

# RHINOCEROS . . .

## a vanishing mammal

By George H. Pournell, Ph.D.

CURATOR OF MAMMALS

THE RHINOCEROSES of today are dying remnants of a once widespread and highly successful group of mammals. Fossil remains of these beasts, unearthed in many areas of North America and Eurasia, vividly demonstrate some of Nature's bizarre experiments in size and shape. The family lineage of these ponderous brutes has been traced back some 55 or 60 million years, to a time in earth's history known as the Eocene Epoch. Beyond the Eocene, however, the trail becomes greatly obscured because of gaps in the fossil record. Little is known concerning the earlier history of this group.

The Eocene was a time in which subtropical climates prevailed throughout much of North America and Eurasia. Lush forests of breadfruit trees and palms spread northward to what is now southern Canada. Alligators floundered through extensive inland swamps or sprawled on sand bars of sluggish unnamed rivers. The moist lowlands of what would some day be Nebraska and the Dakotas teemed with several Joymothi nuzzles her newborn Lasai, August 31, 1962. The young Indian Rhino's name is taken from an Indian dialect and is said to mean "the fat or chubby one."

Photo by Paul Steinemann, Basel Zoo

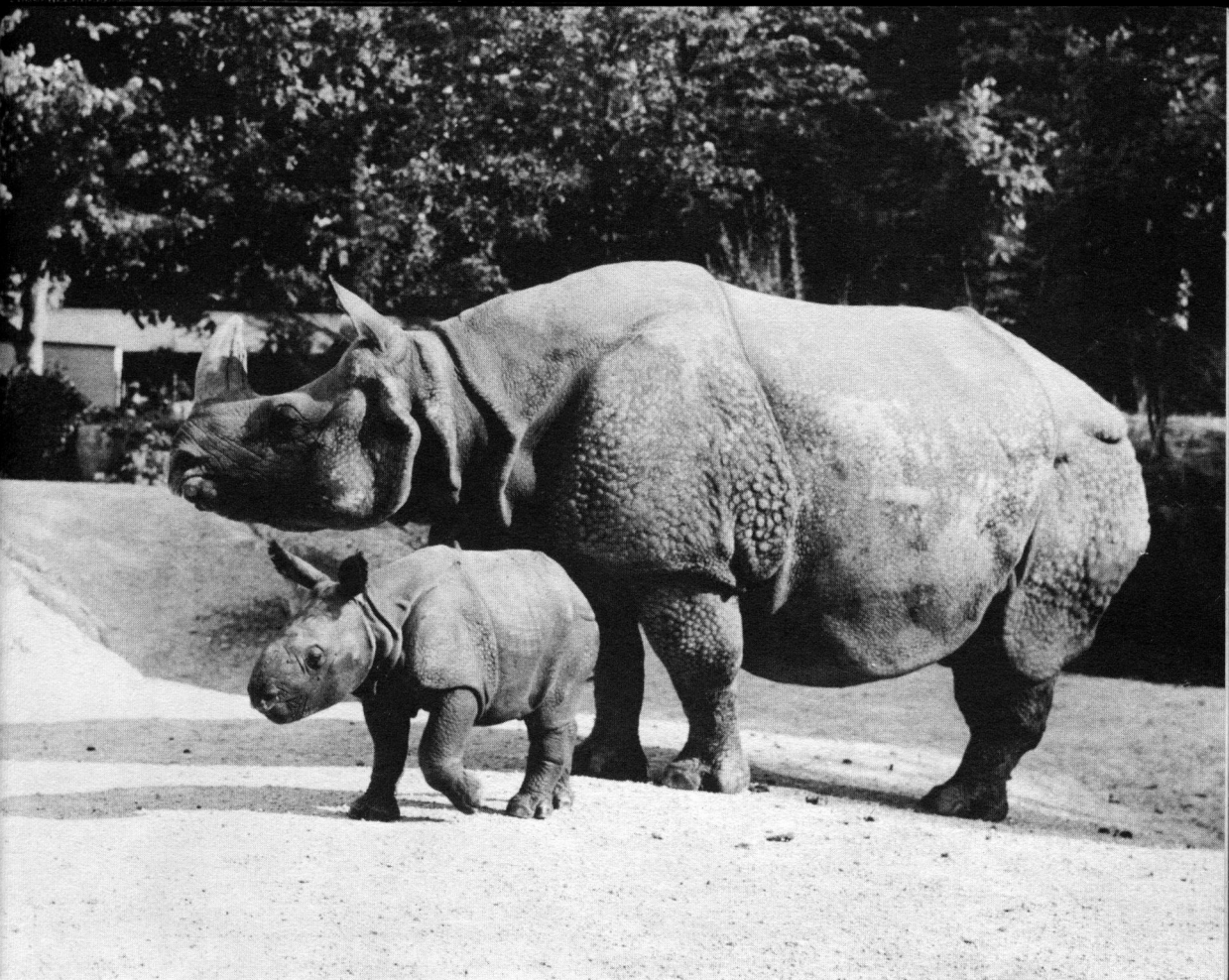
species of small tapir-like animals, some of which were no larger than shepherd dogs. These mammals were hornless and had long slender legs and necks. Collectively, they are called "running rhinoceroses" and are believed to be the stem group from which modern rhinoceroses were derived after many complex evolutionary modifications.

No human eye observed the comings and goings of these archaic creatures. Man had not appeared on the scene when running rhinoceroses were having their heyday, nor was he present when their descendant, the colossal *Baluchiterium*, appeared in Asia millions of years later. This giant hornless rhino stood eighteen feet at the shoulders and browsed from the treetops. It is the largest land mammal of all time.

Also unseen by man were the hippopotamus-like river rhinos that flourished in lakes and rivers of North America some ten or twelve million years ago, or their contemporary cousins, a species of medium-sized rhinos characterized by the presence of two absurdly small horns situated side-by-side on the end of the muzzle. It was, in fact, only a million or so years ago that a progressive group of primates began to chip stones, fashion spears, and eventually build thermo-nuclear weapons. By this time the golden age of the rhinos was on the wane, and comparatively few species remained considering the vast numbers that had once existed throughout much of the world. To realize the magnitude of time since the running rhinoceroses splashed through the Eocene lowlands, one need only remember that during this interval the towering Rocky Mountains were eroded down to a level plain, uplifted, and then partially eroded again.

Long before the arrival of man, a gradual southward migration of tropical plant assem-





Lasai and his mother on September 6, 1962. A young Indian Rhino closely resembles its parents. However, only the outline of the horn can be seen on the nose.

Photo by Paul Steinemann, Basel Zoo

blages indicated the onset of colder climatic conditions. These lowering temperatures culminated in the Pleistocene Ice Ages when extensive glaciation occurred in the northern hemisphere. The rhinoceroses had completely disappeared from North America. In Europe and Asia they moved into southern latitudes as bitter winds howled incessantly over the northern wastelands and thick blankets of snow and ice settled over those lands. One species, however, adapted to these bleak conditions by developing a thick woolly coat of fur. This shaggy, two-horned beast roamed the Eurasian tundras until comparatively recent times, as evidenced by crude pictures drawn on cave walls by Stone Age artists and by the well-preserved frozen carcasses that have been unearthed in Siberia along with those of mammoths.

Today there are five living species of rhinoceroses—two in Africa, three in Asia. All are characterized by large size, stout limbs termi-

nating in three-toed feet, and either one or two hornlike structures on the muzzle. Unlike true horns, these appendages are not attached to the skull and are composed of hairlike fibers matted into compact masses. These adornments are the chief reason for the near extinction of present-day species and well may be responsible for their final demise. Despite proven worthlessness, many Orientals attribute aphrodisiac properties to powdered rhino horn, for which they pay fabulous prices. It is common knowledge that the three Asian species have been almost exterminated because of this alleged horn value. Now this illegal market has turned to Africa, where extensive poaching of Hook-lipped (Black) and Square-lipped (White) Rhinos occurs in spite of strict conservation laws that carry heavy penalties for this practice.

Recent population studies indicate all too clearly that the last page of the final episode is being written in the 60-million-year history of



A family group of Indian Rhinos at the Basel Zoo, Switzerland. Lasai (center) shows one of his well-defined armor plate-like sides. The smallest animal is Khunlai, born March 9, 1963, the first second-generation Indian Rhino born in captivity and the fourth born at the Swiss Zoo. His mother, Moola, was the first Indian Rhino born and raised there.

Photo by Elsbeth Siegrist, Basel

these spectacular beasts. In October, 1962, the First World Conference on National Parks published the following total world population estimates of the five rhinoceros species:<sup>1</sup>

Hook-lipped Rhinoceros	
<i>Diceros bicornis</i> .....	11,000 to 13,500
Square-lipped Rhinoceros	
<i>Ceratotherium simus</i> .....	2,500 to 3,500
Indian Rhinoceros	
<i>Rhinoceros unicornis</i> .....	600
Sumatran Rhinoceros	
<i>Didermocerus sumatrensis</i> . 100 to	170
Javan Rhinoceros	
<i>Rhinoceros sondaicus</i> .....	24 to 50

The Black Rhinoceros ranges throughout most of the scrub country of East Africa, the southern part of the continent, and westward into Angola. This species has two horns. It is a smaller beast than either the Square-lipped or Indian varieties, measuring five to five and one-half feet at the shoulders. It is a browser,

using its prehensile hook-like upper lip to pull into its mouth the leaves and stems of thorny acacias and other plant species that form its diet. By nature it is highly nervous and irritable, and will charge without apparent provocation.

The African Square-lipped Rhinoceros is a colossal animal, standing as high as six and one-half feet at the shoulders. It is the largest of the rhinos, being exceeded in size only by the elephants among land mammals. This species is easily distinguished by the square upper lip that contrasts markedly with the beak-like prehensile lip of its African neighbor, the Black Rhino. The head is huge and carried low. Two horns adorn the muzzle; the front one may attain lengths of over five feet. This animal often is called the "White Rhinoceros," but this is somewhat of a misnomer, since the color is only slightly lighter than that of its African Hook-lipped relative. It is a more timid beast than the

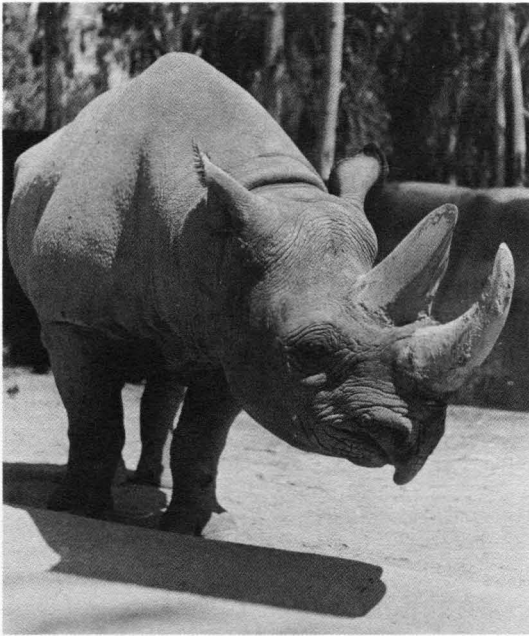
<sup>1</sup>ORVX 1962, Vol. 6, No. 5, p. 298

latter and differs further in that it has grazing rather than browsing habits. Two races of Square-lipped Rhinos exist in Africa—one is limited to Natal in South Africa, while the other is found in the Southern Sudan, adjacent parts of the Congo, and northern Uganda. The pair in the San Diego Zoo's collection was obtained from the Umfolozi Game Reserve in Natal.

The Sumatran Rhinoceros is the only Asian species with two horns, the longer front one usually measuring less than twelve inches. Often it is called the "Hairy Rhinoceros" because the young animals are covered with brown hair, most of which is lost as the animal matures. This small rhino stands only about four and one-half feet at the shoulders and is the smallest of

The sturdily crated 1,621-pound Lasai was transferred into his new home on Large Mammal Mesa immediately upon arrival in San Diego.





Barney, the San Diego Zoo's male Black Rhino, provides an excellent view of his prehensile hook-like lip.

the species. It is found in the dense mountain forests of Borneo, Sumatra, and the Malay Peninsula.

Rarest of the modern rhinos is the Javan form, sometimes called the "Lesser One-horned Rhinoceros." It resembles a small individual of the lightly built Indian species. The rivet-like tubercles of the latter form are here replaced by small many-sided disks, and the shoulder skin-

It took a crisp carrot to coax Lasai into displaying his hook-like lip. Usually he "Talks back" to his keeper good-naturedly.

fold is continuous across the back of the neck, whereas it is not in the Indian Rhino. Most of the existing Javan Rhinos are confined to a game reserve in West Java. The Javan and Sumatran species may well join the dinosaurs and running rhinoceroses in the limbo of extinct species before the end of the present decade.

A recent survey of Indian Rhinoceroses in Nepal<sup>2</sup> indicates that there were 185 individuals in 1962 as compared to 300 in 1959. This drastic decrease in numbers was attributed directly to intensified poaching activities. Should the same rate of decrease continue, it is doubtful that any of this species will survive into the 21st Century.

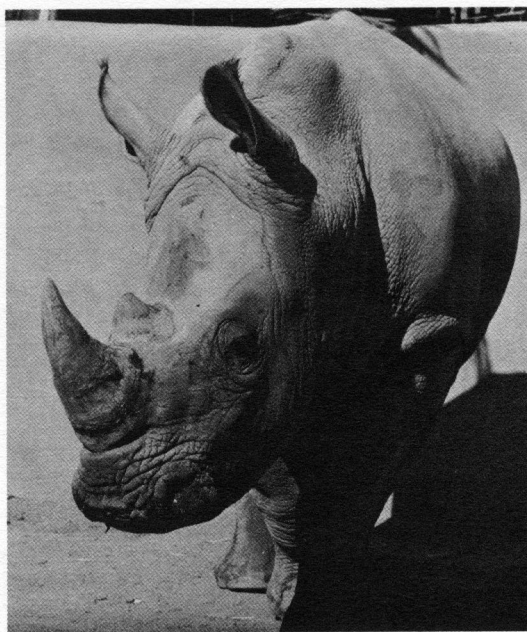
With the arrival of Lasai, our fine young Indian Rhino, the San Diego Zoo's collection includes the Black, Square-lipped and Indian species. Each is housed in newly constructed, moated exhibit areas on the large mammal mesa. These enclosures are equipped with all modern conveniences a rhinoceros might need for luxurious living, including spacious exercise, eating and retiring quarters, as well as mud baths. Lasai's home is the newest and has the added feature of a swimming pool. It was completed October 12, 1963, the day he arrived in San Diego. Being a youngster, born August 31, 1962, in the Basel Zoo, our newcomer weighed only 1,621 pounds on arrival. Fully <sup>2</sup>*E. P. Gee, "Report on a brief survey of the wild life resources of Nepal, including the rhinoceros," ORYX 1963, Vol. 7, Nos. 2-3, pp. 67-76.*



mature individuals of this species may attain weights of over 4,500 pounds. According to a bulletin of the Basel Zoo, Lasai's father (Gadadhar) weighed 4,554 pounds and his mother (Joymothi), 3,538 pounds in August, 1959.<sup>3</sup>

No living mammal has a more "prehistoric look" than the Indian Rhinoceros. This beast often stands over six feet at the shoulders (Gadadhar, 71 inches; Joymothi, 61 inches, 1959), and may be as much as thirteen feet long. The skin of its sides, divided into three armor plate-like sections by deep folds, is covered with rivet-like tubercles. The single horn usually is less than a foot in length, although there are rare records of specimens measuring 24 inches. The favorite haunt of this species is high grass jungle. Most of the present population occurs in Nepal and Assam.

We are indebted very much to Dr. Ernst M. Lang, director of the Basel Zoo, for giving us the opportunity to add Indian Rhinos to our collection. The Basel Zoo has had outstanding success in breeding and raising this species, as well as many other rare animals fast vanishing from their native habitats. Dr. Lang and his colleagues are among the most active workers in the conservation field, and certainly are to be



The square lip of the White Rhino is a major distinguishing characteristic of the species.

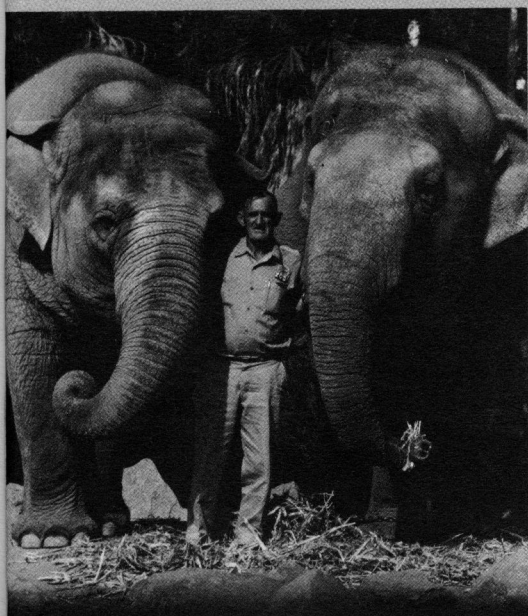
Photo by Dick Snyder

commended for their important endeavors. It is hoped that we will have a mate for Lasai within the near future.

<sup>3</sup>ZOLLI, *Bulletin, the Zoological Garden, Basel, April 1962, No. 8, "Von unseren Nashörnern," pp. 5-14.*

## RALPH DAVIS

September 6, 1896 – November 6, 1963



By Dick Snyder

OFTEN REMEMBERED will be Ralph "Gabe" Davis, who died one week after he had been retired as head mammal keeper. His association with the San Diego Zoo began on August 1, 1945, and continued until October 31, 1963. During this eighteen-year period he not only earned the respect and admiration of his fellow workers, he gained the trust and affection of the many animals under his supervision.

For more than forty years Gabe worked with the animals he loved—first with the circus, later in the Zoo. He was a native of Nashville, Tennessee, and started traveling with the Sells-Floto Circus in 1914. Nine years later he joined Ringling Brothers and Barnum and Bailey Circus, working with cats, other cage animals, camels, zebras and giraffes. In 1945, following wartime employment at the Kaiser Shipbuilding Corporation, Richmond, California, he came to the San Diego Zoo. His vast knowledge of the needs and habits of animals made him a keystone in the growth of the Zoo since that time.