub-adults. In all rhino population a slow approach with nose stretched upward is common. Mostly the noses are touched and a sparring of horns takes place. Opponents clash audibly while muzzling face to face. During the process of muzzling, biting may occur and the mouth is often kept wide open.

A large number of other behavioural patterns are also known among the rhino in the wild. These patterns include bobbing its head up and down or grazing and sweeping the head rapidly from side to side. Mostly bulls and cows display aggressive behaviour. "When the pair come into contact with other rhinos they adopt a head-up posture and snort repeatedly. In the rhino regular fights and sparring horns are common. While doing so the rhinos approach nearer the head, and a low mouth posture is taken. The corners of the mouth are pulled back and the teeth are displayed. A high-pitched bleating vocalisation is repeated alternately with the honk. Further, head-up position is maintained at the risk of turning the rump which is vulnerable to slash from tusks. Thus attacks and fights are the main methods of defense (Andrew Laurie 1974).

Reproductive Potential

In the rhinoceros, breeding occurs all the year round. Both male and female must undergo a period of "heat" so as to coincide with mating. In India mating takes place from February to April (E.P. Gee). Adult male rhino is a slow breeder. It lives up to the age of 70. Their breeding rate is slow. Besides, both the male and female have to be in heat for mating to take place and it seems there is no specific mating season. The young are born after the gestation period extending over 16 to 19 months. One calf is born at a time and juvenile remain with its mother for about three years. A fully developed calf from the mother's uterus measures up to 4 ft. in 124 cm.) and 120 lb.

Mating

Adult males are solitary in habit, but both the cow and calf remain in social communication for about three years. Mating commences when the calf attains three years of age. During the act of courtship, the male drive away the sub-adult calf. A mature male associates with oestrous cow for about three days. The driven calf rejoins its mother when the nuptial act is over. An adult male generally avoids a cow with calf. Details of mating behaviour in rhino is poorly known.

The rhinos live in the world of smells and sounds. Its sense of sight is poorly developed and it can hardly see beyond 100 meters. But this loss is compensated by its olfactory and auditory powers. Due to loss of sight, the rhinos establish symbiotic relationship with birds. The Indian rhinos have white cattle egret that warn them of approaching danger. These birds ride on the rhino's body, pecking at ticks and wounds and sores on the skin. The birds perch themselves lightly on the myopic gait and reap a bountiful harvest, as the rhino plods through the vegetation and causes grasshopper and other insects scurry away.

Rhino Conservation

The Royal Chitwan National Park is the last strong-hold of the rhinos in Nepal. The rhino population has declined steeply during the past two decades due to poaching and habitat loss. At present the rhino habitats have greatly regenerated as a result of meticulous management operating over the last five years. Current conservation efforts are being directed towards the protection of its habitat and preservation from poaching.



One horned rhinoceros (*Rhinoceros unicornis*) appears like a living relic with massive armor plating. Both male and female have one horn which is mass of tasseled hair and grows with age.