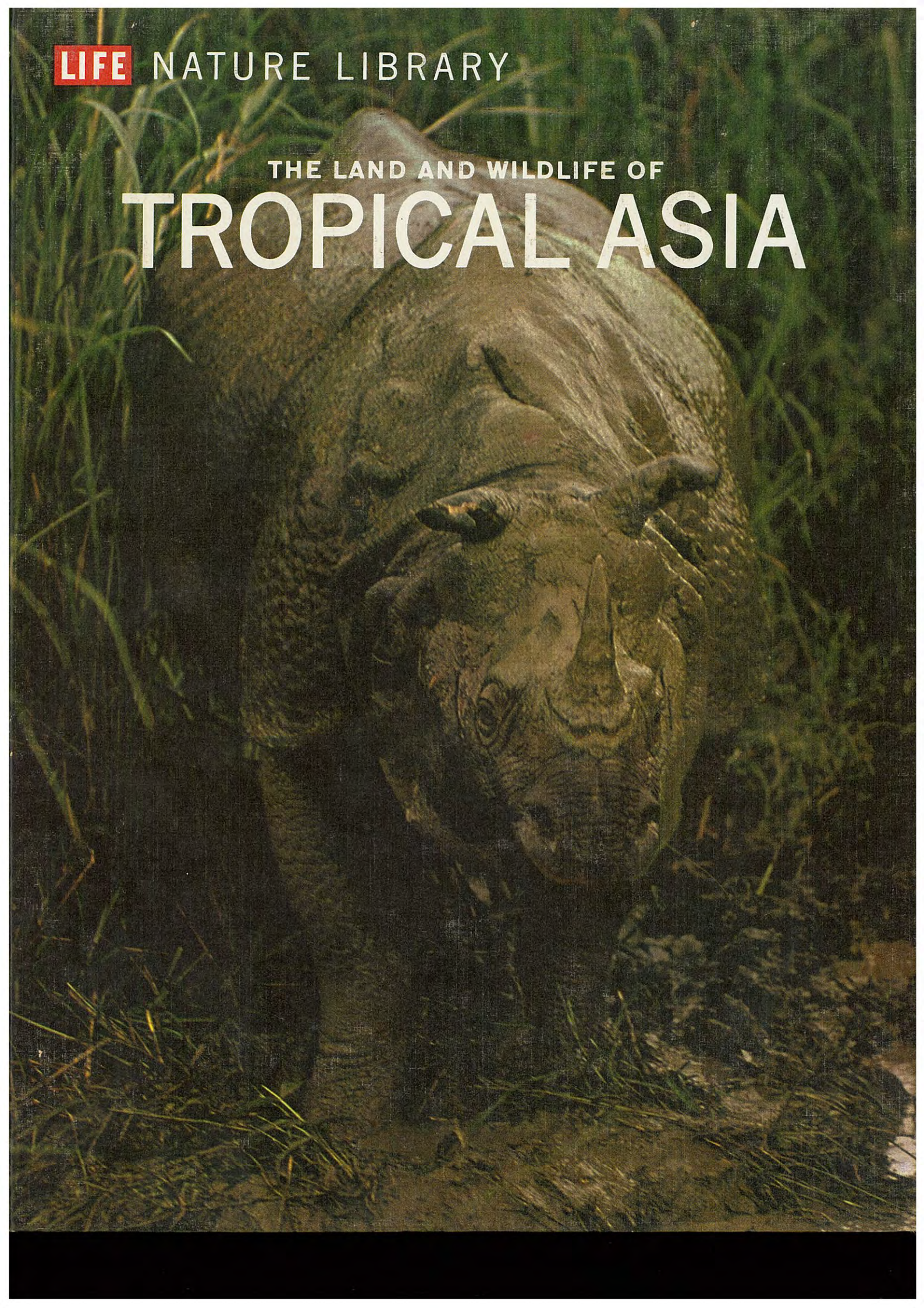


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THE LAND AND WILDLIFE OF
TROPICAL ASIA



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THE LAND AND WILD-LIFE OF

TROPICAL ASIA

by S. Dillon Ripley
and The Editors of TIME-LIFE BOOKS

TIME-LIFE INTERNATIONAL (Nederland) N.V.

CLAWING A BEATER during a hunt in Madhya Pradesh, a tiger wrestles the man to the ground and tears at him with teeth and claws. Tigers can usually be driven by a line of shouting beaters into a position where they can be shot, but sometimes they turn, as this one did. The beater was lucky; he survived—after months in a hospital.

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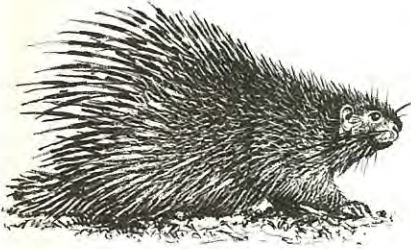
Pythons, Rhinos and Others

ALMOST everybody knows the lively and delightful tales of animals in India which Rudyard Kipling wrote in *The Jungle Book*. It was more than just an accident of colonialism that made this romantic chronicler of Britain's golden age of empire choose India for his locale; the subjects he found there were uniquely suited to his pen. In India, there has developed, through countless generations, a relationship between the wild and the human populations found nowhere else: a blend of mysticism, affection, respect and tolerance, as well as fear, which alone could give rise to such stories as those of Mowgli, the infant boy who was reared by wolves in the midst of jungle life.

And what has become of Mowgli's animal friends in the India of today? Most of them are still there, 60 years after Kipling peopled his pages with them. Akela the wolf, scientifically known as *Canis lupus*, still roams the forests, a somewhat smaller subspecies than his relatives of northern Eurasia and North America. Bagheera, the black panther, is still very much in evidence: this far from uncommon mutation of *Leo pardus* extends from India eastwards into Burma and southwards into the Malay Peninsula, where, if anything, black panthers are more common than the usual spotted leopard forms. The red dog, or dhole,

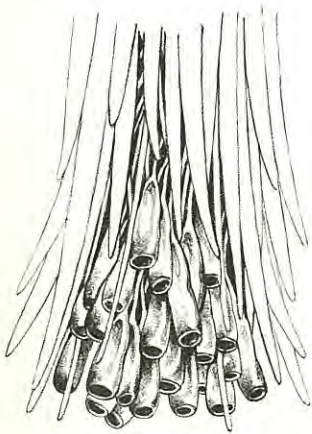
Cuon alpinus, is as fierce and untameable as ever, running in tireless packs that hunt down deer, wild pigs and goats, and even attack bears and tigers, which, if beset by a dhole pack, will surrender their prey as Kipling had them do. Another subspecies, even redder than the Indian form and with a flashing white underside, occurs from Burma to Singapore and on the big islands of Java, Sumatra and Borneo.

And Baloo, the bear who played so avuncular a role in Mowgli's young life? This was in all likelihood a sloth bear, known in India as *bhalu*, though Kipling described his Baloo as brown. Sloth bears have long, straight, black hair and favour rocky places in the jungles throughout India and Ceylon and eastwards into Assam. There are also the Asiatic black bears, sometimes known as moon bears, which range from Persia to Assam and north-east through China to Taiwan and Japan, and are distinguished by a broad, white V on their chests. There is the sun bear, black with a strange yellow crescent on its chest and found from Assam to perhaps as far as Szechwan in China, and south through Burma, parts of Indo-China and Malaya, and in Sumatra and Borneo.



A RATTLING PORCUPINE

Although quills are an excellent defence for all porcupines, there is still the chance that an inexperienced predator or other large animal will tangle with one of these prickly animals, and while getting badly stuck itself, will still damage the porcupine by trying to eat it or accidentally treading on it. The next step, therefore, is to advertise that one is prickly and dangerous, and that is what a porcupine of Borneo does. *Hystrix crassispinis*, shown here, has a cluster of hollow quills with open ends on its tail. When the tail is shaken, they rattle, making a warning noise, and other animals learn to avoid this sound just as they must the warning of an aroused rattlesnake.



THESE are all distinctive creatures, stamped somehow with the unmistakable imprint of the Oriental region—but of them all, perhaps the best known is the Indian python, *Python molurus*, the giant snake personified by Kipling as Mowgli's sleepy and affectionate friend Kaa. A close relative of the reticulated python, which has a wider range extending all through South-East Asia and all the larger islands as far as the Philippines, this great reptile has stirred men's imaginations since memory began.

The python Kaa ate seldom and slept a great deal, which is just what pythons do. As big as they are—the Indian python reaches 20 feet in length, the reticulated python 33—they can swallow at a single meal many times more than their daily requirement of food, and fasts of as much as a year between meals are not uncommon in captivity. Their prey consists of mammals of suitable size—an 18-foot Indian python was once collected which had the remains of a leopard in its stomach—and birds such as chickens and pheasants. They are singularly unaggressive creatures and make good pets. Along with the far more dangerous cobras, they are the common stock in trade of snake charmers and are often seen in zoos.

As members of the family of Boidae, pythons kill by constriction: having seized their prey in their jaws, they rapidly throw several coils around it and exert enough pressure to prevent chest expansion, thereby causing death from suffocation or heart stoppage. The prey is then simply swallowed in the most convenient manner, a process which may take an hour or more if it is a big animal like a pig or a small deer. Goats may be eaten, horns and all, and even pangolins and porcupines—though the latter on at least one occasion proved fatal to a python, which was found dead with its stomach punctured in many places by the sharp quills. If the prey is a horned animal, the horns are often regurgitated after digestion is accomplished.

Pythons are still common throughout South-East Asia—the even larger reticulated python of Burma, Indo-China and Malaya is occasionally found in cities as well as in the jungle—but another lordly creature has all but vanished today.

In the Gir Forest of the old princely state of Junagadh in western India live the last remnants of India's once-proud race of lions, today among the very arrest of all wild animals in the Oriental region. Lions once ranged over all of northern India except its easternmost extremes and were found as far south as

the river Nabrada and the Satpura hills. In the heyday of empire, they were favoured game of sportsmen—one hunter killed more than 300 of them, 50 right around Delhi—and by 1884 they were all but exterminated. Today the Gir Forest, a 500-square-mile patch of poor forest and thorn shrub country, is the last refuge for some 250 individuals.

It is a curious fact that relatively little is known even today about the Indian lion, in either an historical or a morphological sense. It is generally believed that this member of the Asiatic race of lions, once widely distributed throughout Asia Minor, Palestine and Arabia as well as India, predates the tiger, which probably entered India from the north-east after the last ice-age, but much still remains to be learned of its early distribution. And the simple fact that Indian lions were killed off so fast and in such numbers by big game hunters has precluded any large-scale collection of specimens for morphological studies. As Lee Merriam Talbot puts it in his invaluable book *A Look at Threatened Species*: "A considerable number of specimens must adorn the floors, walls and trunks of present and former officers of the Indian government, Indian royalty and big game hunters. These trophies . . . provide an untapped source of zoological materials." The present population in the Gir Forest is too small and precarious to permit any collecting on an adequate scale. Furthermore, the fact that the lions, running short of their natural prey of antelope, deer and wild pig, have taken to preying on domestic livestock has made them something of a political problem: herdsmen who graze their stock in the forest preserve are resentful of the order forbidding them to take protective measures against the lions.

Lions and tigers are closely related—so much so that in captivity they can sometimes be interbred—but only in Asia do these two big cats live, so to speak, side by side, or at least they did before the lion was hunted nearly to extinction in India. Shere Khan, as Kipling calls the tiger, is still numerous throughout much of the region. There are probably about 4,000 tigers living wild in India, and hunting pressure must still occasionally be brought to bear to keep their numbers down locally. They are also found east to Indo-China, in Java, Sumatra and Bali, but not in Ceylon or Borneo. Smaller than the big Siberian or Manchurian tigers, they none the less may measure nine feet or more from nose to tip of tail and weigh about 400 pounds.

As dangerous as tigers are in pursuit of their normal prey—antelope, deer, wild pigs, monkeys and, when pressed for food, domestic livestock—they are not by nature man-hunters. The naturalist E. P. Gee in his recent book *The Wild Life of India* described the tiger as "one of the safest and most gentlemanly creatures of the jungle". In support of this he cites a personal experience: "I remember once walking for a mile or more through some tall grass. What was presumably a cow was walking away just in front of me—I could hear it and could see the grass moving as the animal walked ahead. Eventually I came to an open place, and there was the 'cow'—a huge tiger."

Gee's statement is carefully qualified, and with reason: he excepts tigers that are molested by man. Danger immediately arises if a tigress is disturbed with her cubs. And if an old or wounded tiger is no longer able to pursue its normal prey he may turn to eating man.

Since this chapter is concerned with some of the rare and unusual animals with which the Oriental region is stocked like some extraordinary zoo, it seems fitting now to consider the pheasants of South-East Asia, which include some of the region's most flamboyant birds. Père David, the noted French scientist-

priest who recorded so much of the wild-life of China a century ago, mentions finding two of the less common but most beautiful species: the Impeyan pheasant, a shimmering, iridescent, violet-green and gold bird of the hill meadows around 15,000 feet, and the blue-eared pheasant, a species of *Crossoptilon*, which he also found in the mountains of Sikang and Szechwan. They were unusual and valuable finds, for most pheasants occur at lower altitudes and on islands, from Ceylon east to the Greater Sundas, Palawan in the Philippines, Hainan and Taiwan. The Oriental region is their heartland, but they show an ancient tropical link with the isolated evergreen forest of west Africa, a link corroborated by the fact that pheasants occur as Coenozoic fossils in Europe. The two present end habitats were perhaps connected in Miocene times.

My favourite among pheasants is surely the oddest of its kind, *Lophura bulweri*, or Bulwer's pheasant, found in Borneo in lowland jungle. The male's body feathers have iridescent reddish and blue-black reflections and the large tail is pure white and curved into a broad fan shape. The legs are bright red and the eye is ruby red. In display the male's two pairs of three-inch wattles above and below the eye become engorged with blood and turn a flaring cobalt blue completely surrounding the ruby-red eye, which itself becomes brighter, suffused with blood. The effect is electrifying—a ruby bull's-eye in a cobalt dish.

The puzzle, though, is that despite the gorgeous development of the cock Bulwer's pheasant, presumably to impress the female, this bird has proved to be one of the least successful of its kind in maintaining and expanding its territory in the forest, and is only known from small areas within the island of Borneo. By comparison, the equally elaborate but very different male of the argus pheasant is found not only on the islands but on the continental mainland as well—and is very common over most of its range. So much so that one of the most familiar sounds to the traveller on a river or through the wilderness of the rain forest in these parts is the distinctive, loud, double whistle of this magnificent peacock-sized bird.

The cock argus pheasant goes further still in making itself distinctive, putting on an active dancing display on bare patches of earth in the jungle. The greatest student of pheasants, the late William Beebe, concluded that each ground was occupied by a single male, but the Dyaks of Borneo deny this, saying that several males display competitively in one clearing.

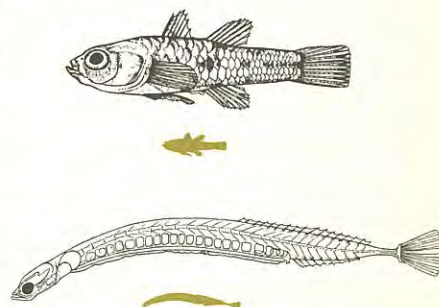
LIKE the pheasants, the monkeys of the Oriental region, too, are part of a chain. The leaf-eating monkeys, the langurs of the Orient and the colobus monkeys, or guerezas, of Africa, belong to a common group found today widely isolated on two continents but linked by Pliocene fossils in Europe. In Africa the colobus monkeys occur in heavy tropical forest or isolated patches of forest. On the other hand, the langurs are found in every sort of habitat from Himalayan snows and the dry, semi-desert scrub in western India and northern Ceylon to the cold mountains of China and along the jungle streams of Borneo. Leaf-eating monkeys are noted for their splendid appearance, the common langurs being the typical handsome monkey of India and Ceylon. They are bearded, with fine smooth fur. Their tails are long, longer than the body, and carried gracefully arched and curled high as they run across the ground or leap, sometimes 25 feet out and as much as 40 feet down, through the trees. They are great talkers, the langurs, and often warn the hunter of the presence of tiger or leopard by guttural shouts and cries. Their one implacable enemy is the leopard—but leopards do not go hungry in Indian forests. As the bear Baloo

told Mowgli, the "Bandar-log", or Monkey-People, can never remember anything for long—and sooner or later a langur will forget or make a mistake and the leopard will have another meal.

Another most unusual animal, the dugong, is found in the warm seas of the Oriental region as well as along the east coast of Africa and the northern shores of Australia. My first introduction to it was in the museum at Aden at the foot of the Red Sea, where I spent sixpence to see the "mermaids". Sure enough, ensconced in three enormous boxes like coffins lay the bodies of three stuffed dugongs, or sea cows. The stuffing had made them even more grotesque than they are in life and the taxidermist had been at pains to increase their resemblance to mermaids or mermen by emphasizing the generative organ of the male and the breasts of the females. It is said that the mother dugong clasps her baby to her breast with her "arms", or front flippers, but this seems implausible. Anyone who has ever seen a live dugong mother with a baby has noted that the baby clings to the mother's back as she browses through the shoals of sea grass and other marine plants on which the creatures feed, and furthermore the breast is directly under the flipper, as if in the armpit, and the young probably reach round and suckle from the back.

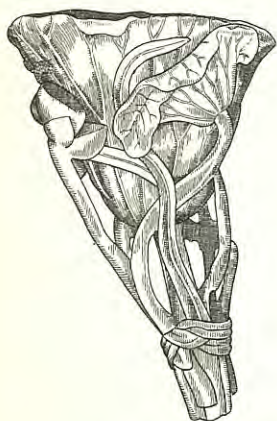
Poor dugongs. Modified over aeons of time for a harmless grazing life in shallow, warm seas, equipped with tails but no hind limbs, heavy and cumbersome and full of blubbery fat, useful to the local human inhabitants wherever they live, the species seems doomed to certain extinction. The inoffensive creatures have been speared or caught in nets, cut up, and the meat and hide sold and the blubber boiled down for oil. A 600-pound dugong will yield from 6 to 14 gallons of oil. The range of ailments treated with dugong oil is startling: it is said to be efficacious for dysentery as well as constipation, good for headaches or earaches and useful in treating all manner of skin diseases. No wonder that dugongs are hunted. Even the tears of the dugong, which it sheds copiously when it is brought out of the salt water, have a commercial value. Although they are nothing but a mucous secretion which probably helps to protect the eyes by converting the excess salt sea water into wastes, as it is in sea-birds, they are considered potent as a love charm by Malayan fishermen, another inducement to capture the animals. One can only hope that protection will soon be afforded these clumsy, harmless distant relatives of elephants and hyraxes before they vanish from the scene.

The armoured pangolin belongs to a special family, found in the Oriental region and in tropical Africa, with Pleistocene fossil relatives in southern India, and a giant species in Java and Borneo, which, on the latter island, existed until a mere 50,000 years ago. A typical Asiatic pangolin is a humped-looking creature from two to three and a half feet long, weighing up to 17 pounds, with a small, narrow, pointed head ending in almost immovable jaws, and a tiny mouth from which a sticky 10-inch tongue may protrude if there are any ants or termites about. The beast is completely covered above with large horny scales but nearly naked below, the skin covered with scanty hair. The scale-covered tail is nearly half as long as the body and head and slightly prehensile. In the female the tail forms an efficient seat on which one or two babies can ride. Pangolins walk on their front knuckles, the powerful claws turned inwards. With these claws they can burrow into the hardest of termite nests or excavate their own dens in which parents and young live as much as 12 feet below ground, often between large boulders to discourage interference by human or other



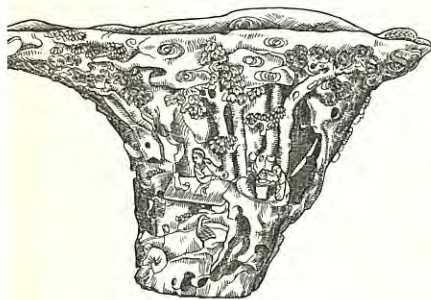
THE WORLD'S SMALLEST

No matter whether they are measured by size or weight, the smallest fishes in the world live in tropical Asian waters. The shortest fish, and in fact the shortest known vertebrate, is *Pandaka pygmaea* (above), a one-third-inch bantam from the Philippines. Somewhat longer but even lighter is *Schindleria praematurus*. A thousand of these midgets weigh less than a sixpence. They are completely transparent except for the black pigment of their eyes and their swimming bladders, and are extremely difficult to see, although they sometimes swarm in shallow New Guinea waters in countless numbers. Actual sizes of these fishes are indicated by the small silhouettes shown in colour.



LEGENDARY CUPS OF HORN

Rhinoceros horn cups, delicately hand-carved as shown here, are the source of many romantic Oriental legends. One is that they would shatter if they contained poison. Because rhinoceros horn, unlike that of most other mammals, is actually made of compacted hair, the cup may have warmed, but in a way less dramatic than the legend. Since many ancient poisons were strong alkaloids, they no doubt separated the hair strands of the horn, causing noticeable disintegration inside the cup and thus alerting the owner.



predators. For of course the horny scales, like other horny constructions, are considered to have a medicinal value among some peoples in the Orient, particularly the Chinese, and pangolins have been much preyed on by humans. Pangolins feed on termites and ants especially. They are fond of almost any species; if a pangolin is at work in a nest of the biting red ant, sometimes well up in a tree, it will pause every so often to remove them from its face or abdomen by scratching vigorously. The pangolin has a throat gland, the use of which may be connected with the powerful salivary glands, which keep the tongue mucous and sticky. Pangolins kept in captivity drink water and milk, using the long tongue dexterously for lapping up the liquid and often darting it in and out so rapidly as to beat up a froth.

The naturalist W.W.A. Phillips tells a story of the immense strength of a pangolin in Ceylon. The creatures roll themselves into a very effective horny ball when frightened or anxious to protect themselves. Not realizing this, a villager clubbed a pangolin one day in the jungle and started back for his home, the animal slung over his neck, the tail hanging down on one side, the head on the other. But the beast was merely stunned. When found later, the man was dead on the trail, strangled. The pangolin had apparently suddenly come to life and had automatically coiled itself round his neck in its defensive posture. The creature was still curled tightly round the villager's neck, proving that he was the victim of a scaly mugging.

MY own favourites among the rare animals of the Orient are the three species of rhinoceros. The family to which they belong is old as large mammals go and probably arose in Eurasia about 52 million years ago, from whence it spread to North America and Africa. The smallest living Asiatic species is the Sumatran, perhaps four and a half feet high at the shoulder, eight to nine feet long, weighing up to 2,000 pounds and distinguished by a rather hairy coat. The two other Asian rhinos are both much larger and more like each other in appearance. There is the great Indian rhinoceros, a huge armoured beast, more than six feet at the shoulder, 14 feet long and probably weighing as much as two tons. The second, slightly smaller animal is the Javan rhinoceros, six inches or so lower at the shoulder and much lighter in weight, probably about one ton. All three rhinoceroses are now very limited in range. Formerly found from Bengal east through Burma to Vietnam and south into Sumatra and Java, the Javan rhinoceros is found today only in the Ujung Kulon Reserve on an uninhabited peninsula on the western tip of Java. According to the latest information available, there may now be only about 25 individuals left in this area, which would mean this once abundant animal is in imminent peril of extinction.

The essential rhino problem is that the horn and other parts of the body are highly touted and valued in Oriental medicine. Powdered rhinoceros horn is a specific in the Asian medical lore for everything from impotence to removing thorns, easing labour pains, shrinking lumps, as an antiseptic, for closing cuts or even for mending broken bones. Every part of the rhino has its price—horns are worth up to £70 or more an ounce—and there is even said to be an obscure Indian religious rite, a sort of purge, performed by squatting inside the body cavity of a freshly killed rhino after it has been eviscerated. Certain prayers are recited and the severed rhino horn is used as a cup to hold the rhino blood offered to the gods. Even rhino urine is valuable. As recently as the 1950's a zoo in Asia made a welcome income of over £700 a year selling rhino urine from its captive pair of great Indians.

The Indian rhino now lives only in one area of Nepal, along the foot-hills of the Himalayas in forest and grass-land near rivers, and in eastern India in Bengal and Assam, mostly in open, swampy reserves or sanctuaries. There are perhaps 600 left, as well as 30 in zoos, including a few pairs that have successfully produced offspring.

The small Sumatran rhino occurs from the lowlands to over 6,000 feet, in dense jungle in a thin, attenuated range that may harbour perhaps 170 individuals. Some are scattered in mountainous parts of Burma, a very few in Malaya, probably none in Thailand or Vietnam, possibly 20 in Sumatra and an equal number in the mountainous areas of Borneo between the Indonesian territory and the Sarawak/North-Borneo side. They are virtually never seen, certainly not by any outsider. One of the Americans who has been attempting to survey Malaya and Sumatra for the remaining Sumatran rhinos caught two glimpses of two individual Sumatran rhinoceroses in five months work in 1961. Both sightings were in dense jungle, one for a few seconds, one for several minutes as the sound of a stream drowned out the noise he made walking up to the animal. Blessed with keen hearing and sense of smell, the rhinoceros in the jungle is very wary. One of its few give-aways is the presence of wallows. All three Asian species like to wallow at least once a day in a muddy hole, sometimes on the side of a steep hill, perhaps where a tree has been uprooted. The muddy liquid must be soothing and perhaps helps get rid of parasites such as leeches and unwelcome insects. But wallows are an indication of the presence of the animals and so a danger for them.

My study of these creatures has centred around the Indian rhinoceros in Assam. At the request of the Assam state forestry officials, an Indian colleague, Dr. Sálím Ali, and I spent many fascinating days in 1949 plodding about the swamps along the river Brahmaputra, looking for rhinos. As a result some estimate of the numbers of the species could be made and some observations on their habits as well. The Indian Government authorities are anxious to make the 166-square-mile Kaziranga Sanctuary, where nearly 300 rhinoceroses are thought to live, into a tourist attraction. Eventually it is hoped visitors from all over India, as well as foreigners, will be able to catch a glimpse of a wild rhinoceros, one of the last great archaic-looking species of mammal, a link with vanished epochs and vanished faunas.

ONE of the results of our observations pointed towards a difficulty in all this. A rhinoceros lives to be about 50 years old. It is presumed adult at 12 to 15 years, and the gestation period in the female is approximately 19 months. Thus a female of adult age can breed, assuming she feeds her calf for at least 6 to 10 months, only every 3 years or so. Rhinos in captivity have proved very difficult to breed, as both male and female appear to come into breeding condition separately at varying seasons and their seasons do not necessarily coincide. In addition, the great Indian rhinoceros is normally very unsociable. Individuals, males or females, at Kaziranga seek out a particular territory. One animal will occupy perhaps 20 to 50 acres, marked by one or more wallows and irregular trails extending to a water hole or some open grazing land. More important, the territory appears to be marked out by heaps of dung, one near the centre of the territory, others along the trails and near the wallows. These heaps are often three feet high and several feet across and are maintained by the animal backing up to the pile so as not to tread it down.

But the rhinoceros does not always stay on its territory. In March, one of the



TWO WAYS TO HIDE

A Malayan tapir at different stages in its life has two distinct types of protective coloration. The baby is dark brown with tawny spots and streaks, and blends into the sun- or moon-dappled forest floor. The adult animal has a coat of contrasting areas of black and white. In the jungle night the white midsection of the nocturnal tapir does not suggest the form of an entire animal, since the black of the head, shoulders and legs remains obscure. With the lines of the tapir disrupted, night-prowling tigers and other predators often fail to recognize it as prey.

several times that we were in Kaziranga, there were notably few rhinos to be found. As near as I can conclude, March is a likely time of year for breeding activity of this seasonally variable animal. The absence of several individuals and the coincident report of wandering, sometimes several hundred miles away, even of individuals swimming across the Brahmaputra, inclines me to the supposition that the rhinoceros, territorial most of the year, has a wandering period during the time of sexual activity when it seeks out a mate. We noticed that the rhino appears to have a different call associated with mating, a high penetrating whistle. All this may explain the occasional appearance of rhinos far away from their known haunts. It may also explain how the small Sumatran rhino manages to persist. This is also an unsociable species and would appear to be a tremendous wanderer. Even if there are only a dozen Sumatran rhinoceroses in a thousand miles of tumbled hills and ridges of northern Burma, it may be possible for these creatures to work north and south along their game trails and occasionally encounter each other. This may account for the known disappearance and reappearance of these incredibly rugged will-o'-the-wisp creatures from thousands of square miles of forest land over a period of years. If this wandering is a necessary component of the survival of the species, it makes the whole problem of protection vastly more complicated, even though it also makes poaching difficult.

PERHAPS even more of a mystery than the rhino is the Malayan tapir, the rhino's cousin. Now found as a single species in southern Burma, Thailand, Malaya and Sumatra, it has been extinct in Borneo since historic times. The tapir of Asia is a lumbering black and white creature which has been around since the Coenozoic but has relatives today only in Central and South America. Harmless, incredibly keen of sight, smell and hearing, the tapir persists in dense evergreen jungle by its senses alone. It is easily killed by leopards, tigers or wild dogs, but its natural enemies fortunately do not include man. For some reason the tapir is largely taboo. In southern Burma it is not hunted because it is thought by some to have a semi-religious mystical quality. In Malaya some people feel that to eat the flesh brings on leprosy. Fortunately sportsmen do not shoot it because it makes a poor trophy: with no tusks or other prominent appendages, a mounted head merely looks silly. As someone once said in the *Rangoon Gazette*: "It [the tapir] is a perpetual refutation of the general application of theories on the struggle for existence. It is a shy and mild and gentle creature. It is easily tamed in captivity. It is nothing much to look at and its white overcoat is an amusing vagary of jungle fashion. The female is bigger than the male. A small shrill squeal is the only sound recorded in connection with the animal. . . . It is not poached, the jungle people regarding it as is the fate of many philosophers living out of their time with 'almost amused contempt'. . . . The tapir is in fact an enigma. It may be a survivor of some more gentle and legendary time, or it may be wandering in unique isolation in a world not yet mature enough for its wisdom."

An interesting group of animals in the Oriental region is that of the pigs. The wild boar of Europe, *Sus scrofa*, ancestor of domestic pigs, has its relatives right through southern Asia in the wild pigs of China and Japan south to Formosa. *Sus scrofa cristatus*, the powerful crested pig of India and South-East Asia, is closely related to the wild boar but has a more prominent mane, while the whitish streak on the cheek is less pronounced. In ancient times these pigs were evidently domesticated and it was probably some form of the wild boar and/or

crested pig which was brought by early man into the islands east of Java and Borneo. A number of subspecies of wild pig have been described from Celebes and the Lesser Sunda Islands east to Timor, the Moluccas and New Guinea, but present-day authorities believe that some are feral relicts of man's importations. Not so the bearded pig, a huge creature found in Borneo and Malaya and little known even today. The bearded pig has whitish, curly whiskers and a huge, wart-like, bristle-covered growth on the snout. The oddest member of the pig-family is of course the babirusa, mentioned in an earlier chapter, from Celebes and the islands to the east.

Smallest of all the pigs is the pygmy hog, *Sus salvanius*, described by the pioneer naturalist Bryan Hodgson in 1847. This little pig may or may not be extinct. There is no reliable record of anyone seeing it in recent years, but it is quite possible that the pygmy hog hangs on in small numbers in the Terai district of Nepal and perhaps farther to the north-west.

Cattle and sheep are primarily Old World, and large cattle are an important component of the Oriental region. The water buffalo was probably first domesticated about 5,000 years ago in India, from where it spread to Iran and then to the Balkan Peninsula, Italy and the southern shores of the Mediterranean in the Middle Ages. Today these huge and useful animals occur from eastern Europe and Egypt to China and south into the Sunda Islands as far south and east as northern Australia, where feral animals, descendants of domestic stock, occur. Wild water buffalo still occur in India and Ceylon, but are probably extinct in most of their former eastern range or exist only as feral remnant herds. In either case, they are not nearly as savage as the African species, to which they are closely related.

The gaur, called seladang in Malaya, is a superb species of wild ox still found in south India, Nepal, Assam, Burma, Malaya and parts of Vietnam. A herd of gaur is one of the sights of south India. This tremendous animal may stand more than six feet at the shoulder and may weigh over 2,000 pounds. A close relative is the smaller banteng of Burma, Malaya and the Greater Sunda Islands. These two wild oxen are unique in the Oriental region, with no really close relatives elsewhere in the world. Perhaps the only relative anywhere is the other wild ox of South-East Asia, the kouprey, or forest ox, of Cambodia. Known only from small scattered herds totalling perhaps 1,000 altogether, this big grey ox, with curiously frayed horns and a prominent dewlap hanging below the neck like domestic Brahma or Zebu cattle, may be an ancestor of the domesticated breeds of India or it may be an isolated feral relict of the vanished Khmer civilization of Angkor.

THE kouprey is now confined to the forest glades of Cambodia in two separate regions, some 150 miles apart, on opposite sides of the river Mekong. Perhaps the most remarkable thing about this animal is that it only became known to the outside world in 1937, when it was first discovered for science. This illustrates how much may remain to be discovered, even in the comparatively open and easy country in that part of Indo-China.

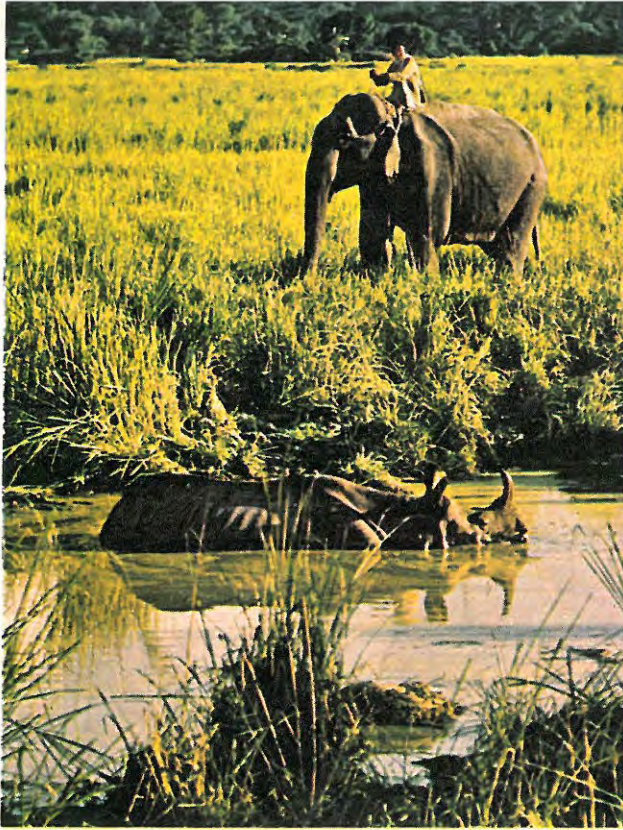
Cattle do strange and provocative things genetically. The gayal, a small version of the gaur, appears to be purely a domesticated form of that huge wild ox, with shorter, straighter horns. Chin tribesmen of the Burma-East Pakistan border hills claim that gayals are the result of inbreeding of an original cross between a wild gaur and a domestic cow, and that after the fourth generation they breed true. The Mishmi, Dafhla and Naga hill tribes in the Tirap frontier

areas where I have travelled keep gayals as a half-savage, half-domesticated species. The *mithan*, as the animals are called there, are used as symbols of family prestige and sacrificed at special family or clan feasts by wealthy tribesmen as part of the ascent of the prestige or social ladder. Do they—or did they ever—interbreed with gaurs? Even professional mammalogists are not sure—much research remains to be undertaken by future generations of geneticists before we can be sure of the relationships and historical evolution of the wild cattle and their relatives.

The goat antelopes are a group closely allied to cattle. One species, the serow, which looks rather like a small, blackish Rocky Mountain goat, is found in the Himalayas and thence east to Malaya, south-west China and Sumatra. These goat antelopes are found on wooded cliff faces in the roughest, steepest country and stand about three feet at the shoulder with a prominent mane. They may weigh nearly 200 pounds. One of the few serows I ever saw was in the high plateau area of Mount Loser in north Sumatra. One of our Dyak assistants and I had a glimpse of a serow around a boulder on the south cliff face at about 9,000 feet above sea level. We were standing quite still looking out over the jungle below when a serow started coming round the boulder to our right. It made merely the slightest scratching noise on the rock ledge and dislodged a pebble or two. The creature stopped, gave us a long look with its intelligent liquid eyes and then backed away round the boulder again, the only sensible thing it could do at the time.

THERE are two smaller relatives of the serow, one from Japan and Formosa not much more than half the size of the Sumatran species, and the equally small goral, a goat antelope of the Himalayas. The oddest of the serow's relatives is much larger. This is the takin, a rather ox-like creature found in the Mishmi Hills of north-east Assam, far northern Burma and up into west China in Sikang, Szechwan and Shensi. Its heavy, shaggy fur gives the takin the look of a small cow or yak. The horns measure up to 24 inches in length and are almost lyre-shaped, rising up, then sweeping outwards and back and up again. Takin live in heavy forest on the steepest hill-sides and scabble about on tiny splayed hoofs almost as efficiently as their serow cousins, in spite of their far heavier fur and clumsy appearance. I never managed to see one in the Mishmi Hills although several times we saw trails and spoor and were close enough behind to smell the beast's characteristic, very strong, musky odour.

The takin lives in those wonderful clean hills high up, in a world of rhododendron, magnolia and bamboo, where gentians, lilies and blue or yellow poppies star the exposed grassy meadows. Blood pheasants, green and red, or tragopans, grey, spotted-crimson and blue, take wing in front of you, the sun striking sparks from their brilliant raiment. All round above the cliffs, dotted with clumps of larch, sometimes of dwarf maples, dwarf rhododendrons, yew and tiny, twisted oaks, rise higher hills and yet higher, patched with dazzling fields of snow merging into towering castles of cloud. Far below, in the steep valleys, lie solid banks of deodar, cedar and pine, below them the varied tones of the heavier jungle and below that again a glimpse of the serpentine sheen of a river, patches of cultivation, a scarred slope of old slash-and-burn, and here and there the smoke of a tribal fire. This is the most romantic country in the world for a naturalist, the mountainous, ribbed heartland of southern Asia where the variety of animals ranging from valley to ridge to valley challenges the imagination. Here evolution seems to be at work before one's eyes.



WALLOWING in a swampy pond, a great Indian rhino is observed from elephant-back in Kaziranga Sanctuary, Assam. From a dozen, in 1908, the number has grown to nearly 300.

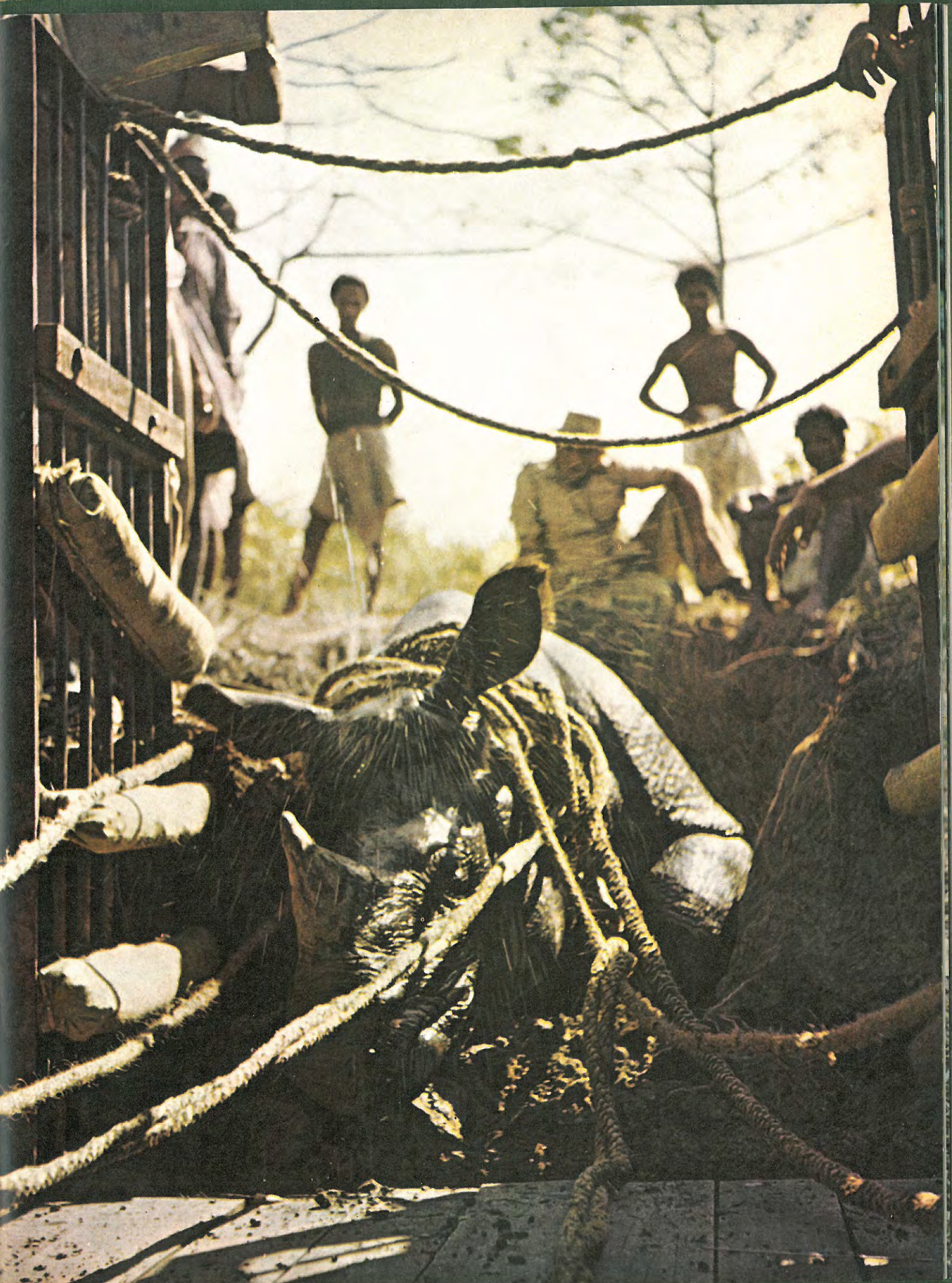
Rescuing the Rhino

Somewhat less obstreperous than its African relatives, the great Indian rhinoceros may learn to tolerate people in the wild and even becomes docile in captivity. Some of the ancient kings trained rhinos for warfare, placing them in the front lines, with iron tridents on their horns. The horn is apparently not used as a weapon; when a rhino charges, it tries to gash an opponent with its tusks—long lower incisors. The decline of this once numerous species began about 350 years ago during the Mogul dynasty, due to cultivation of the lowlands and the rising human population. At the turn of the 20th century the survivors, in the north-eastern hill country, were hard pressed by hunting for sport and for profit. Now protected in eight sanctuaries in Bengal, Assam and Nepal, the rhinos number about 600. Some 16 individuals have been trapped and shipped to zoos during the past decade, and more may soon be transferred to a new preserve in Nepal.



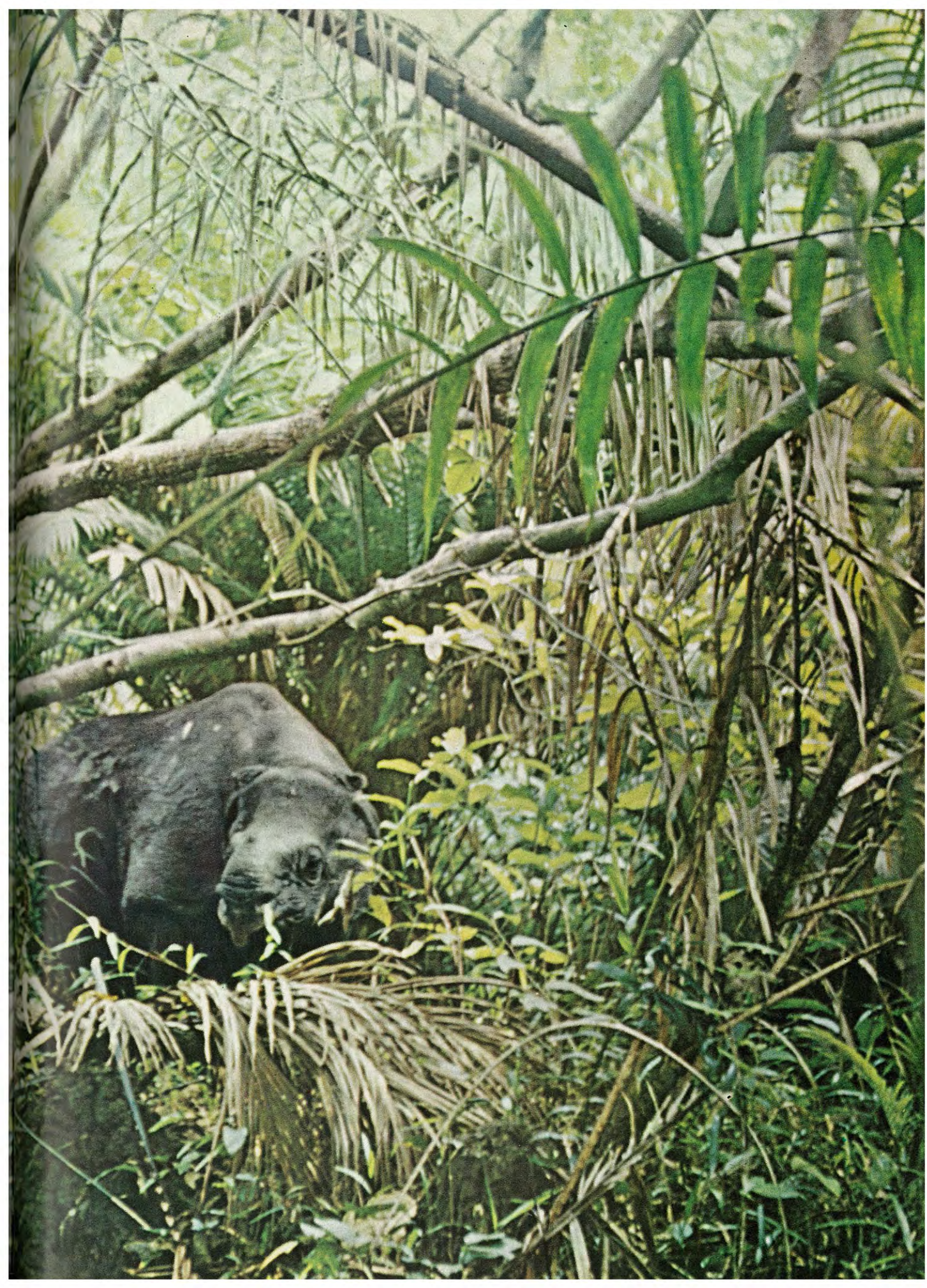
A RHINO IS TRAPPED in a pit dug along one of its accustomed paths and camouflaged. As shown above, it must be subdued with lassoes, which then guide the animal as it climbs out.

ALMOST CAGED, the exhausted rhino collapses on the ramp and is cooled with a can of water. An elephant will haul the cage and its occupant, weighing about two tons, to a stockade.



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A JAVAN RHINO, one of the rarest sights in the world, dines on twigs and leaves of saplings which it has pushed down in the tropical forest. The female's horn, as shown here, is vestigial, but the male's averages 10 inches. This rhino is the scarcest of the three Asian species, its total population now reduced to about 25 individuals in the Udjung Kulon Reserve. Since very few calves have been seen in recent years, naturalists fear the adults are too few and scattered for successful breeding.

