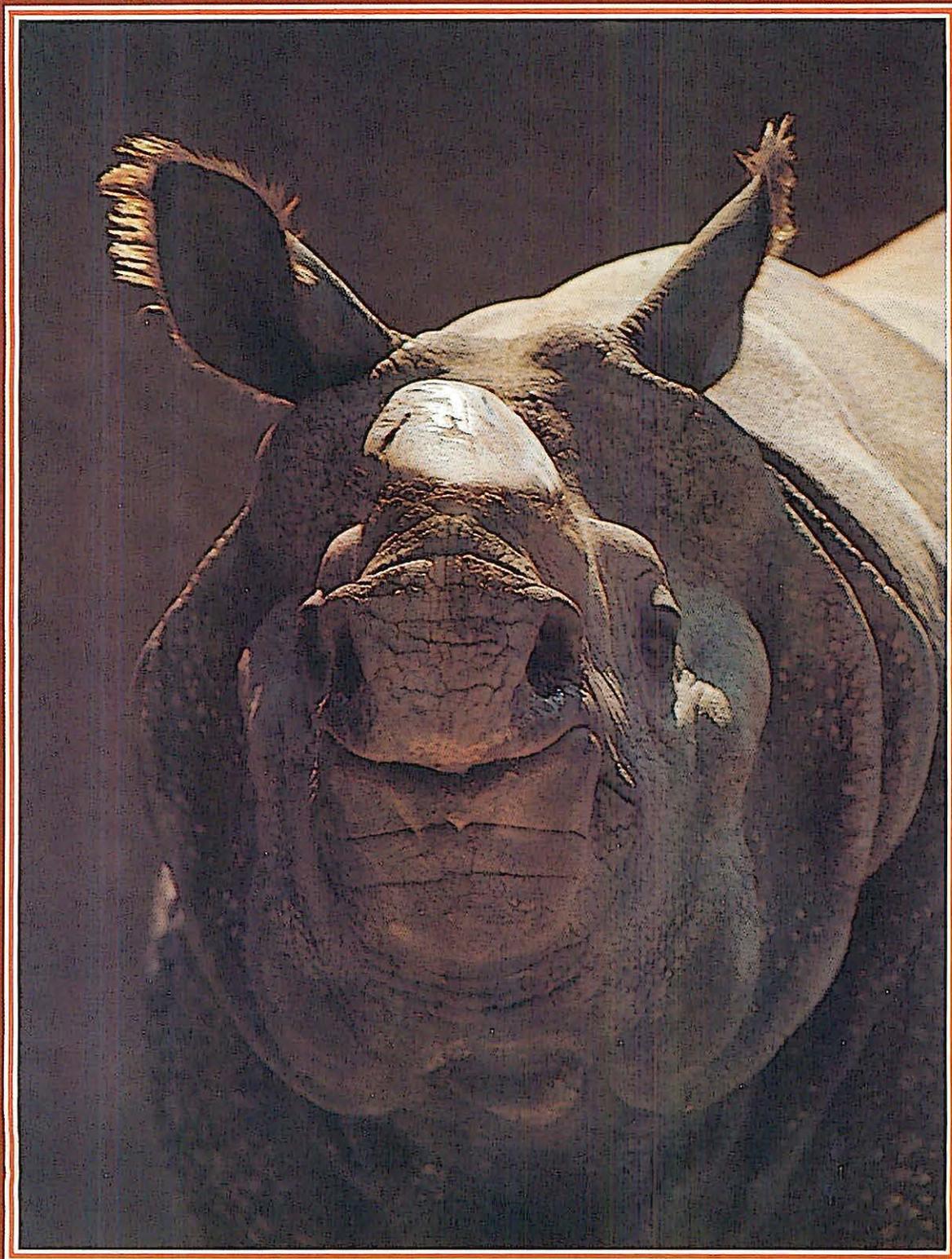


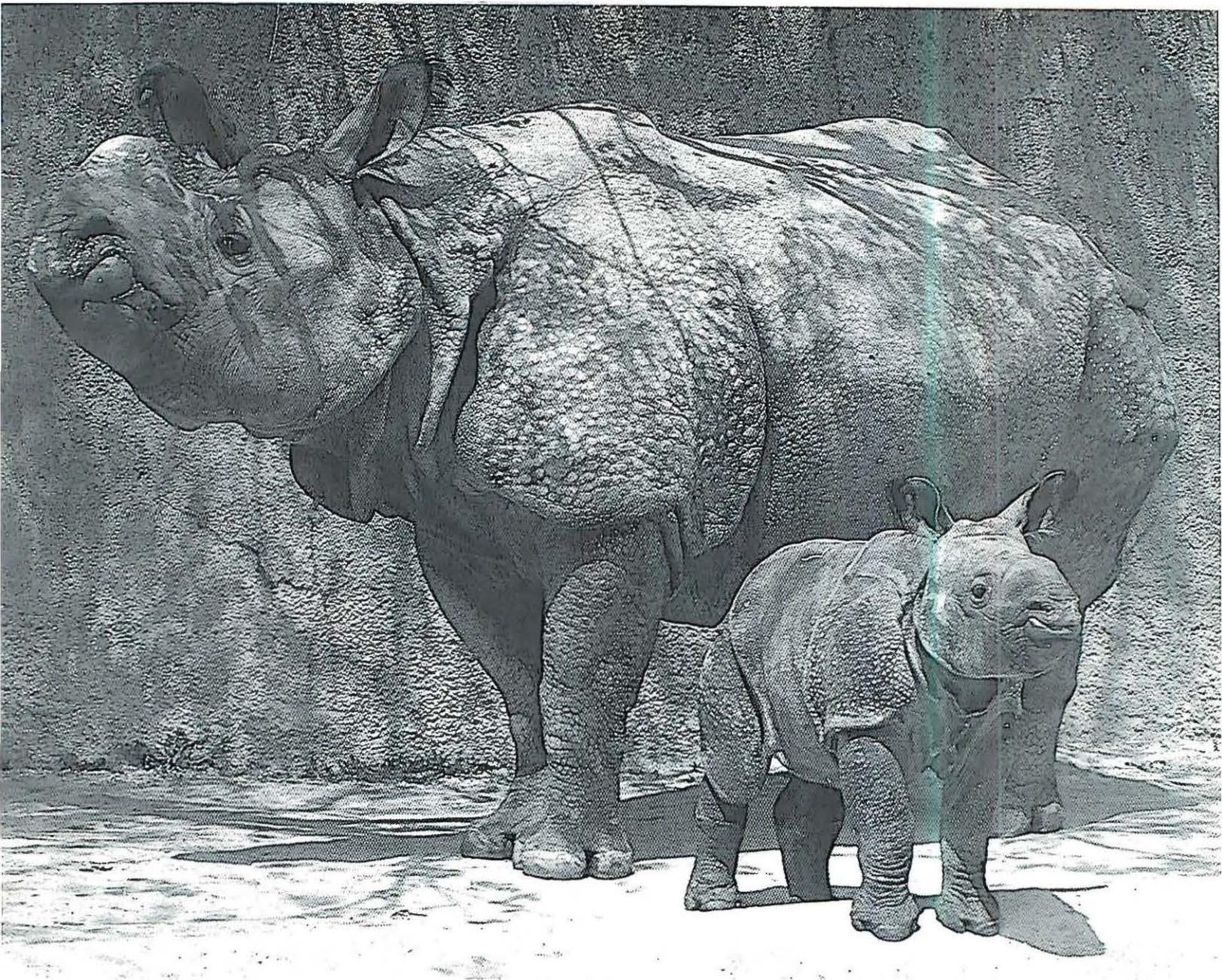
zooview

The Quarterly Magazine of the Greater Los Angeles Zoo Association

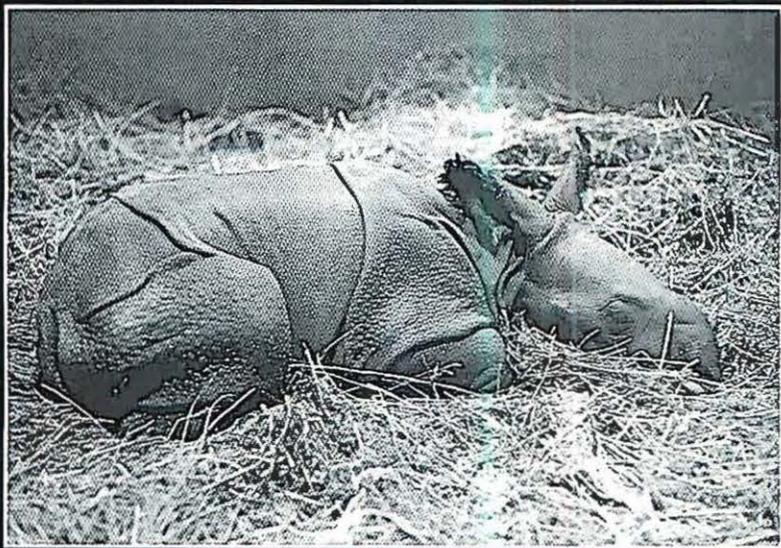
Thomas

FALL 82/ONE DOLLAR





When Meetha was two weeks old, she and her mother were placed on exhibit for the first time. Both animals took their initial encounter with the visiting public in stride.



*One day old Meetha taking a nap. Note the skin folds are already well-developed.
(Photo credit to Michael Dee)*

The RHINOCEROS

A Last Act or a Continuing Performance

of the WORLD

By Warren D. Thomas, DVM
Research By Michael Dee

The crisp, cool morning air helped to dispel the remaining sleepiness that resulted from going to bed late and rising early. The sun was just beginning to show over the distant hills from the east. Off to the north in the pale haze of the early morning, the rugged foothills of the Himalayas loomed in hues of pink and violet. The clanking of chains and creaking of leather and wood brought me back from the mesmerizing effect of the morning light show.

A large elephant was approaching with his mahout firmly planted on his neck. I mounted the elephant and settled into the primitive howdah strapped to its back. There was little dialogue between myself and the mahout since my command of Hindu was even less than his command of English.

We moved down a gradual slope into a low flood plain of the Brahmaputra River. As we descended the path into the almost impenetrable elephant grass, it was as if I were transported back in time to a moment in the primeval period of the Cenozoic. I could not help but be struck by the contrast of this peace and beauty of nature with the world I had left two days before in Calcutta - the oppressive, chaotic world of crowded streets with the odor of decaying vegetable matter and filth plus the cacophony of sound from street peddlers, arguing merchants and automobile horns. I had left the hostile world of man to seek refuge in the peaceful, unchanged world of nature.

All at once, in an almost explosive fashion, there was a loud snort followed by a series of grunts and snorts and the crashing noise of a heavy body forcing its way through the vegetation. I could hear the sound effects, but

not see into the heavy vegetation. Sometime later we eased our way out of the grass into an open space where a finger of the Brahmaputra River extended into the center and the low grass gave way to higher grass around the edge. In front of me was a great Indian rhinoceros and her calf. It was as if the rhinos sensed our presence rather than saw us as we quietly inched closer to them. Surprisingly, the cow allowed us to get within twenty meters before she took off at a trot snorting as she moved and pushing her calf in front of her, their heavy folds of skin moving up and down like flaps. The swampy, boggy ground swished in pools of water under her weight.

Although I was lucky enough to see perhaps ten more Indian rhinoceros during the rest of the day in the Kaziranga Reserve in Assam, India, none of the other encounters had quite the thrilling, dramatic impact of the first two. It is something I will never forget.

The rhinoceros reached its apogee of development during the middle of the Cenozoic. They were the most numerous at that time, the most widespread and in many respects the most diverse. They were found everywhere — from the frozen Arctic which was the home of the woolly rhinoceros; to a temperate environment where the European rhinoceros (not that different from the African black rhinoceros) resided; to the subtropics where absolutely immense forms such as the *Baluchitherium* lived. These were 15-20 feet tall, weighing many tons and much larger than any living elephant of today.

This diverse and important family

has two geographic divisions which are made up of five living types of rhinoceros.

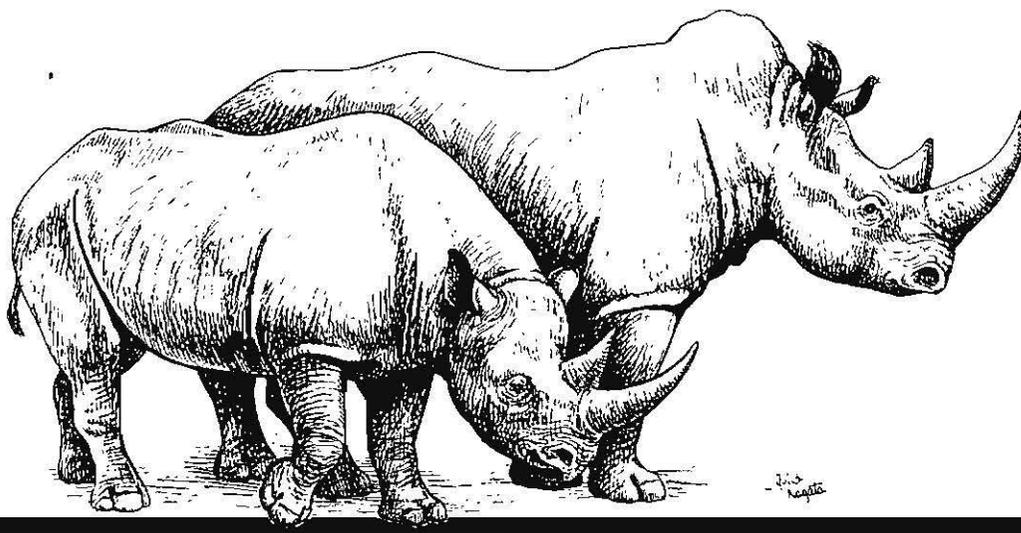
AFRICA

In Africa the rhinoceros is represented by two genera: the black or hook-lipped rhinoceros (*Diceros bicornis*) and the white or square-lipped rhinoceros (*Ceratotherium simum*).

The black rhino, first described in 1731, has always been the most numerous of the worlds' rhinoceros yet paradoxically it is now one of the most threatened. In size it is 1.4 - 1.5 meters at the shoulder and can weigh between 1 - 1.8 metric tons. Found in open scrub, it tends to be a browser using its prehensile lip as an efficient food gatherer. This is the rhinoceros probably best known in recent times. Like all rhinoceros, it has poor eyesight but a very good sense of hearing and smell. Extremely agile for its size, the black rhino, like most rhinos, is capable of quick turns and can travel at the surprising speed of up to 45 kilometers per hour.

Though the black rhinoceros is still the most numerous, it is in greater jeopardy of extinction than the white rhinoceros of southern Africa. The black rhino's skin has always been valued for whips and shields by the African natives; however, the biggest pressure is for its horn which commands a very high price on the international market. In great demand by apothecary shops in Asia, the powdered horn is used as a remedy for some human problems. There is also high demand for the horn to be carved into dagger handles for the Middle East trade.

The black rhino's future is uncertain. Indications now show that it will be

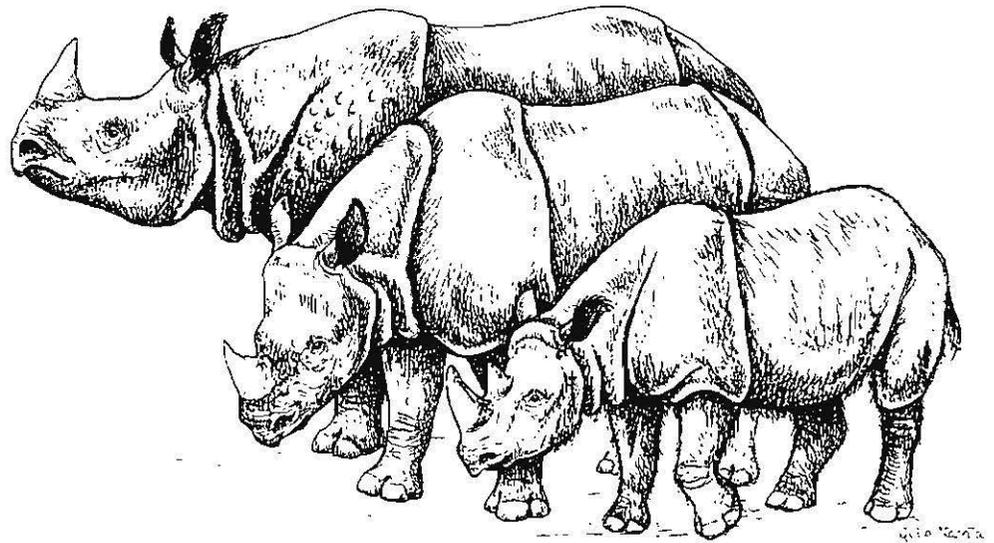


totally extinct over much of its former range in a relatively short time. Because of the difficulties of management in captivity, they have done only marginally well, partly due to how they have been housed and husbanded. It would appear that enlightened attitudes and efforts towards rhinos in captivity can and must help this situation for the future of the species.

The square-lipped or white rhinoceros is the largest of the remaining living species. The animal stands 1.6 - 2 meters at the shoulder and can weigh between 2.3 - 3.6 metric tons. Of all the rhinoceros it is the only one that is truly gregarious, not only seeking each other's company but appearing to require it for their health and well being.

Unlike the black rhinoceros, they are grazers rather than browsers with grass making up the bulk of their diet. In the late Pleistocene they apparently were found over much of the lands now known as Africa south of the Sahara. In recent history when they were initially encountered and described by western man, they were widespread in southern Africa where they were first described by William Burchell in 1817. To the amazement of the scientific community, a second subspecies of white rhinoceros was discovered and named in 1900. These were found literally thousands of miles to the north in what is now Uganda and Sudan. The northern group has never numbered very high, but because they were isolated it is only recently that they have been heavily preyed upon by man. Now due to the destruction and upheaval in central Africa, they are severely threatened.

The story of the white rhinoceros in southern Africa is a dismal history of



wanton destruction, but fortunately there appears to be a happy ending. Most of the early explorers and hunters in southern Africa recorded the white rhinoceros as being quite numerous. As a matter of fact, Frederick Seale reported that in 1882 while hunting in what is now Botswana and Zimbabwe he found the white rhinoceros to be very common and numerous. In 1885 traveling through the same area, he saw no white rhinoceros and only the tracks of two individuals. In 1889 it was thought that they were totally extinct. This report is not surprising, since there exist records of many European traders having native hunters gather white rhinoceros horns. As many as 400 - 600 horns were ready for shipment at any given time. In those days, as is still true today, the horns were in demand in the oriental, middle east and western markets.

Around 1890 - 1895 many observers wrote that the southern white rhinoceros was gone forever. Fortunately, a

tiny handful continued to survive in a remote part of Zululand. Their numbers are not clearly known; some reports have them as low as six animals, others as high as fifteen. At any rate, it was a sad remnant of what was once a numerous, viable species. Strong protective measures were placed upon the remaining few by the South African government and maintained through the years. The result is that it has done so well in Zululand that the white rhino has been reintroduced into some of its former range and exported to zoos all over the world. This spectacular comeback is the most dramatic example of the recuperative powers of nature when given half a chance. The white rhinoceros' future at this point appears to be secure thanks to the efforts of a few dedicated people, the South African government and enlightened management of the animals by the Natal Parks Board.

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ASIA

Southeast Asia is the home of the other 3 living forms of rhinoceros: the great Indian rhinoceros (*Rhinoceros unicornis*), the Javan rhinoceros (*Rhinoceros sondaicus*) and the Sumatran rhinoceros (*Didermoceros sumatrensis*).

The great Indian rhinoceros is the best known of the Asiatic forms. The size of the animal is 1 - 2 meters at the shoulder and between 1 - 2 metric tons. Unlike the African species, the Indian rhinoceros' skin gives the appearance of being armor plated. It lies in rather well-defined heavy folds and is covered with heavy tubercles truly giving the animal the effect of being covered in a rather elaborate medieval armor. The same pattern is well-defined on the newborn and further develops as the animal ages.

It first made its appearance in Europe in 1515 with an animal sent to Lisbon, Portugal as a gift from an Indian ruler to the King of Portugal. At that time the famous Renaissance artist, Albrecht Durer, saw this amazing animal and made a very famous drawing of it. For a considerable period of time this was the only reasonable accurate drawing or representation in the western world.

Once widely distributed on the Indian subcontinent and Nepal, the Indian rhino now numbers somewhere around 1,000 - 1,200 animals divided on reserves in Assam, West Bengal and Nepal sanctuaries. These solitary rhinoceros are dwellers of riverine, grasslands and swamps. Unlike the African rhinoceros who use their horns for aggression or defense, the great Indian rhinoceros occasionally will use the horn but also has two very large lower canine teeth. The reverse edge of the teeth is maintained razor sharp by a grinding effect with the upper teeth, and the Indian rhino has been known to gut an elephant with these lethal weapons.

In most of the areas where the Indian rhinoceros can be seen today, the most common mode of transportation is the elephant due to the nature of the terrain. A certain amount of training and conditioning is necessary, however, to get the elephant to the point where it will approach close to an Indian rhinoceros.

Few Indian rhinoceros that came into captivity were actually trapped and caught for that reason. The com-

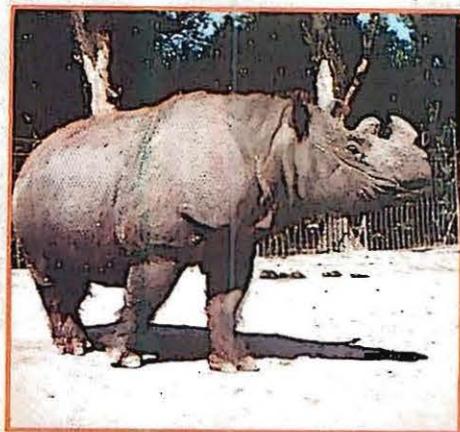
mon method of capture was to dig a pit on a known trail where cows and calves had regularly been seen. Given the fact that the cow generally pushes the calf ahead of her, it was relatively easy to trap the calf, drive the mother away and retrieve the calf for a captive destination. This is no longer done. Calves that do come into captivity now are generally orphans or chance pick-ups.

The Indian rhinoceros, for all its impressive bulk, is an extremely agile animal. Although reputed to be short tempered and unpredictable, they tend to become quite docile in captivity and have been ridden by keepers. A rather famous picture published by the *National Geographic* in 1938 showed an Indian rhinoceros at the London Zoo being used to give children rides. Needless to say, there are none being used in that manner today.

The first recorded Indian rhinoceros birth in captivity was a calf born in 1824 to a pair in the private menagerie of the King of Nepal in Kathmandu. The next recorded live birth took place in Basel, Switzerland in 1956. The Indian rhinoceros is quite difficult to obtain but there are enough now in captivity that the prospects for a captive propagation program looks reasonably good at this time.

A constant threat on the wild population exists because of the value placed on not only the rhinoceros horn but virtually every part of the body which,

(Continued on Page 8)





1
A poached Indian rhinoceros and her calf. Note that the horn on the cow has been removed.

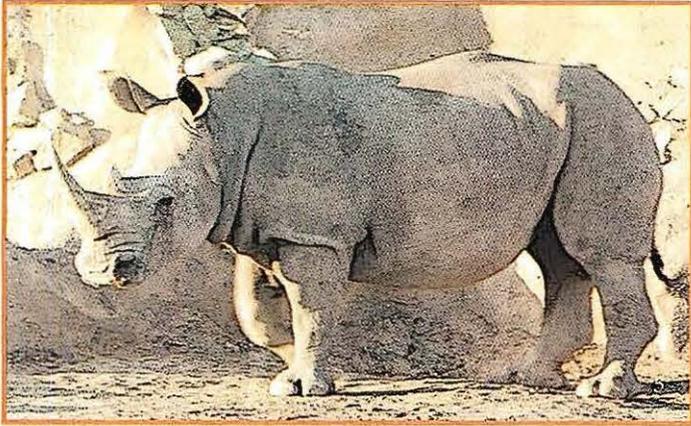
2
Subur, the last Sumatran rhinoceros in captivity died at the Copenhagen Zoo in 1972. She resided there for 13 years. Unfortunately, a mate for her could not be secured.

3
A Javan rhinoceros which lived in the London Zoo from 1874 until 1885. Presently, there are none in captivity. Less than 100 animals remain in the wild.

4
A female black rhinoceros and her calf in Ngorongoro Crater, Tanzania. Captive rhinos rarely have horns this long, often wearing them down on the walls of their exhibit.

5
White or square-lipped rhinoceros at the Gladys Porter Zoo in Brownsville, Texas. This species will not usually breed in captivity unless it is maintained in a herd situation.

6
Indian rhinoceros in the Kaziranga Reserve. Our adult female Radha was captured here in 1967 at the age of approximately eight months.



(Continued from Page 6)

in the oriental market, is considered to have magic medicinal qualities.

The population in India at the moment seems fairly stable with a slight increase occurring. However, this situation is totally dependent on local support and politics. It could change overnight, therefore, the Indian rhinoceros must be considered an endangered species slightly improving in numbers but severely threatened nonetheless.

The Javan rhinoceros was formerly found throughout southeast Asia but is now reduced to one small area in West Java, the Ujung Kulon Reserve, with possibly another small group along the Laos-Cambodia border. The population numbers probably 60 - 80 animals. Its main downfall has been the wanton destruction by man of the animal as well as its habitat.

Much lighter in build and smaller in size than the Indian rhinoceros, it has a similar arrangement of skin flaps as seen in the Indian rhinoceros but does not have the heavy tubercles. Instead, there is a different mosaic pattern to the skin. Javan bulls stand 1.2 meters at the shoulder. The Javan lives in deep, tropical rainforests and is secretive in habit. It has never been shown in captivity in the United States and



An Indian rhinoceros in Jaldapara, West Bengal. (Photo by Michael Dee)

only rarely elsewhere. Its future, as in all the Asiatic rhinoceros, is in grave jeopardy. The only place where the Javan's numbers are increasing is in the Ujung Kulon Reserve. This could pose a problem as the space on the reserve is limited not allowing for growth.

The Sumatran rhinoceros (first described in 1793) is the smallest of the world's existing rhinos. Unlike the other Asiatic rhinoceros, it possesses two horns instead of one. Its height is approximately 1.1 - 1.3 meters at the shoulder. Found in the swampy lowlands of Indonesia and southeast Asia, the Sumatran rhino numbers no more than 150-300 left in the wild.

Oddly enough in the mid 1880's and 1890's it was not uncommon in captivity. Only three have ever been shown in the United States. In recent times only two have made their way to Europe, and the last one died in a zoo in Copenhagen in 1972. This animal, a female, was captured in Sumatra in 1959. Ironically, the Sumatran was one of the earliest rhinos to give birth in captivity. A female delivered a calf while being unloaded at the London docks in 1872, but the calf lived only three days.

The Sumatran rhinoceros is extremely endangered and even though it is spread over a wide range and found in remote isolated pockets, the value of the animal and its products place it in peril. There is now some consideration being given to bringing a handful of examples into captivity to breed them as a safeguard against total and complete destruction in the wild.

At a conference of zoo directors and naturalists held in London in August of this year, the question of how the efforts of zoos should be expended in the future to save the rhinoceros of the world was addressed. All in all, the future for all of the rhinos with the exception of the southern white rhinoceros, is bleak at best; but perhaps, in time, we can save what is left.

THE RHINO'S HORN

All rhinoceros have a horn on the upper part of their nose, some even possess two horns. The horns are not true horns but rather a material more akin to fingernails, fibrous in nature and held en masse by a cementing substance. The horn itself sets on a roughened mound of bone on the skull and there is no bony connection.

Two rhinoceros, battering away at each other, could easily knock off each other's horns. If the underlying tissue is not damaged it will simply regenerate.

The rhino's horn has been part of the bane of his existence for a long time. It was thought to have medicinal properties, which is superstitious nonsense. It was thought to have the properties of a powerful aphrodisiac, which of course is not true. It became a manner of ritual symbolism having to do with male identification; hence, it was sought after. It still is sought as handles for daggers in the Middle East. No

matter which way it is used, it comes at a very dear price.

Rhinoceros horns cost around \$500+ per ounce in some markets. Dagger handles in Yemen made from rhinoceros horns are sold for \$300-\$13,000 apiece. The rhinoceros horn has also been used as an antidote for poisons. It was an oriental superstition that if an individual drank from a cup fashioned from rhino horn, they would not be poisoned. One school of thought said that the poison would be absorbed and neutralized by the horn. Others thought that any poisons placed in the cup would boil and effervesce warning the owner not to drink.

The rhinoceros horn has also been fashioned as an object of art. In the hands of a skilled artisan it can be crafted into very handsome forms giving it the look of amber.

Regardless of how it is used, whenever it is utilized by man it means that a rhinoceros has to die first . . . just one more reason for the demise of these magnificent beasts.



What once was a natural work of art on the rhino . . . becomes an unnatural work of art in the hands of unfeeling individuals.

GLAZA FACTS

By Linda Countryman

RHINOCEROS

RHINOCEROS UNICORNIS (Indian)

R. SONDAICUS (Javan)

DIDERMO CERUS SUMATRENSIS (Sumatran)

DIGEROS BICORNIS (Black)

CERATOTHERIUM SIMUM SIMUM (Southern White)

C.S. GOTTONI (Northern White)

CLASS: Mammalia

ORDER: Perissodactyla

FAMILY: Rhinocerotidae

GENERA: Rhinoceros

Didermocerus

Diceros

Ceratotherium

STATUS: All are endangered

Rhinoceros are such unusual creatures that in order to understand them, we must first look into the past. Although they appear to us to be very large (second only to elephants among land animals today) some of their ancestors were truly giants. The biggest of these, *Baluchitherium*, who lived around 30-million years ago, stood as high as 18' at the shoulders and was probably about 27' long; only a few dinosaurs and whales were bigger than *Baluchitherium*. And there were dozens of other rhinoceros cousins of various shapes and sizes, most of which do not look like rhinos to us since horns were not then a common feature.

The very early rhinos were much like early horses - they were small and had long, slim running legs. Through the years, however, some developed short, heavy legs, while others adapted to a semi-aquatic life. Some even grew a coat of hair, such as the woolly rhinos which were drawn by the cavemen in Europe.

Like modern rhinos, the multi-ton ancient giants were herbivorous and posed little threat or danger to others around them. They were found in North America, Europe, Asia and throughout Africa, in all kinds of habitats and were the dominant animals of their time. Most of them became extinct at least several million years ago and only five smaller species survive today in the tropical regions of Asia and Africa. These, though, weigh only from one to four tons.

Of these five species, the black and the white are found in Africa. They have smooth skins and carry two horns on their snouts. The great Indian rhinos of Asia have skin with heavy folds, resembling armor plating and patterned with rivet-like tubercles. They carry only one horn. The horns of rhinos are unique as they are formed of compressed hair and will re-grow if broken. The horns of other animals such as cows or antelope, have a bony core growing out of the skull and will not re-grow.

All rhinos share similar habits, resting during the hot hours and eating the rest of the day. Most are browsers, dining on leaves, but the white rhino moves like an efficient lawn-mower, chomping on grass. Rhinos tend to stay in one place, beating well-worn paths or tunnels through the brush to reach water. It is a rare day when a rhino does not enjoy at least one good wallow in a muddy river bank.

Oxpeckers and cattle egrets help eat the parasites on their bodies, but a thick coating of mud also helps keep them cool.

Rhinos generally live alone, except during mating time or while a female is raising her calf. Only the white rhinos regularly live in small herds. During courtship, the bull actively pursues the cow. They will snort, bellow, stomp and shove until the bull gives up or the cow relents. There is no fixed breeding season and rhinos are not known to mate for life.

When it is time to deliver her calf (usually a single birth) the cow seeks a covered, bushy area. She continues to avoid contact with other rhinos until her calf is at least half grown. The new calf may weigh 80-120 pounds and is on its feet and nursing within a few hours (this is typical of all hooved animals for whom flight is the first line of defense). Despite their great size, healthy, adult rhinos are extremely agile and have no enemy except man. Other predators rarely get past a determined mother to attack her baby.

The bond between the cow and her calf is exceptionally strong, so much so that if the mother dies, the young rhino might stay by the body and possibly starve to death. When all goes well, however, they remain together until a new baby is due and then the mother drives off the older calf.

Rhinos may live up to 50 years, but most never reach that age due to hunting and poaching. For centuries, the people of many Asian countries have believed that various parts of the rhino are strong medicine, especially the horn. Even though poachers know they may be shot on sight they are still willing to take the chance because they can make so much money from the sale of the horn. And, unfortunately, they are successful enough to be pushing the rhino to the edge of extinction.

This pressure, when combined with tremendous loss of natural habitat and the rhinos' low reproductive rate, have reduced their range and numbers enormously. There may be fewer than 60-80 Javan rhinos alive today and only about 150-300 of the hairy Sumatran species. The great Indian still numbers about 1,000-2,000 and their African cousins are doing somewhat better.

While this may be a discouraging story, it cannot be denied that rhinos have been on a down-hill slide for thousands of years. However, man has served to accelerate their disappearance.

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The Rhinoceros in Captivity

The Los Angeles Zoo Story

By Warren D. Thomas, DVM
Research by Michael Dee



Every living form of rhinoceros now existing in the world has at one time or another been kept in captivity. Although relatively easy to keep in captivity, they are not that easy to breed. The rhinoceros represents a mass of incongruities and contradictions.

Most rhinoceros are naturally solitary animals except for the square-lipped or white rhinoceros which tends to be strongly gregarious. They are known for their short tempers and violent reactions, yet they commonly

become so docile in captivity that they literally can be ridden.

They have been kept for long periods of time in enclosures barely larger than themselves; however, they only flourish when given a considerable amount of space. It is dangerous to put another species of animal in with them unless the enclosure is extremely large, but even this can be done in smaller enclosures if the introduction of the animal is conducted in a slow, careful manner.

The rhinoceros can be exceedingly dangerous because of its size and physical ability. They often suffer from chronic foot problems and are not easy to treat. One of our own males developed abscesses and fistulous tracks in one foot and leg which took almost an entire year to eliminate.

The Los Angeles Zoo maintains three different types of rhinoceros: the white or square-lipped rhinoceros (*Ceratotherium simum*), the black or hooked-lipped rhinoceros (*Diceros bicornis*), and the great Indian rhinoceros (*Rhinoceros unicornis*).

When dealing with the rhinoceros, zoo directors have to consider that the value of a male Indian rhinoceros can be as high as \$70,000 - \$80,000 and a lone female could be worth well over \$100,000. Given the premise that when they breed rhinos tend to be

brutal with each other, it takes more than a normal ration of nerve and intestinal fortitude for a zoo director to watch \$80,000 worth of male batter the daylights out of \$100,000 worth of female. Additionally, replacement of the animal is nearly impossible as well as costly. Unfortunately, for a number of years too many rhinoceros were not kept together for this very reason.

In the wild when the female comes into estrous and is receptive to the male, she has considerable space to escape from him if the advances of the male become too threatening or more than the female can tolerate. In captivity, however, rhinos can be put together only in controlled situations because rarely does a zoo have an enclosure large enough to simulate the wild safety mechanism.

The Los Angeles Zoo first obtained white rhinoceros in August, 1965. A few feeble attempts at breeding were made by the rhinos and then sexual activity ceased. The rhinos were a total loss as a breeding, functional pair and only useful for display purposes. The basic reason for the lack of breeding is twofold—numbers and space.

Many, many years ago I had the opportunity to talk at length with Ian Player who, at that time, knew as much or more about the white rhinoceros than anyone else. When asked