

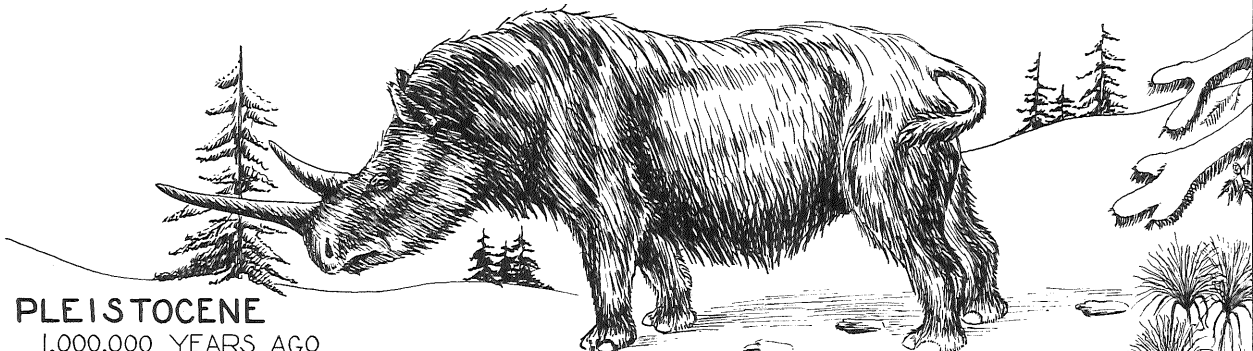
# FAUNA

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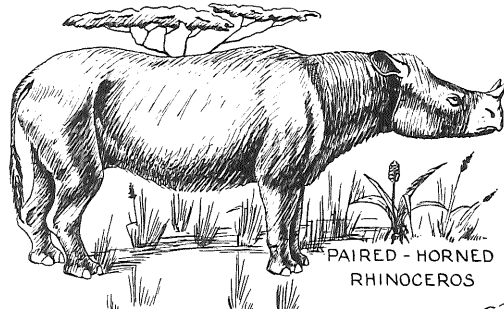


# RHINOS OF THE PAST

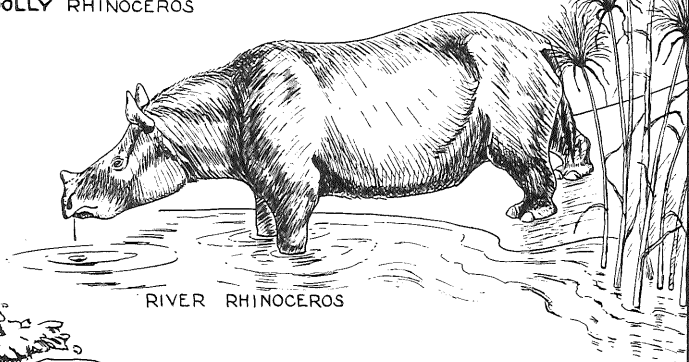


**PLEISTOCENE**  
1,000,000 YEARS AGO

WOOLLY RHINOCEROS

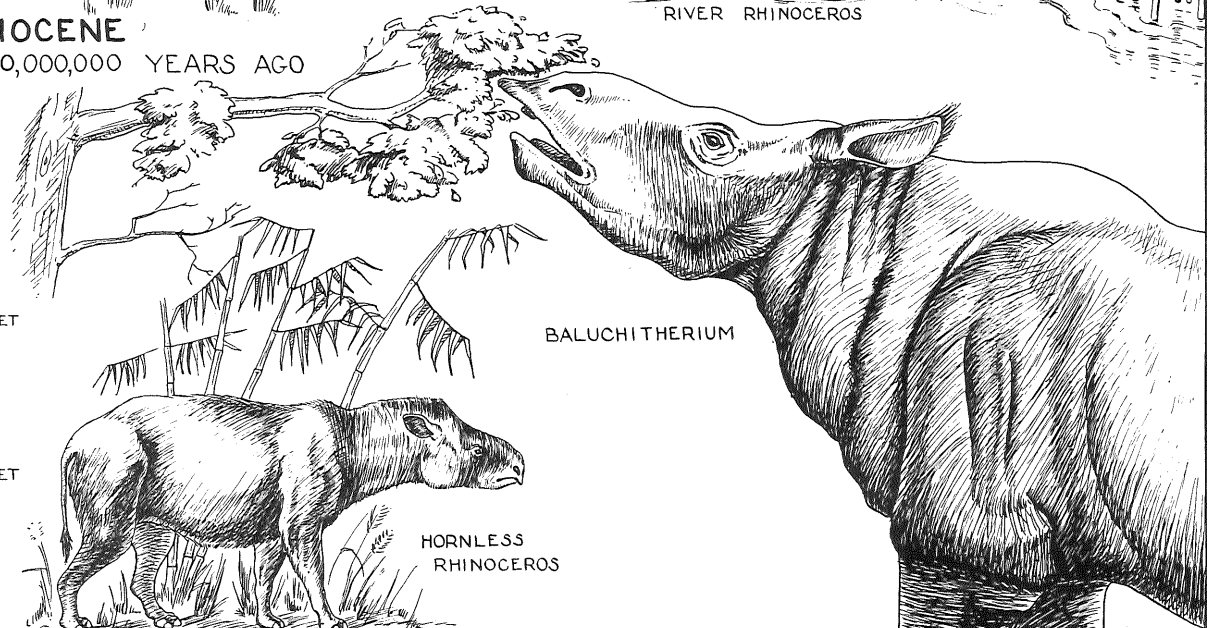


PAIRED - HORNED  
RHINOCEROS



RIVER RHINOCEROS

**MIOCENE**  
20,000,000 YEARS AGO



BALUCHI THERIUM

HORNLESS  
RHINOCEROS

**OLIGOCENE**  
40,000,000 YEARS AGO

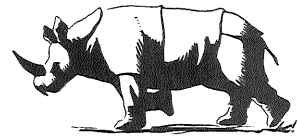


RUNNING RHINOCEROS

**EOCENE**  
60,000,000 YEARS AGO

# The Living Rhinoceroses

by FREDERICK A. ULMER, JR.



**T**HE rhinoceros is an ancient looking beast. The tiny eyes, encircled by myriads of wrinkles, the nose tipped with a horn or two, the heavy hide, and the pillar-like legs—all are reminiscent of a prehistoric monster. And well they might be, for the rhino line was ages old when man first took his bow upon the earthly stage. At one time the group was abundant and widespread throughout the world, but today it has dwindled until only five species remain, and they are confined to Africa and southeastern Asia.

Sixty million years ago, in what geologists call the Eocene Period, one need not have traveled far to see rhinos. Hornless, long-limbed creatures, little larger than sheep, ran about on the plains of what are now Nebraska and South Dakota. Running rhinoceroses, scientists call them, and while they bore little resemblance to modern rhinos, they were the ancestors of the ponderous beasts of today. They had four toes on their front feet, in contrast to the living species, which have only three.

Time passed, the Eocene Period gave way to the Oligocene, and animals amazingly like present day rhinos appeared in western North America. They were only slightly smaller than the smallest rhino living today and the toes on their forefeet had been reduced to three. During the same period the greatest of all the clan, and the largest land mammal ever to roam the earth, made its appearance in Asia. It was the giant *Baluchitherium* that stood seventeen feet at the shoulder and browsed from the tree tops!

The Miocene Period, twenty million years ago, is better known as the Golden Age of Mammals. Rhinos flourished then and many strange types appeared. One medium-sized kind looked much like a modern rhino except that it had a pair of small horns, placed side by side on the end of its nose. Another possessed short, thick legs and a huge, barrel-like body. Except for its ridiculously small horn, it looked like a hippopotamus. Scientists believe it was aquatic and call it the river rhino.

Following the Miocene came the Pliocene Period when North America became much colder and

the rhinos disappeared from the New World forever. Perhaps some of them migrated to Asia, but other groups of rhinos already were well distributed in the Old World.

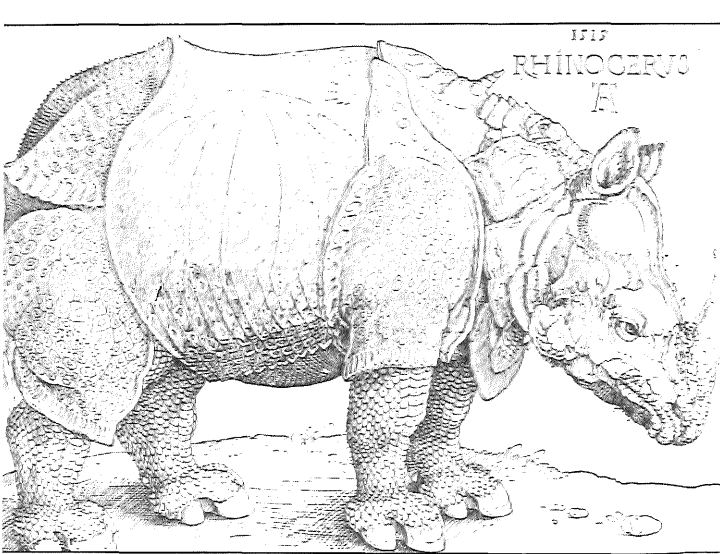
Cold winds swept down across the wastes of northern Europe and Siberia, and snow covered the landscape. Before the glaciers of the recent Pleistocene Period the rhinos retreated into Africa and southern Asia, where they live today. Their ancient realms were usurped by the reindeer, cave bear and mammoth, and a small, insignificant being, called man, clothed in skins and armed with stone weapons, came upon the scene. But the rhinos were not to be driven from their ancient domains without a struggle. Across the snowy wilderness a great shaggy beast appeared. On its head were two big horns and its long hair concealed a form not unlike that of the modern white rhinoceros. This was the woolly rhino, a fearful opponent of early man with his stone-tipped spears. On the walls of caves the Stone Age hunters drew fine pictures of this rhino and its contemporaries, pictures that are visible even today.

Eventually the glaciers crept back into the Arctic and the woolly rhinoceros vanished from the earth. So recently did it live that carcasses, well preserved, have been found several times during the last few hundred years in one of the greatest of cold storage plants, the frozen tundras of Siberia.

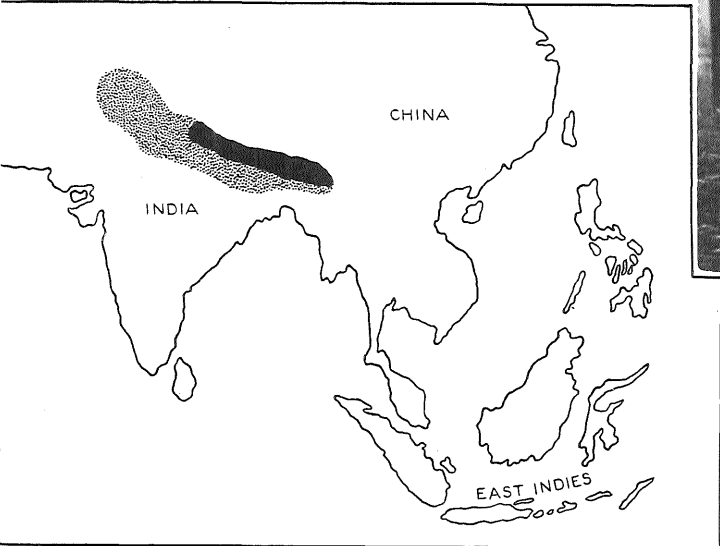
Such has been the history of the race. And so rapidly are the living species disappearing that the last chapter about them may well be written during the present century.

## The Five Living Species

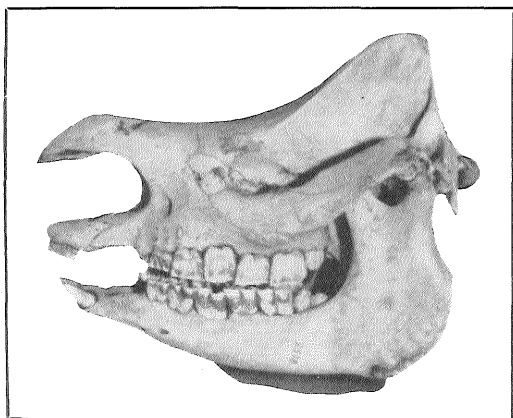
Of the five kinds of living rhinos, three are native to southeastern Asia and two to Africa. Two of the Asiatic species have a single horn, while the third, and both of the African species, have two horns. Unlike those of cattle, these growths have no bony core, and they can easily be cut from the skin with a knife. They are composed of hair-like fibers cemented together into a compact mass which acquires a polish when rubbed against saplings.



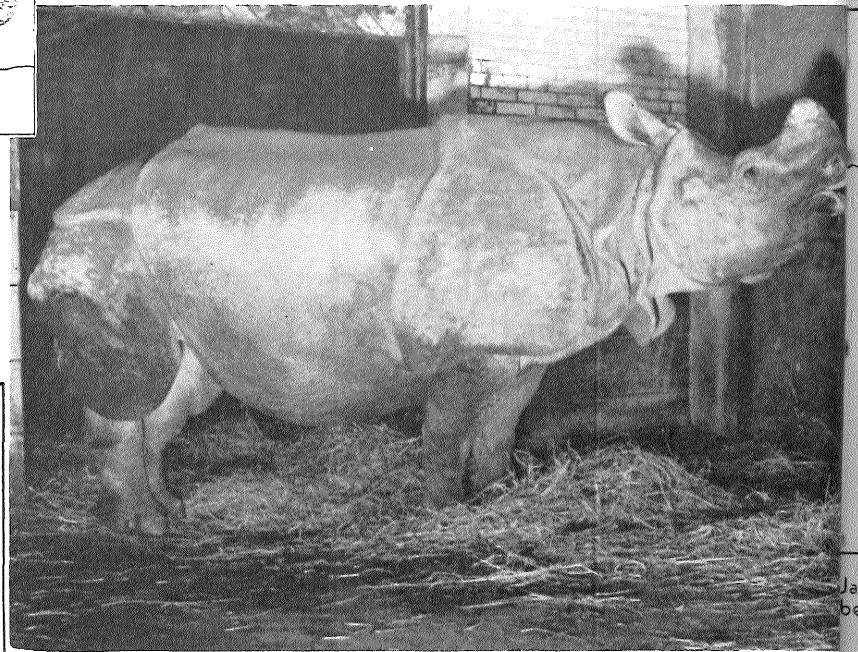
The sketches for this celebrated woodcut were made in Lisbon for Albrecht Dürer in 1513 from the Indian rhino which King Emanuel, of Portugal, sent to the Pope. While the animal is well proportioned, it is portrayed as though it were encased in shining armor. Even to this day many people believe that rhinoceroses are covered with armor-like, bullet-proof hides, whereas their skins actually can be pierced with an ordinary pocket-knife.



The range of the Indian rhinoceros. The solid area indicates where this species still is to be found; the shaded area shows where it also occurred as recently as four hundred years ago. Skull of Indian rhino (below). Notice that this species is equipped with front teeth, a characteristic which is common to all of the Asiatic rhinos. African rhinos lack front teeth entirely; in fighting they depend upon their horns. In contrast, Asiatic rhinos rarely use their horns, delivering slashing bites with their tusks instead. On the end of the nose is a slightly raised area which lies directly below the horn. Rhino horns are not bony, being fibrous and growing directly from the skin.



# THE ASIATIC RHINO



## INDIAN RHINOCEROS

The Indian, or Great One-horned Rhino, *Rhinoceros unicornis*, is the largest of the Asiatic species. A big specimen will measure six feet in height, and as much as thirteen feet from the tip of its nose to the tip of its tail. The record horn for the Indian rhino is twenty-four inches long, but normal ones are less than half that length and many animals have shapeless stumps. Peggy, the specimen in the Philadelphia Zoo shown in the picture above, has worn her horn away by rubbing it against the bars of her cage. An Indian rhinoceros in the London Zoo once tore his twelve-inch horn off completely while trying to raise a transverse bar of his cage with it.

This species of rhino is easily identified by the three deep folds which seem to divide the skin of its body into sections. The first fold starts in front of the shoulder, curves backward and then fades out; the second begins behind the shoulder and goes completely across the back; the third, in front of the thighs, also crosses the back. The rump and shoulder plates are separated from the legs by overhanging folds. The large plates between the folds are studded with great, round knobs which resemble the rivet heads of an iron boiler. The tail, two feet in length, fits snugly into a groove between the rump plates so that from the side only the flattened tip, edged with stiff bristles, can be seen. A thick fold of skin hangs from the neck, like a bib.

Rhinos are slow to multiply. The gestation period is approximately nineteen months and only one young is born at a time. The baby is well developed at birth; it weighs as much as one hundred and twenty pounds and quickly learns to eat solid food. It stays with its mother for a long time and often a female rhinoceros may be accompanied by several offspring of different ages.

Rhinoceroses, like horses and tapirs, are Perissodactyls, or "odd-toed" hoofed mammals, the "odd" referring to the number of toes. All the living species have three hooves on both front and hind feet.

# EROSSES

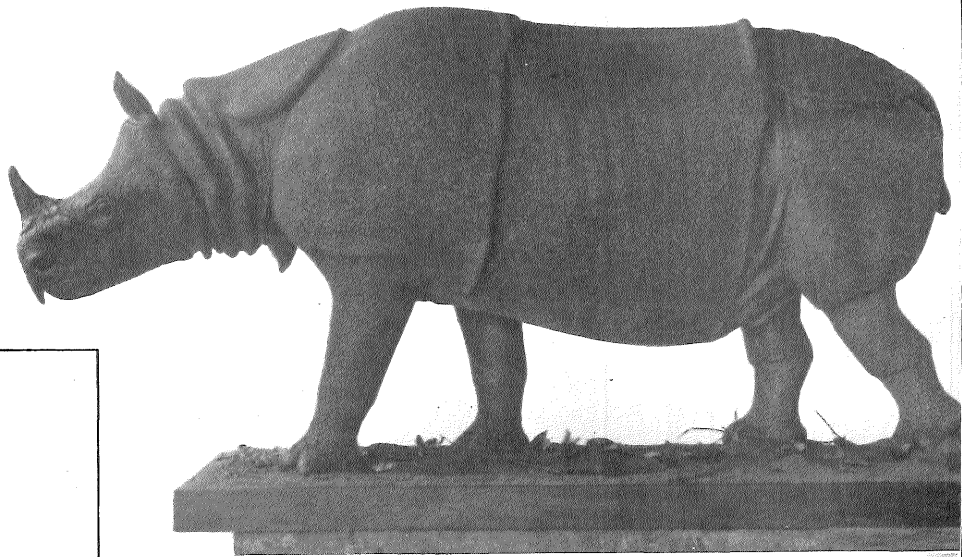


Photo from Zoologisch Museum, Buitenzorg, Java

## JAVAN RHINOCEROS

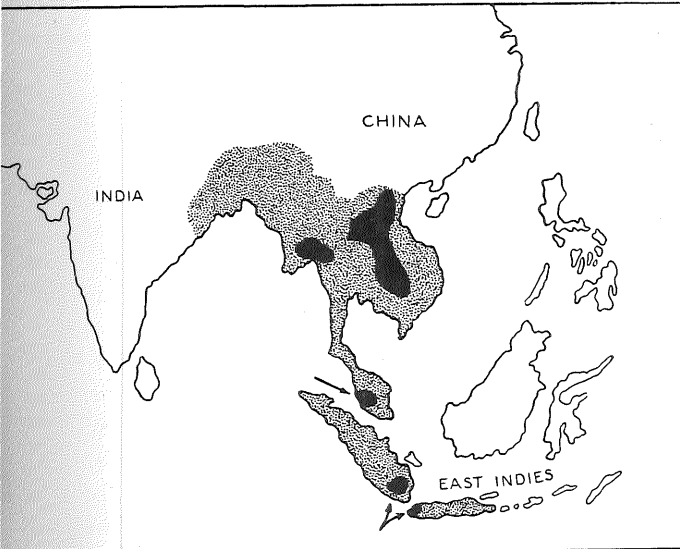
The Javan, or Lesser One-horned Rhino, *Rhinoceros sondaicus*, is slightly smaller than its Indian relative. A large specimen will stand five and a half feet at the shoulder, but the average is about five feet. The record horn is only ten and three-quarter inches long. Females often are hornless, or if present, the horn is a mere knob. The heavy hide is divided into sections by three deep folds, just as in the Indian rhino. However, unlike the latter, the fold starting in front of the shoulder goes completely across the back, cutting off a triangular section on top of the animal's neck. There are no "rivet heads" on the shoulder and rump plates.

Instead, the entire body is covered with a mosaic-like pattern of fine cracks from which is derived the Malay name for the beast, "badak tenggiling," meaning scaly rhinoceros.

Excepting for the tips of its ears and tail, the Javan rhino is quite hairless, agreeing in this respect with the Indian rhino, and differing from the Asiatic two-horned species. The last named is quite hairy.

In an effort to help save this very rare animal from extinction, the conservation-minded officials of the Netherlands Indies have set aside a sanctuary for it on the Oedjoengkoelon Peninsula, at the western end of the island of Java. Scientists are not sure whether this species occurs in the neighboring island of Borneo.

The Asiatic two-horned rhino still has an extensive range although it is becoming rarer every year. It already has been exterminated in the shaded areas on the map.



Javan rhino once ranged throughout much of the Malay region and beyond the Ganges River. It is now confined to the areas shown in black.

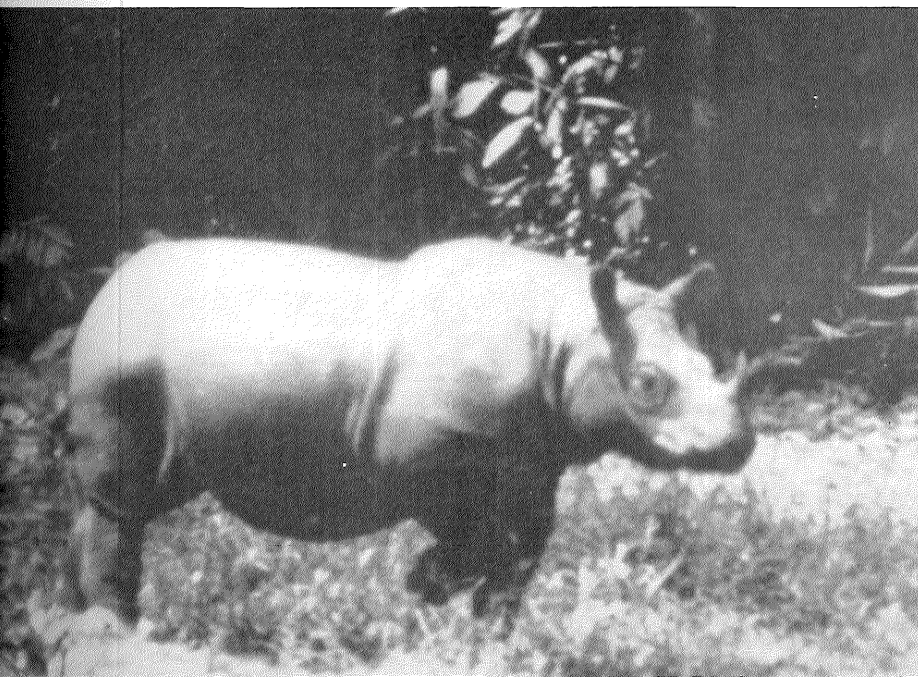
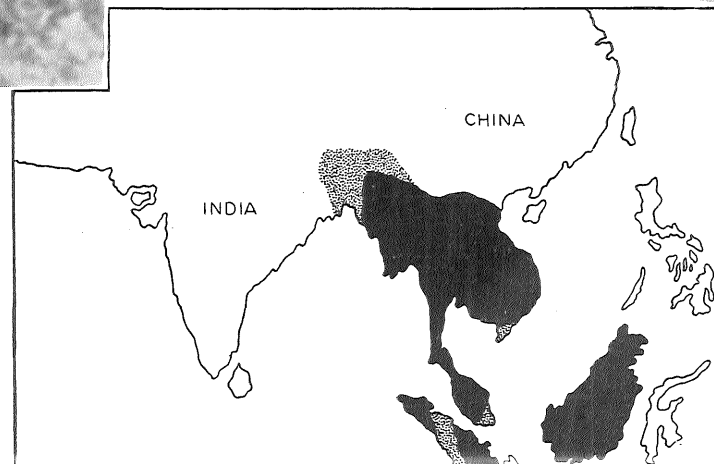


Photo by Theodore Hubback

## ASIATIC TWO-HORNED RHINOCEROS

This species, *Didermoceros sumatranus*, is the smallest of the Asiatic rhinos. A large male measured only four and a half feet at the shoulder and eight feet, six inches, from the tip of its nose to the root of its tail. The record horn, except for one of doubtful origin, is fifteen inches long. The rear horn, rising just in front of the eyes, is much smaller than the horn on the nose.

The skin of this rhino is smooth, but covered with bristly black hair. A single fold starts behind the shoulder and goes across the back. The upper lip is hooked as in the Javan rhino. The photograph was taken in the jungle.



The horns of the Asiatic rhinos are spelling their doom. For many centuries Orientals, particularly the Chinese, have believed that they possess great medicinal properties. The horn either is ground into a powder and taken internally, or it is made into small charms. As the rhinos have become scarcer, the horns have increased in value, until today a rich Chinese will pay a small fortune for a single one. Murder even has been committed to obtain possession of such a treasure. Such is the demand for horns that progressive Chinese merchants import them from Africa.

In medieval times most Europeans were as superstitious as modern Orientals, and the horn of the "unicorn" was considered the supreme remedy for all illnesses. Often the horns, supposedly secured from the fabulous "unicorn," turned out to have come from the Indian rhino. Such a horn, with its tip missing, is in the American Museum of Natural History in New York. The tip was ground into powder and used in a last effort to save the dying Pope Gregory XIII. Monarchs in the Middle Ages were in constant fear of being poisoned and a cup carved from a rhinoceros horn often was a prized possession. If any poison touched the cup, it was supposed to split into fragments.

### **The Great Indian Rhino**

The great one-horned rhinoceros of India is the largest Asiatic species. Its home is in the tall grass jungles in the foothills of the Himalayan Mountains. Only four hundred years ago it ranged along the base of the mountains as far west as the Indus River but today it is making its last stand in Assam and the native states of Bhutan, Cooch Behar and Nepal. There probably are less than five hundred of these rare animals now alive. An excellent reason for their survival in the above mentioned native states is that the privilege of hunting them is reserved for persons of royal blood and these Oriental peoples have a most efficient way of dealing with poachers.

The first rhinoceros to reach Europe since the days of the Romans was one of the Indian variety presented to King Emanuel of Portugal by an Oriental potentate in 1513. Emanuel appreciated the thought motivating the gift but he strenuously objected to the feed bills the animal incurred, so he sent it to the Pope at Rome as a token of his esteem. At sea the rhino went on a rampage, so the story goes, and succeeded in sinking the ship and drowning itself and all the crew.

Old Pete, the Philadelphia Zoo's first Indian rhino, arrived in 1875, a few months after the Zoo

was opened to the public. For years he had traveled with a circus, but his fondness for swaying in his cage-wagon, until he yanked the horses out of their harness, forced the showmen to sell him. Pete was a favorite at the Zoo for more than a quarter century, although his temper was rather short. At times a keeper could enter his cage and shove him about, but there was never any warning as to when Pete would suddenly turn in blind fury and try to crush the nery fellow. The rhino delighted in charging, full-tilt, at the brick walls of his cage with all the force of his three and a half tons of bone and muscle.

After Pete's demise in 1901, the Zoo did not get another Indian rhino for more than a score of years. Then in 1922, Frank Buck was commissioned to collect and deliver two specimens, one each for the New York and Philadelphia Zoos. Realizing that the native state of Nepal, where foreigners are extremely unpopular, was his only hope, Buck broached the subject to General Kaiser Shum Shere, nephew of the Maharajah and commander of the Nepalese Army. After long discussion the General agreed to capture two rhinos for the modest sum of \$12,600!

A colorful expedition, consisting of thirty elephants and a hundred Gurkha soldiers, marched into the grass jungles of southern Nepal. There the grass towers fifteen feet in the air and the rhinos hide in it as easily as rabbits in a wheat field. The expedition took advantage of the fact that when its mother is slain, a baby rhino will stand by her side, often bawling piteously and refusing to leave until decomposition sets in. In consequence two adult females were shot. After a few days their babies quieted down, they were put in corrals, and finally were transferred to heavy wooden traveling crates.

Native oxcarts hauled the youngsters out of Nepal and then they were loaded on a railroad flat-car. Knowing how anxious the natives are to secure rhinoceros horns, Buck kept constant guard over his valuable charges, but somehow, somewhere, a Hindu succeeded in gouging a piece out of the New York rhino's horn. As a result this animal's horn is, to this day, in two sections.

Maharanee (now known as Peggy), reached the Philadelphia Zoo on May 24, 1923, and cost \$8,000, making her purchase price greater than that of any other animal in the Garden. Standing four feet, six inches at the shoulder and weighing about three tons, she is as gentle as a lamb. Pat Cronin, her keeper, may sit on her broad back, stand on her head and even pull back the heavy shields of her

hide to show the thin, pink skin underneath. Like old Pete, Peggy has worn her horn down to a shapeless lump by grating it against the cage bars and walls.

### **The Javan Rhinoceros**

The second Asiatic species, the Javan, or lesser one-horned rhinoceros, is slightly smaller than its Indian relative and it is now the rarest of living large mammals. It has been estimated that less than seventy individuals are still alive. In former times it had the widest range of all the Asiatic rhinoceroses; today the survivors are widely scattered. A few still live on the islands of Java and Sumatra and, on the mainland of Asia, a few remain in Indo-China, Siam, Burma and the Malay States.

The most notorious Javan rhinoceros lived in the Pinjih Valley of the Malay State of Perak. Long before the British arrived in Perak in 1874, this animal was famous among the natives. A surly brute, he had attacked many men traveling along the dimly lighted forest trails and had killed at least three. In attacking he did not use his horn but bit the victims with his great tusks. Occasionally a bold Malay shot at him, but with no effect. Soon he became a mythical figure and they said he was "Kramat" (the supernatural) for they thought it impossible to kill him; no native dared venture into the jungles where he roamed. Eventually, a British army officer decided to take up the hunt. He traveled into the jungle by elephant and, coming upon his quarry's trail, left the elephant and its driver, and started off through the jungle with a tracker. After many hours of walking, the tracker suddenly pointed out a huge form half hidden in the jungle growth. Quickly the hunter fired. And shot the rhino? No—his own elephant! Kramat finally was killed by Sir George Maxwell in 1899.

### **The Smallest Species**

The smallest of the living rhinos is the Asiatic two-horned rhinoceros. It is a mountain-loving animal, living in rugged hill jungles where it climbs about with the agility of a goat.

One day in 1868, in eastern Bengal, two natives ran excitedly to the local English officials. Hurriedly they explained how they had found a two-horned rhinoceros mired in quicksand and almost exhausted. After summoning all the natives in the region, they had fastened two ropes to the rhino and pulled it out of the mire. It took more than two hundred natives to free the beast, and by keeping the ropes taut, the men had maneuvered it between two trees and tied it there.

The Englishmen, realizing what a prize the animal would be for any zoo, set out with eight elephants to secure it. When the elephants scented the rhino they became badly frightened and ran away. Soon they were quieted and one was driven up on each side of the beast. A native cautiously tied a rope to one of the rhino's legs and the other end to an elephant's leg. Suddenly the rhino snorted and the elephant bolted away, panic stricken. If the loosely fastened rope had not slipped the rhino might have lost a leg. Finally the elephants overcame their fear of the rhino and it was securely tied between two of them, and in this way was marched into the town of Chittagong, followed by a mile-long procession of laughing natives.

Along the line of march was a large river and, fearing to break down the rickety bamboo bridge spanning it, the elephants and their sandwiched prisoner were forced to swim across. The great procession of curious natives swarmed onto the bridge to watch the performance. Suddenly there was a crash and a howl of dismay as the bridge collapsed and hundreds of spectators splashed into the river. The natives refused to learn from experience, however, and succeeded in breaking down every bridge along the route. The animal eventually arrived at the London Zoo where it lived until the year 1900.

According to Theodore Hubback, of Pahang, who probably knows the two-horned rhino better than anyone else alive today, a Malayan rajah once kept one for a pet. He shot its mother and brought the hairy little fellow home. The rhino roamed through the forest during the day, feeding and wallowing. In the evening the Malays called "Hoh, hoh, hoh," and it came running back to eat the rice set out for it. Then, like a dog, it would sleep contentedly under the house.

### **The Black Rhinoceros**

The smaller of the two African species is the well-known black, or hook-lipped rhinoceros. The "black" rhinos are really brownish grey in color. However, they like to take mud baths and so, depending upon the soil, they may be red, black or white in color!

Normally this rhino has two horns but occasionally three or even more may occur. Usually the front horn is the longer but sometimes the rear one equals or even surpasses it in length. Years ago the rhinos with long rear horns were considered to be a distinct species, called the keitloa, and were reputed to be much more dangerous than the common black rhino.

These bulky beasts, browsing on the bitter leaves and twigs of thorny shrubs, can live in areas that scarcely would support a goat. During the heat of the day they take siestas in the meagre shade of an acacia tree and when twilight falls they often travel miles for a drink of water. In Somaliland, where desert conditions prevail, they apparently go without water for long periods. They are very anti-social and usually live alone and like it. Sometimes a male, a female and a young one may be seen together.

Black rhinos are the most uncertain and dangerous of living rhinos, but often their rushes are misinterpreted. Because their eyesight is poor they depend on their hearing and their sense of smell and, if the wind is wrong, they are as apt to run *toward* an enemy as away from it. This explains their habit of charging caravans. Years ago, when one of them charged a slave caravan, in which helpless negroes were chained neck to neck, the result was too disastrous to describe.

More recent rhino "incidents" have been both amusing and serious. During the last quarter-century the cold, swift-flowing streams descending from the ice-fields of lovely Mount Kenya in East Africa have been stocked with trout and become a fly-fisherman's paradise. But rhinos are allergic to trout-fishermen and many an African angler has been dreaming of a speckled beauty "in the pan" when a loud snort rudely made him drop his best rod and climb a nearby thorn tree. Since a fatal accident occurred some years ago, the government of Kenya has erected signs warning fishermen about the rhinos.

### The White Rhinoceros

Next to the elephants, the white or square-lipped rhinoceros is probably the largest land mammal now alive, although the Indian rhino may equal it in bulk. It is impossible to state with certainty which is the larger, for it is extremely difficult to weigh such huge animals either in the field or in a zoological garden.

The "white" rhino's skin is almost the same color as that of the black, or hook-lipped rhino and, like its relative, it gets its color from the mud in which it last wallowed. "Pink" rhinos are not news to explorers, and black, white, green and blue ones have been seen. Probably the man who named the white rhino saw one that had just disported in a puddle of white clay, such as those which are found in parts of South Africa.

When discovered in 1812, the white rhinoceros was a common South African animal; the grassy

veldt was dotted with the big brutes. But discovery meant doom. During the next several decades the tragic history of this animal paralleled that of the American bison. The huge, timid beasts were hunted relentlessly, being slaughtered in the name of sport, and for their horns and flesh. The natives who had lived in harmony with the herds of big game for countless centuries, secured guns and, not to be outdone by the white men, joined in the bloody orgy. Between 1843 and 1846, Roualeyn Gordon Cumming, the famous English hunter, killed fifty rhinos and half of these were of the square-lipped variety. He vividly described the shooting of five rhinos in one night at a water hole in Bechuanaland. A few days later he regretfully left this water hole because the stench of the carcasses drove all the wildlife away.

In 1848 Messrs. Oswell and Vardon, "sportsmen," bagged eighty-nine rhinoceroses, and most of these were of the white species. Although normally timid, one of these animals gave Oswell an exciting encounter, after he had succeeded in wounding it from horseback. Instead of running away, as the white rhino usually does when injured, this one charged. Oswell's horse, badly frightened, refused to move and was transfixed on the rhino's long horn. The horn passed clear through, to emerge on the opposite side against the rider's leg. The hunter was thrown to the ground but the rhino did not attack him further. Oswell mounted another horse and soon slew the beast.

Another English sportsman, C. J. Andersson, boasted of having killed nearly sixty white rhinos in one season, and an unnamed European killed nine in one day!

With all this destruction it is easy to understand why many people, in 1890, thought the white rhino to be extinct. However, in 1894, a few individuals were found living in Zululand and there the Umfolosi Reserve was set aside for them. Today there are about two hundred animals living in and about the Reserve.

Of outstanding importance was Major Gibbon's discovery, in 1900, of a northern race of the white rhinoceros at the head waters of the Nile in the Anglo-Egyptian Sudan. No one had ever dreamed of finding the animal in this area, twelve hundred miles north of its South African range. It has been estimated that more than two thousand white rhinoceroses live in this area.

The white rhino is the only species which has never been exhibited in a zoological garden. Specimens from the Umfolosi Reserve someday may find their way into zoos, and now that the territory in-



# THE AFRICAN RHINOCEROSSES

## THE WHITE RHINOCEROS

The White, or Square-lipped Rhinoceros, *Ceratotherium simum*, is the larger of the two African species. A large bull stands five feet, eight inches at the shoulder and measures fifteen feet, five inches from nose to tip of tail. The largest rhinoceros horn on record belonged to a female white rhino, killed in South Africa. This weapon is five feet, two and a quarter inches long, but it is very slender. The horns of the females usually are longer and much more slender than those of the males.

Most of the distinguishing characteristics between this animal and the black rhinoceros may be seen in the heads and shoulders of the two species. Perhaps the most easily recognized difference is in the upper lip. In the white rhino the lip is straight and rather rigid. The lower lip also is straight and has a horny edge which is useful in shearing grass, upon which the white rhino feeds exclusively. In the black rhino the upper lip is sharply pointed and prehensile; the resultant "finger" is useful in plucking leaves and twigs from the shrubs on which black rhinos feed. The white rhino's head is huge and, in life, it is carried low with the nose almost touching the ground. To support the great weight of the head, there is a large hump of muscle on the neck, and this is another characteristic of the white rhino.

Often a knobkerrie, or war club, made of white rhino horn, was the prized possession of the native rulers of South Africa. Indeed, like big-game hunters, they often vied with one another in possessing the longest horn. Since females have the longer horns, this practice helped greatly in exterminating this animal in the southern part of its range.

White rhinos usually are placid, pig-like animals, which live in family groups, often consisting of a bull, a cow and several calves of different ages.

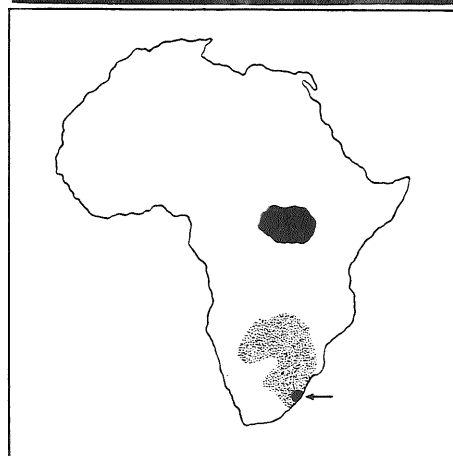
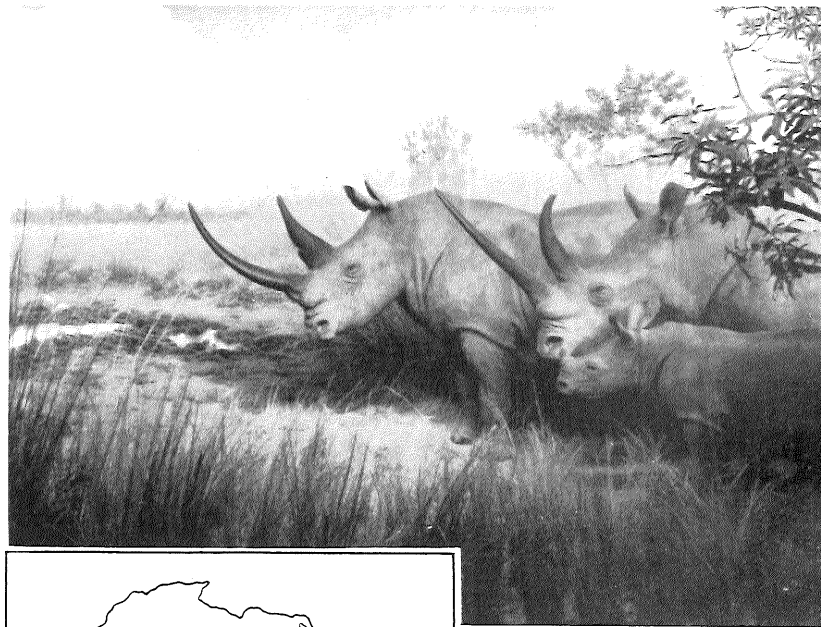
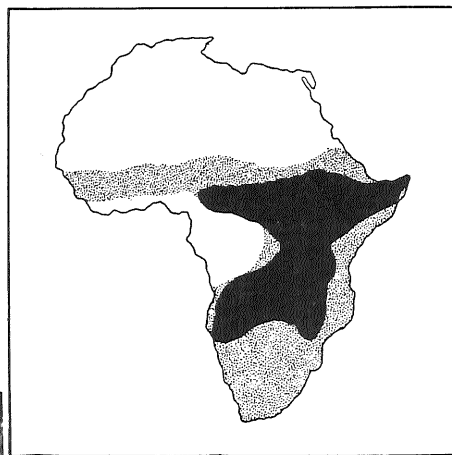


Photo Courtesy  
American Museum Natural History

The range of the white rhino is discontinuous. The southern population has disappeared entirely except for a small number of animals living in the Umfolosi Reserve (arrow). The northern race has been little disturbed and white rhinos are still common in the area shown in solid black.

all of Africa, except for the deserts of the north and the rain forest of the west coast, was once inhabited by the black rhinoceros. Since the coming of the white man its range has shrunk considerably and this species can be found today only in the portion of the map which is printed in solid black.



## THE BLACK RHINOCEROS

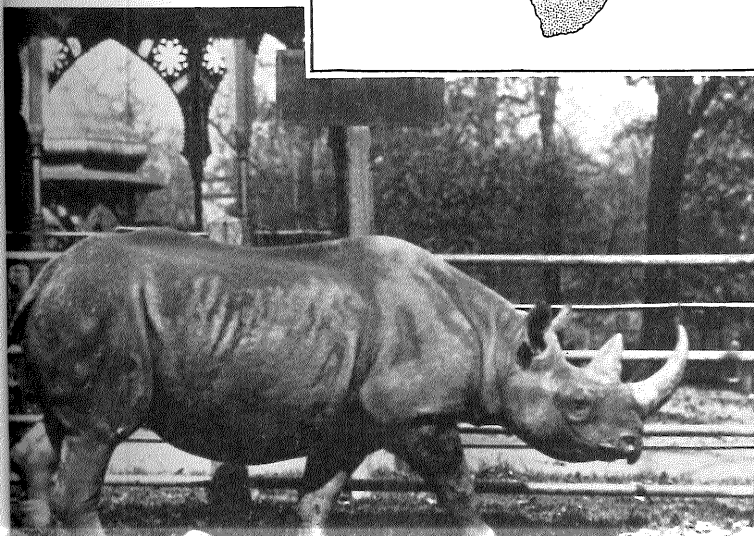
The Black, or Hook-lipped Rhinoceros, *Diceros bicornis*, is the most abundant of all the living species and the one most frequently seen in zoos. The female shown was exhibited in the Philadelphia Zoological Garden from 1912 to 1917.

A large bull will measure five and a half feet in height, and twelve feet from the tip of the nose to the base of the tail. The longest horn on record measures four feet, five and a half inches, but this is very unusual. Most horns rarely exceed eighteen inches.

Excepting for a slight fold of skin which divides the foreleg from the shoulder, the hides of the black rhinos are smooth, although creased by a multitude of tiny wrinkles. Bristly hair edges their tails and big ears, and often the latter are ripped and torn by "wait-a-bit" thorns.

The best friends of the rhino are the tick birds, or ox-peckers, which perch on the animals' backs and act both as clean-up squads and as sentinels. Tick birds cling to the rough hide of the rhino with their sharp claws, sometimes upright, like woodpeckers, sometimes with heads downward, like nuthatches, as they feed on the fat, shiny ticks in the seams of the thick hide. While the rhino sleeps, the birds keep watch and should a human being appear—the rhinos' only enemy—the birds fly up, calling shrilly. A rhino sleeps lightly and its ears quickly catch the alarm.

In 1919 Abyssinia honored the black rhino by placing its portrait on a postage stamp.



habited by the northern race is becoming increasingly accessible, it may not be long before a "chukuroo," as the natives call the great beast, may be seen in captivity.

### And What of the Future?

What does the future have in store for these prehistoric monsters? The outlook is far from bright. In 1875 the London Zoo had gathered together, under one roof, living specimens of four of the five modern species. Only the white rhino was absent. But that was in the days of many rhinos and today there is little hope of any zoo's duplicating this feat.

Undoubtedly the Javan rhinoceros will be the first to go. The surviving individuals are so scattered that few can mate and thus prolong the existence of the species. They are most numerous along the borders of Siam and Indo-China and now that the present world conflict has spread to this remote spot, who knows what will become of these innocent refugees? What possibly may have been the last Javan rhino in the Malay Peninsula was killed in 1932 by Arthur Vernay in order to preserve its hide and skeleton for science. It was mounted for the British Museum. In Dutch territory this species is strictly protected, but even so, J. C. Hazewinkel, a Dutch "sportsman," horrified conservationists in 1932 by announcing that he had slain no less than seven of these rare animals near Palembang in southern Sumatra.

Next to disappear will be the Indian rhinoceros. Its fate is mainly in the hands of native rulers and if future rajahs should evince no interest in preserving this beast, its continued existence would be precarious indeed. When General Shum Shere shot Peggy's mother, he didn't stop there. Before his hunting trip was over, he had killed twenty-one rhinos! Their horns were sold to a Chinese merchant who came all the way from eastern China to get them.

Probably the Asiatic two-horned rhinoceros will be the third to become extinct. On the mainland of Asia it is extremely rare. Once common in Malaya, it has been "pitted" practically out of existence. The native poachers dig deep pits with sloping sides. These are located along trails used by the rhinos and when one falls into a pit it becomes wedged against the walls and its feet cannot touch the bottom. At their leisure, the poachers transform the blood, bones, skin and horns into medicine for the Chinese.

While in northern Sumatra in 1939, as a member of the George Vanderbilt Expedition for the Acad-

emy of Natural Sciences of Philadelphia, I saw many old rhino trails in the mountains. A "pawong," or native chieftain, told me that only twenty years ago rhinos were plentiful in the mountain meadows about Mount Loser and he showed me several depressions where they used to wallow in the mud. The pawong and his men had hunted the rhinos there, using guns and deadfalls over the trails. The pawong himself had killed twenty-four. Today these animals are almost extinct in northern Sumatra.

The white rhinoceros possibly will be the fourth to vanish. With the final extinction of the Asiatic species, the value of horns will increase tremendously, and even in its remote home in north central Africa the white rhino will not be safe from mercenary natives. In the Sudan the clashes between the soldiers of England and Italy, during the present war, have come dangerously close to this animal's home.

The farmers of Natal have, for some time, urged the abolition of the Umfolosi Reserve because it harbors the tsetse fly. On this reserve live most of the remaining white rhinos in southern Africa. Many farmers have begrudged these animals the land on which they live and have tried to obtain it for their own uses. They have even killed some of the beasts, reasoning that when the animals were gone the government would no longer have any reason for keeping the land.

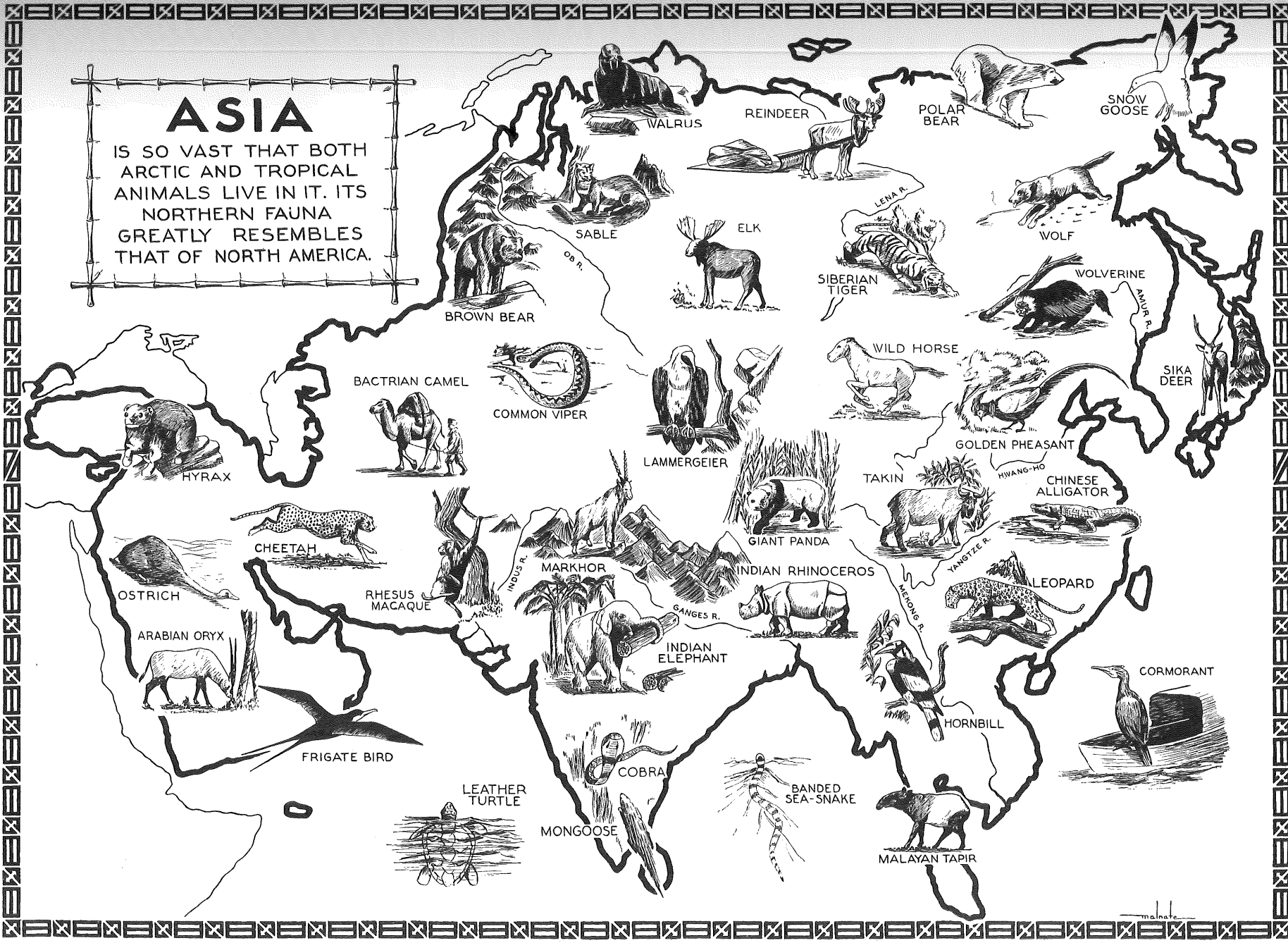
Last of this noble group to disappear will be the black rhinoceros, which even now, finds its great range shrinking. Once the others are gone, all the guns of sportsmen, horn hunters, settlers and farmers will be pointed at it and the end will come quickly. Several African ranchers have tried to preserve some of these truculent brutes on their lands but finally have had to shoot them for safety's sake.

The English forbid the export of rhinoceros horn from eastern Africa but large quantities have been shipped each year from Italian Somaliland to Zanzibar and thence to China. Often rhinos are killed in Kenya and their horns smuggled into Somaliland. During the World War many black rhinos were killed by soldiers participating in the East African campaign, and should the present hostilities spread still more, the black rhino may again suffer.

So one after another these marvelous beasts, suggestive of bygone ages, are sure to go. Only the most careful protection may save some of them, and it may not be many years before they are only a memory and the last of their mortal remains will be found only in museums. The next time you visit a zoo take a good look at the rhinoceros. You may never see another one alive.

# ASIA

IS SO VAST THAT BOTH  
ARCTIC AND TROPICAL  
ANIMALS LIVE IN IT. ITS  
NORTHERN FAUNA  
GREATLY RESEMBLES  
THAT OF NORTH AMERICA.



WALRUS

REINDEER

POLAR BEAR

SNOW GOOSE

SABLE

ELK

SIBERIAN TIGER

WOLF

WOLVERINE

BROWN BEAR

WILD HORSE

SIKA DEER

BACTRIAN CAMEL

COMMON VIPER

LAMMERGEIER

GOLDEN PHEASANT

HYRAX

CHEETAH

MARKHOR

GIANT PANDA

TAKIN

CHINESE ALLIGATOR

OSTRICH

RHESUS MACAQUE

INDIAN RHINOCEROS

INDIAN ELEPHANT

LEOPARD

ARABIAN ORYX

FRIGATE BIRD

COBRA

BANDED SEA-SNAKE

HORNBILL

CORMORANT

LEATHER TURTLE

MONGOOSE

MALAYAN TAPIR

OB R.

LENA R.

AMUR R.

INDUS R.

GANGES R.

YANGTZE R.

HWANG-HO

malnate