

THE BOOK  
OF  
INDIAN ANIMALS

BY  
S. H. PRATER, O.B.E., C.M.Z.S. K  
*Curator, Bombay Natural History Society*

*With a map, 73 plates in colour, 17 in line and 86 in half-tone*



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## RHINOCEROSES

The various species of rhinoceroses, all now confined to the Old World, differ remarkably from one another in structure. As a result of migrations during past epochs into different habitats and climates, into new feeding grounds to which they became adapted, the various species appear to have become distinct at a very early period of their history.

A comparison of the remains of numerous extinct forms with those now living indicates 7 distinct lines of descent and evolution from which lesser branches were given off. Though these animals are externally similar they are thus really very far apart both in history and anatomy: even the two living African rhinoceroses probably separated from each other and became distinct species a million years ago.

Three species of rhinoceros are found within our limits. The great one-horned rhinoceros (*Rhinoceros indicus*) and its relative, the smaller one-horned or Javan rhinoceros (*Rhinoceros sondaicus*) have an obscure genealogical history. No representatives of these true and typical rhinoceroses have been discovered anywhere but in South-Eastern Asia. Their remains are not found in the more ancient Sivalik beds. But they appear with relative suddenness in the uppermost and more recent beds in the form of two species known as the Sivalik rhinoceros (*R. sivalensis*) and *R. palaeindicus* the ancient rhinoceros of India.

The Asiatic two-horned rhinoceros (*R. sumatrensis*) was on the other hand widely distributed in the past. It was quite abundant in the Sivalik hills in Pliocene times. It was a geological period when these animals, favoured by a genial climate, inhabited a broad forest belt which stretched from the east coast of England southwards and eastward across Southern France and North Italy to India.

All the living rhinoceroses are included in a single family. Their massive build, the thickness and solidity of their bones, their short stumpy legs, each furnished with three toes are some of the family characters. The skin in all the living forms is either thinly clad with hair or naked, and in all the Indian species the heavy hide in places is thrown into deep folds. The nasal bones are enlarged to serve as a support for a single horn or double horns. When two horns are present they are situated one behind the other in the middle line of the snout. The horn is formed of a closely matted mass of horny fibre issuing from the skin. It has no connection with the skull, although a supporting boss of bone in the skull may serve as its foundation.

The horns grow throughout life and if lost are reproduced.



Theodore H. Hubbard

A two-horned rhinoceros in its native wilds

Photo by

## The Great One-horned Rhinoceros

*Rhinoceros unicornis* L.

**Local names :** Hindi, *Gainda, Gargadan.*

**Size :** Probably the largest of all existing rhinoceroses. A male may reach over 6 ft. at the shoulder. The average height is about 5 ft. 8 in. with a girth of 11 ft. behind the withers. The horns do not compare in length with the African species. The record from Assam measures 24 in., 15-16 ins. is a good average.

**Distinctive characters :** The skin of this massive creature is divided into great shields by heavy folds before and behind the shoulders and in front of the thighs. The fold in front of the shoulders is not continued right across the back—a distinctive character of this rhinoceros. On the flanks, shoulders and hind quarters, the skin is studded with masses of rounded tubercles. With its grotesque build, long boat-shaped head, its folds of armour, its scaly hide the animal looks like a monster of some bygone age. The males may be recognised from the females by a shorter and thicker horn, blunted by frequent combats. The female's horn is sharper and longer.

**Distribution :** Formerly extensively distributed in the Indian Peninsula. Today it is restricted to parts of Nepal and Assam. In Nepal it is found only in the country to the east of the Gandak River known as Chaitwan, in Assam in isolated areas of the plains.

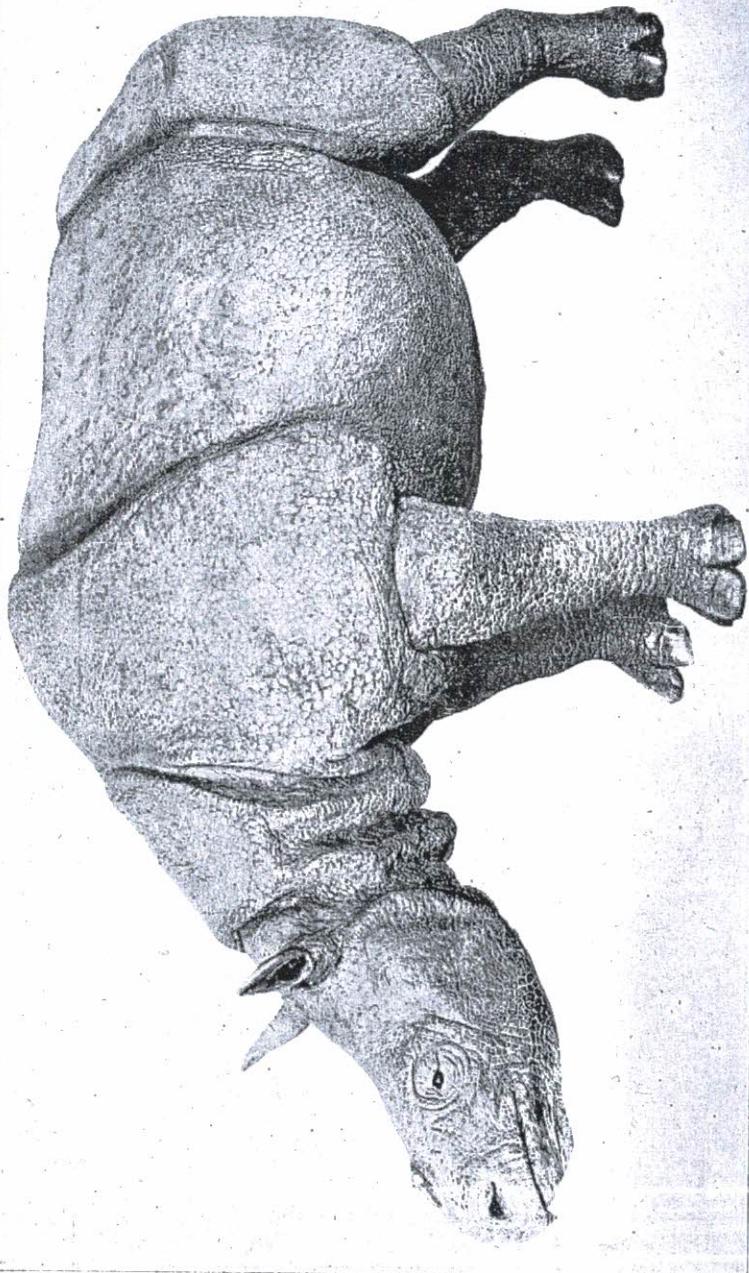
**Habits :** Though it prefers swamp and grass the great Indian rhinoceros is also found in wood jungle up ravines and low hills.

The animal is solitary as a rule, though several may occupy the same patch of jungle. Its food consists chiefly of grass. In Nepal during the rains they frequently enter cultivation. Along the numerous rivers which flow through the jungles of the Nepal Terai the rhino has particular places for dropping its excreta. Mounds so accumulate in places. In approaching these spots a rhinoceros walks backwards and so falls an easy victim to poachers. Breeding takes place at all times of the year. The period of gestation is 17 to 18 months. In Nepal it is generally believed to be one year. A fully developed calf taken from the uterus measured 4 ft. 1 in. and scaled 120 lbs.

Many legends and beliefs are attached to this animal. In Europe, during the Middle Ages its horn was generally believed to have peculiar medicinal virtues.

In Nepal the flesh and the blood of the rhinoceros is considered highly acceptable to the *Manes*. High caste Hindus and most Gurkhas offer libation of the animal's blood after entering its disembowelled body. On ordinary Sradh days 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 form in Burma, Siam and China. They set a great value upon the animal and provide the main reason for its persecution.





The Smaller One-horned Rhinoceros

## The Smaller One-horned or Javan Rhinoceros

*Rhinoceros sondaicus* Cuv.

**Local names:** Hindi, *Gainda*.

**Size:** Though smaller than the great Indian rhinoceros it is still a very bulky animal. Old bulls measure about 5 ft. 10 in. at the shoulder. The single horn is never very long; 10 $\frac{1}{2}$  in. is the record.

**Distinctive characters:** In distinction to the great Indian rhinoceros the fold of skin behind the shoulder is carried right across the back in this animal. The hide is marked all over with a curious mosaic-like pattern. The horn does not appear to be developed in the females, or if developed at all, it is only a low boss.

**Distribution:** The smaller one-horned rhinoceros was once believed to range from Bengal and Assam through Burma and the Malay Peninsula to Sumatra. As far as can be ascertained its range is now limited to the Malay Peninsula and Java where a few still exist under protection. In earlier works on Burma, it is mentioned as having been once abundant in the forested banks of large rivers in the district of Tenasserim. Recent attempts to discover whether this rhinoceros still exists in Burma have failed, and it is doubtful whether this species survive in this area. Though it occurred in the Bengal Duars in former years, its presence within Indian limits at the present time requires verification.

**Habits:** The smaller one-horned rhinoceros is more an inhabitant of tree forest than of grass land. Its low crowned grinding teeth indicate that it is a browser, indulging less in grazing than the Indian rhinoceros, whose armoury of high crowned grinding teeth are peculiarly adapted to the mastication of grass. Its usual habitat is forested hill country where it has been found at elevations as high as 7,000 ft. above sea level.

The feeding habits of this rhinoceros and of the two-horned Asiatic rhinoceros, described on the next page, have profoundly effected their distribution: being able to live on a great variety of forest trees and shrubs these animals have extended their range through the great forest tract reaching from Assam and Bengal through Burma and the Malay countries. The great Indian rhinoceros is on the other hand limited by the nature of its food to living in the grass jungles of the alluvial plains of North India. Similar factors have limited the range of the "grazing" white rhinoceros and facilitate the distribution of the "browsing" black rhinoceros on the African Continent.

## The Sumatran Two-horned Rhinoceros.

*Rhinoceros sumatrensis Cuv.*

**Local names:** Burmese : *Kyan, Kyan-shaw.*

**Size:** Male—Height at shoulder 4 ft. 4½ in.; girth behind the withers a little over 7 ft.

**Distinctive characters:** The Sumatran rhinoceros differs from the two other Asiatic rhinoceroses in possessing two horns. On this account it is considered to represent a distinct sub-generic group (*Diocerinus*). It is further distinguished by having a single pair of lower front teeth instead of two pairs as in the Indian and Javan rhinoceroses. Other distinctions are seen in the structure of the skull and in the anatomy of the intestines. The greater part of the body is covered with bristles varying from red-brown to black. The hairy fringes of the ears and the body are lost with age.

**Distribution:** Once fairly common throughout Burma—it also occurred in Assam from which province it is now practically exterminated. At the present time a few inhabit the forests of Lower Tenasserim and the hill tracts about Myitkyina, the Arrakan Hills and the Pegu Yomas.

**Habits:** The two-horned rhinoceros, like the lesser one-horned species has a preference for forested hill tracts where it wanders up to considerable elevations. A sufficiency of shade and a good supply of water are essential to its habitat. A pair will frequent a given area for a time and then move off, their movements being affected by the water supply. They enter streams by night and also during the hot hours of the day. In suitable spots there are regular wallows or 'mud-baths' in which the huge creatures roll much as buffaloes and pigs do. As a result of this habit their bodies are always well coated with mud. Tracks lead off in all directions from these 'wallows.' They present the appearance of large tunnels hollowed through the dense undergrowth. Unlike the elephant, a rhinoceros does not break through the jungle but burrows its way through the dense tangle. They visit the wallows singly, or a bull and a cow may be found together. The night and early morning is spent in wandering about and feeding; the hot hours of the day in rest in some cool and shaded spot. In the cold weather and rains they visit the low country coming down in search of particular foods. They are not grazers but browse on twigs, shoots and are very partial to fallen fruit—wild mangoes, citrous fruits and figs.

The sense of smell and hearing is acute, but sight is poor. Collections of dung found in particular places reveal a habit similar to that noticed with the great one-horned rhinoceros.

Little is known about their breeding habits but it is known that the young remain with the mother to a fairly advanced age.

