

Continued from Vol. XXXVI, No. 4, of the  
Journal of the Bombay Natural History Society.

**THE WILD ANIMALS OF THE  
INDIAN EMPIRE**

AND THE

**Problem of their Preservation**

**Part II.**

## Family II: RHINOCEROTIDAE 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.

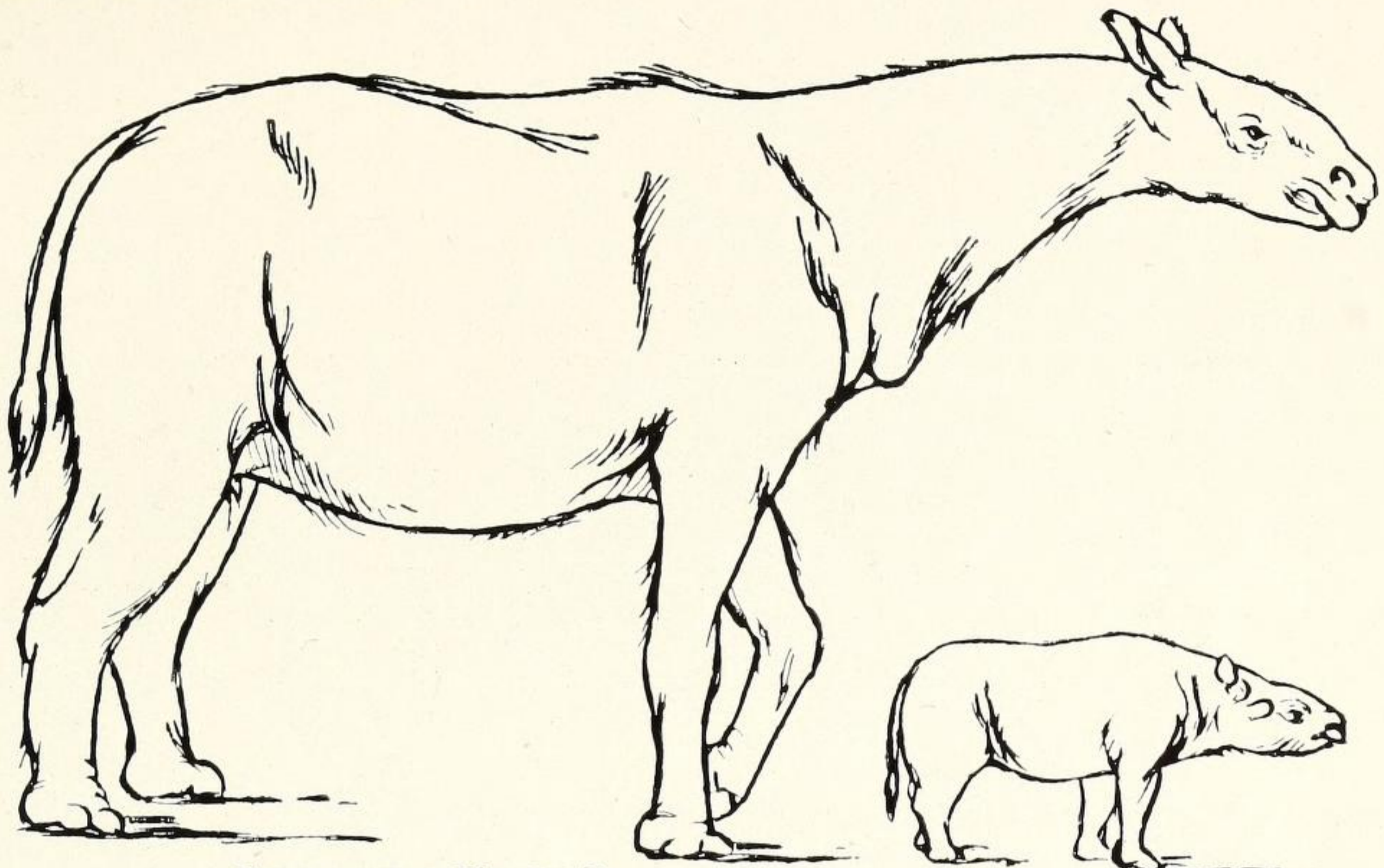
A comparison of the remains of numerous extinct forms with those now living indicates 7 distinct lines of descent and evolution from which lesser branches were given off. Though these animals are externally similar they are thus really very far apart both in history and anatomy: even the two living African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

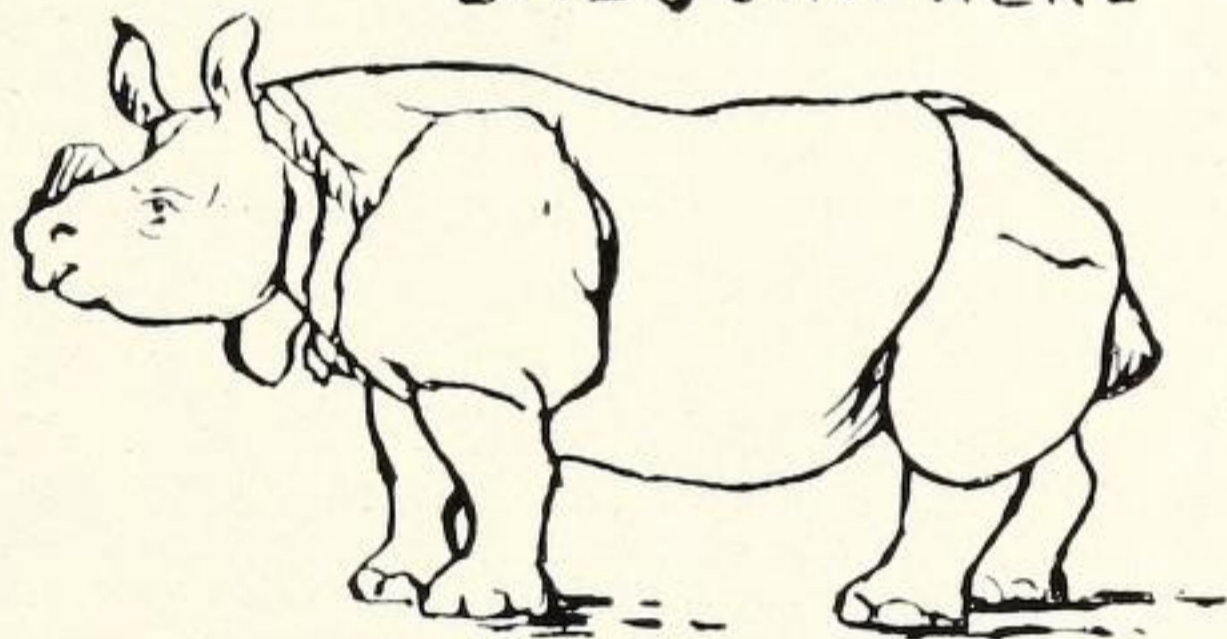
All the living Rhinoceroses are included in a single genus. Their massive build, the thickness and solidity of their bones, their short stumpy legs each furnished with three toes are some of the family characters. The skin in all the living forms is either thinly clad with hair or naked and in all the 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 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.

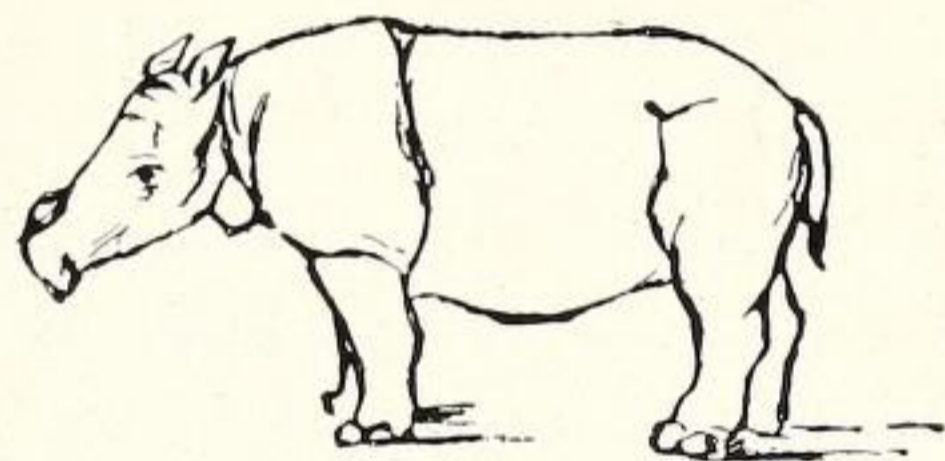


BALUCHITHERE

ACERATHERE



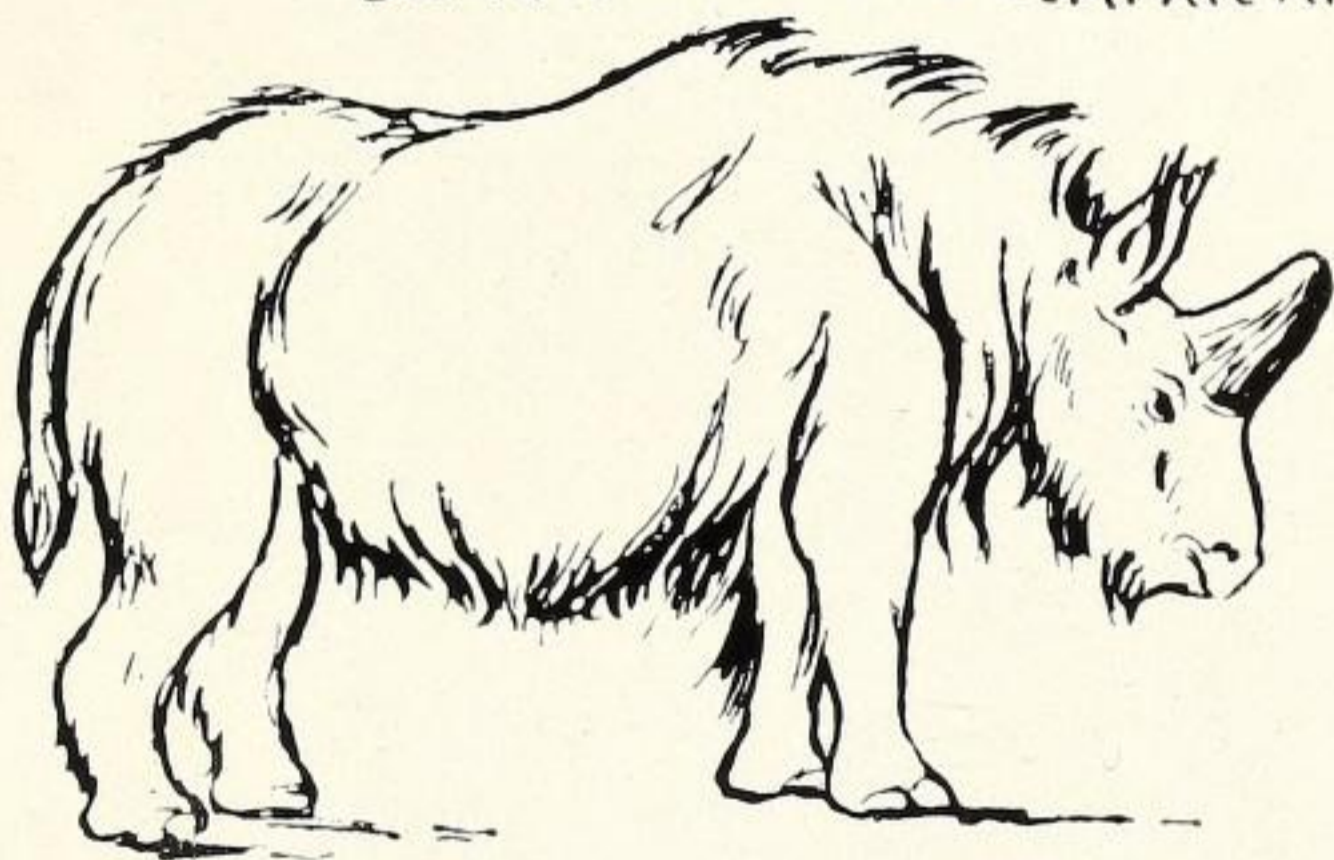
INDIAN RHINOCEROS



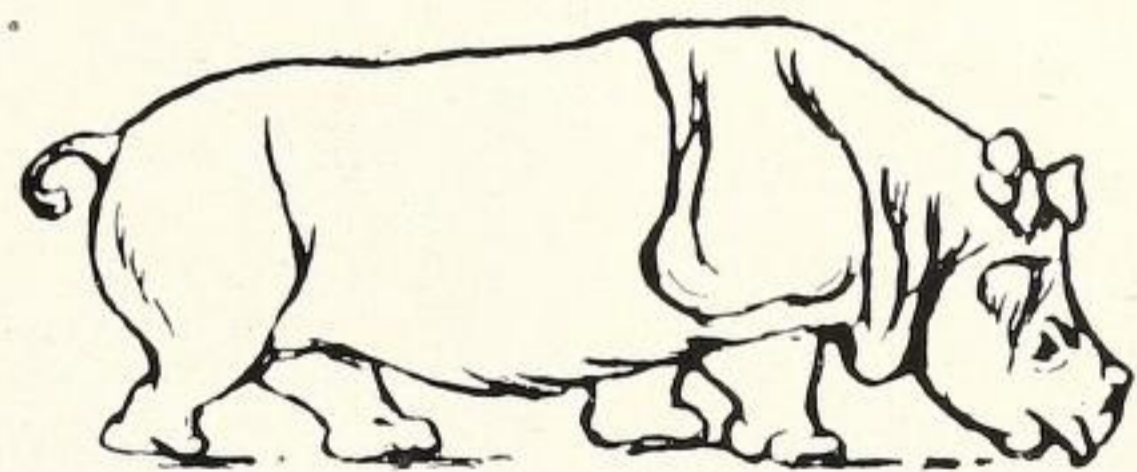
SUMATRAN RHINOCEROS



BLACK ----- AFRICAN RHINOCEROS ----- WHITE



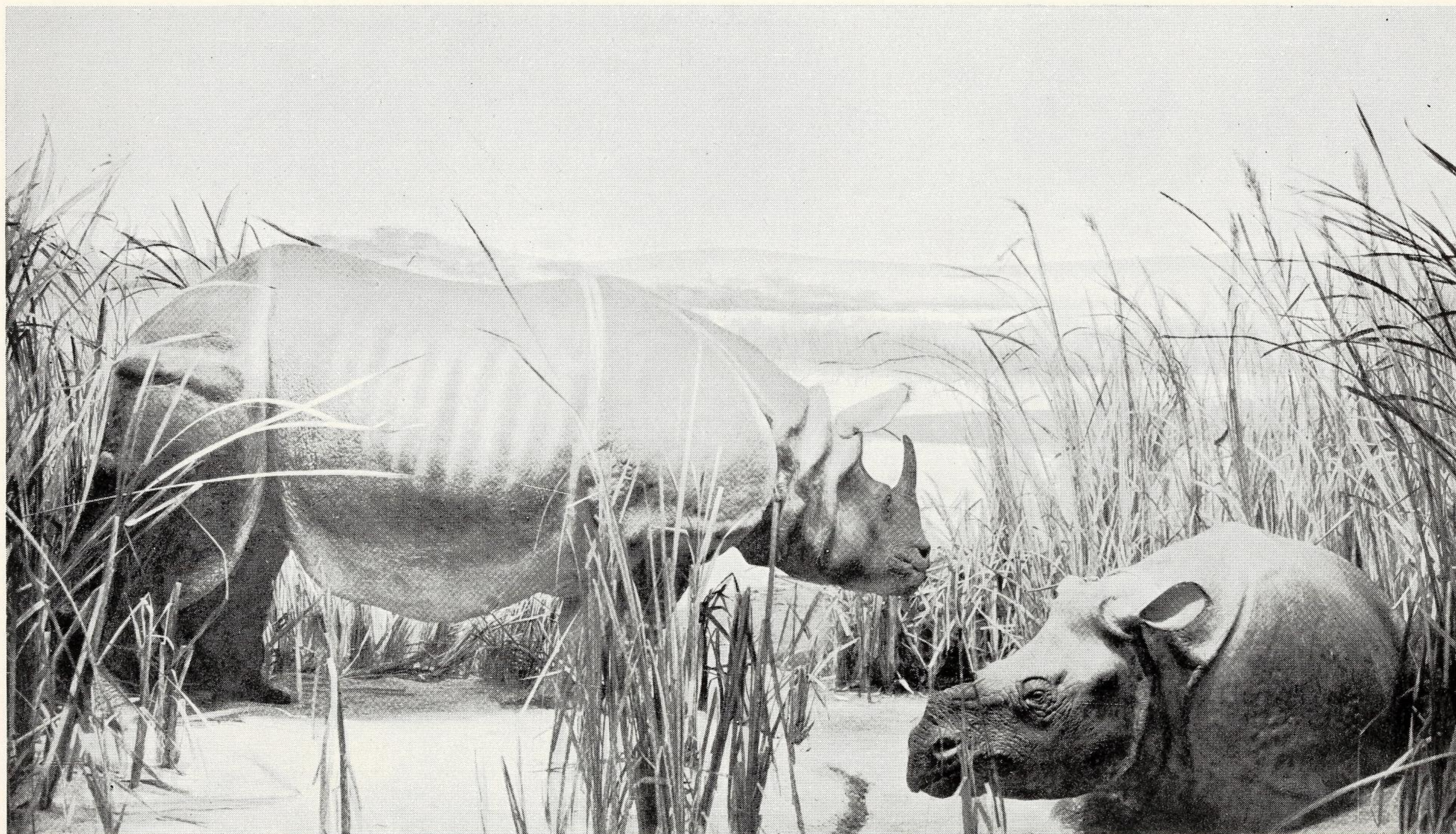
ELASMOTHERE



TELEOCERAS

RHINOCEROSSES LIVING: (*facing left*); EXTINCT (*facing right*).

The Baluchithere, an aberrant form of Rhinoceros, whose remains were discovered in the Butgi Hills, Eastern Baluchistan is believed to have been 13 ft. high at the withers. It towers above all its relatives. (*Reproduced from Natural History, Vol. XXIII, No. 3.*)



By Courtes of

The Field Museum, Chicago

The Great One-horned Rhinoceros (*Rhinoceros unicornis* L.).  
(Height at shoulder 60-69 in.).

## THE GREAT ONE-HORNED RHINOCEROS (*RHINOCEROS UNICORNIS* L.).

The Great Indian Rhinoceros, probably the largest of all living Rhinoceroses may reach over 6 ft. at the shoulder.

The average height of a well-grown animal is about 5 ft. 8 in. with a girth of 11 ft. behind the shoulder. The skin of this massive creature is divided into great shields by heavy folds before and behind the shoulder and in front of the thighs. In this Rhinoceros the folding of the skin in front of the shoulders is not continued right across the back. The skin on the flanks, shoulders and hind quarters, is covered with a mass of rounded tubercles. With his grotesque shape, long boat-shaped head, his folds of armour, his scaly hide he looks like a monster of some bygone age. The horns of the Indian Rhinoceros never compare with those of the African. The record from Assam measures 24 in. 15-16 in. is a good average length.

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. 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. 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 falls an easy victim to poachers. Breeding takes place at all times of the year. The period of gestation is given as 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.

The food consists chiefly of grass. In Nepal during the rains Rhinoceros frequently enter cultivation. 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.

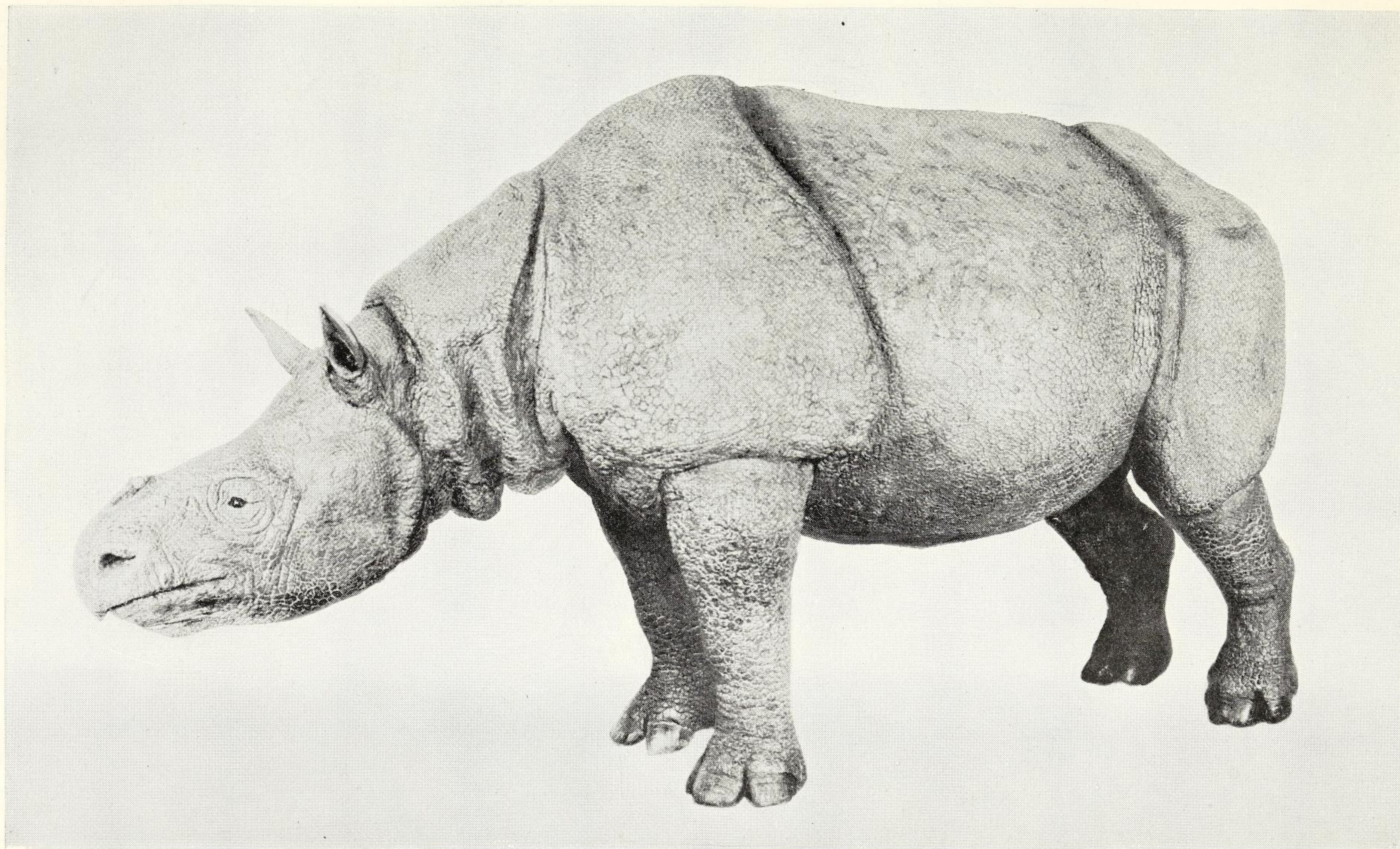
In Nepal the flesh and the blood of the Rhinoceros is considered highly acceptable to the *Manes*. High caste Hindus and most Gurkhas offer libation of the animal's blood after entering its disembowelled body. On ordinary *Sradh* days the libation of water and milk is poured from a cup carved from its 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. In Nepal, the Indian Rhinoceros is found only in the country to the east of the Gandak river known as Chitawan where strict preservation by the Nepal Government has saved it from extinction. In parts of Assam, where it is still found, strict preservation has temporarily saved it from extermination.

THE SMALLER ONE-HORNED OR JAVAN RHINOCEROS  
(*RHINOCEROS SONDAICUS* CUV.).

The Javan Rhinoceros is a close relative of the Great One-horned Rhinoceros. Though smaller, 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.  $10\frac{3}{4}$  in. is the record. The horn does not appear to be developed in females or, if developed at all, it is only a low boss. In distinction to its relative, the fold of skin on the shoulders is continued across the back. The hide is marked all over with a mosaic like pattern.

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 doubted whether there are more than half a dozen specimens and it is doubtful whether these will survive without adequate measures for their protection. Though it occurred in the Bengal Duars in former years, its presence in this area at the present time requires verification.

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 hill country where it has been found at elevations as high as 7,000 ft. above sea level.



By Courtesy of

The Brit Mus Nat. Hist. ).

The Smaller One-horned Rhinoceros (*Rhinoceros sondaicus* Cuv.)  
( Height at shoulder 70 in. ).



By Courtesy of

The Amer. Mus. Nat. Hist., New York.

The Sumatran Two-horned Rhinoceros (*Rhinoceros sumatrensis* Cuv.).  
(Height at shoulder about 52 in.).



THE SUMATRAN TWO-HORNED RHINOCEROS (*RHINOCEROS SUMATRENSIS* CUV.).

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 (*Diocerhinus*). It is further distinguished by having a single pair of lower front teeth instead of two pairs as in the Indian and Javan animals.

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 his 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 the sight is poor. Collections of dung found at 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.

The Two-horned Rhinoceros was 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. A small number are present in the Shive-u-daung Sanctuary in the Mogok division of the Katha District where proper protection may save this species from extinction in Burmese limits.