

VANISHING ANIMALS

Preserving Nature's Rarities

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by

Philip Street

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The Problem of Asia's Rhinos

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Of the five surviving species of rhinoceros, three belong to southern and south-western Asia, and two to Africa. These latter, the so-called white and black rhinoceroses, are still fairly numerous, though fears have been expressed that unless more positive steps are taken to ensure its survival, the white rhinoceros may be faced with the threat of extinction in the future. The Asiatic species, however, all occupy places high up on the list of animals which are rare and in need of special protection if they are to survive for much longer.

The story of the efforts which have been made in the past half century to save the Great Indian One-horned rhinoceros (*Rhinoceros unicornis*) from the very verge of extinction is one of the classic examples of how an animal can be saved through the creation of a nature or game reserve, given adequate legal protective measures.

Several centuries ago the Indian rhino is known to have been common and widespread throughout northern and north-western India and neighbouring countries, but by the early years of this century it had disappeared from most of its former territories. Only in Bengal, Assam and Nepal did it still survive, and there only in very small numbers. In 1904 it was estimated that about a dozen individuals remained in the Kaziranga district of Assam, and the survivals in Bengal were probably fewer than this.

The Problem of Asia's Rhinos

The reasons for this decline in the rhino populations over the centuries were several. Rhinos were commercially valuable creatures. Almost every part of the animal could be sold, including the meat, which Brahmans were permitted to eat. All kinds of articles were made from the hide, and even the urine of the animal was credited with antiseptic properties. The really valuable part of the animal, however, was the horn. Throughout the East, and particularly in China, it was in great demand on account of its alleged properties as an aphrodisiac. Even in recent times as much as £100 could be obtained for a single horn. The nineteenth-century vogue for 'sport', which often meant shooting as many animals as possible in the shortest possible time, was another formidable hazard which the dwindling rhino populations had to face.

By its habits the rhino played into the hands of its enemies. It is a rather slow and clumsy animal, devoid of any cunning even in the face of danger, and extremely conservative in its movements about its territory, always tending to use the same mud wallow and the same place to perform its toilet. Thus the man with a gun only had to wait near a mud wallow or a heap of dung to be fairly sure of claiming a victim.

The commercial rhino catchers often captured the animals in pits, which were dug along the regular rhino tracks and carefully camouflaged. Bamboo spikes fixed to the bottom of the pit impaled the rhino as it crashed through the unstable top. When the hunter returned it was an easy matter to despatch the unfortunate animal and remove any parts for which he had a market. Sometimes if he was in a hurry, he merely hacked off the horn and left the rhino to die.

These direct attacks by the sportsman and the commercial hunter were not the sole cause of the rhinos' decline, however. Man's activities had an indirect effect on their distribution, and on their numbers. Their habitat is open savannah covered with tall elephant grasses. With the development of agriculture dur-

The Problem of Asia's Rhinos

ing the past few centuries vast areas formerly covered with this type of vegetation were cleared and given over to cultivation. At first this revolution in agriculture was confined mainly to the fertile lowland plains, so the rhinos retreated to the hill country, where for some time they were safe from this form of human competition. Later, however, man began to open up the hill areas too, converting the wild country into tea plantations and paddy fields. Even in uncultivated districts the grasslands became gradually replaced by woodlands which were of no use to the rhinos. Before the arrival of the farmers the hill tribesmen used to set fire to the grass in order to encourage young growth, and this had the effect of preventing young trees from becoming established. When these tribesmen were driven away, however, the firing ceased, and enabled the trees to grow up and replace the grass.

It was the sudden realization, at the beginning of this century, that the Great Indian One-horned rhinoceros was all but extinct, which stimulated the authorities to take desperate measures in an attempt to save the species. The animal was accorded absolute protection, and a number of areas where it was still known to survive were designated forest reserves. These were later to become game sanctuaries. The most important of these was the Kaziranga Reserve, which became the Kaziranga Game Sanctuary in 1926. It is twenty-five miles long, with a maximum width of eight miles, and occupies an area of 166 square miles, bounded on the north by the Brahmaputra River. For the past three or four decades this has been the home of half of the total world population of the Indian rhino. Had the attempt to preserve the rhino not been successful here it is extremely doubtful if it could have survived anywhere else.

At its foundation in 1908 the Kaziranga Sanctuary is believed to have contained not more than a dozen specimens, but so successful were the protective measures that their numbers increased steadily, until by 1930 the population was estimated

The Problem of Asia's Rhinos

to be not less than 150. Then followed an intense wave of poaching, for rhino horn had become even more valuable on account of its scarcity. Measures taken by the Indian Government in 1935, however, succeeded in reducing poaching to an insignificant level, and the rhino population soon increased beyond the 1930 figure. By the early 1940's the numbers may have been as high as 400, but then the rhinos suffered a further setback. The principal cause of this second reduction in the population was mainly due to disease, believed to have been contracted from the domestic cattle and buffaloes belonging to the native populations surrounding the sanctuary. In 1944 the bodies of twenty-two rhinos which had died from some unidentified disease were found in Kaziranga, and in 1947 the bodies of fourteen victims of anthrax were found. The difficult nature of the country makes it unlikely that all the rhinos which died were discovered on either occasion.

Since then various measures have been undertaken to reduce the risk of rhinos being killed by disease contracted from domestic cattle. In December 1951 a team of thirty-one staff and students from the Veterinary College of Gauhati toured the area surrounding the Kaziranga Sanctuary and innoculated about 50,000 domestic cattle against rinderpest, to which the rhinos are susceptible. Poaching has been made more difficult by the creation of a buffer zone surrounding the boundaries of the sanctuary, in which all shooting is prohibited. For some time now poaching has virtually ceased, only one or two rhinos per year at the most falling victim to the poachers' guns.

The latest reliable estimates of the rhino population in India gives the total at something approaching 400, of which 260 are in the Kaziranga Sanctuary. The majority of the remainder are in other sanctuaries in Assam and Bengal.

Outside India the only other areas where the Great Indian rhinoceros still survive are in Nepal. In contrast to the accessibility of the Kaziranga and other Indian sanctuaries containing

The Problem of Asia's Rhinos

populations of rhinos, those of Nepal are in isolated and almost inaccessible country. As a result it is extremely difficult to arrive at any reliable estimates of the populations in these areas, or for the authorities to exercise much effective control over poachers. Estimates in fact have varied from fifty, given a few years ago by Mr. E. P. Gee, one of the leading authorities on the Indian rhino, who has played a leading part in its preservation in Kaziranga, and 1,000 given in 1953 by the Forest Department of Nepal.

The replacement of the former aristocratic government by a more popular democratic one has had the effect of stimulating poaching activities, because its protective measures have not been so strictly enforced as those of its predecessor. In 1954, for example, the Nepalese Department of Defence, which is now responsible for their protection, reported that seventy-two rhinos had been killed by poachers during that year, and the figure may well have been higher. If this rate of reduction were to continue for many years the rhino would soon become extinct in Nepal, even if the initial population was 1,000.

During 1958 a disturbing report was received by the International Union for the Conservation of Nature that a band of Indian poachers had entered the Rapti Valley, principal stronghold of the rhino in Nepal, and had killed every rhino they could find. The number of rhinos killed was said to be in the region of 500. Arrangements were made between the Union and the Government of Nepal for Mr. Gee to visit Nepal in order to report on the rhino situation and to make recommendations for the preservation of the Nepalese populations. His report, published in August 1959, gives an estimate of 300 for the total rhino populations of Nepal, and also makes various recommendations for establishing additional protected areas and extending others. The International Union has recommended the report to the Government of Nepal.

The Great Indian One-horned rhinoceros is the largest of

The Problem of Asia's Rhinos

the three Asiatic species. Full-grown specimens may attain a length of at least fourteen feet, a shoulder height of six feet, and a weight of two tons. The horn, which is quite different from the horns found in any other mammals, consisting of a compact mass of horny fibres representing modified hairs growing out from the skin of the snout, is short and thick at the base, and usually quite blunt. It seldom exceeds a foot in length. The hide of the Indian rhino has a much neater appearance than that of the two African species, being divided into sections by folds, and looking rather like armour plating, complete with round marks which look like riveting.

Essentially a grazing animal, the rhino prefers the young grass shoots which grow up after the tall elephant grasses have been burnt, and in the Kaziranga Sanctuary about a quarter of the grass is burnt each year to encourage new growth. Besides providing plenty of food for the rhinos this burning also produces clearings in which visitors to the sanctuary can see the animals. The sanctuary has been open to the public since 1937.

Contrary to popular opinion, the Indian rhino is not generally a ferocious, bad-tempered creature. The majority can be followed up and approached quite closely on the back of an elephant. The occasional individual may charge, but usually proves to be a female with a calf at heel. Elephants, though, all show a natural fear of the rhinos, and those used to carry visitors in the sanctuary have to be carefully trained, a process which may take anything up to eighteen months to complete. Even then some of them will bolt if a rhino does charge. In attacking elephants or other members of their own kind the rhinos do not appear to use their horns. Instead they make very effective use of their well-developed lower incisor teeth. With an open mouth and a vigorous toss of the head they can open long gashes along the sides of their opponents. Although tigers are occasionally reported to attack young rhinos, it is believed that they are afraid of the adults. Man, it seems, is the rhinos' only real enemy.

The Problem of Asia's Rhinos

By the end of the last war the Kaziranga population seemed so well established that it was considered that one or two young ones could be spared each year to send to zoos in various parts of the world. Although the species was now unlikely ever to become extinct in the wild state, and need to be preserved in captivity, the possibility of an epidemic outbreak could not be completely ruled out. To build up the necessary experience to maintain captive breeding stocks would be a cautious insurance against any serious depletion of the wild populations.

Accordingly in 1947 the Kaziranga authorities made their first attempts to catch young rhinos. They aimed to capture a young pair which they had promised to Whipsnade. The method used is the same as that which the hunters perfected before the days of protection. Camouflaged pits five feet wide, five feet deep and nine feet long are dug along some of the main rhino tracks. Each morning these are inspected. When a young specimen is found in a pit, one end of the pit is dug away to form a ramp down which a wheeled cage can be lowered. When the rhino has been enticed inside and the door made secure, elephants are used to draw it back to camp. Here the captive is released into a small stockade. The first objective is to get the rhino used to human company, and this is achieved by hand feeding through the bars of the stockade. In the majority of cases the young animal loses its fear of man and becomes quite tame within a few days of capture, after which time its captors can enter its cage at feeding time.

The method was first tried out in February 1947, and on the very first night a young male and a young female were trapped. The male, Mohan, was soon tamed, and arrived at Whipsnade during the summer. The female proved a more awkward captive, and unfortunately died of blood poisoning before she had become tame. The Kaziranga staff have found from experience that females tend to be more difficult to tame than males. In most years since 1947 at least two young rhinos have been

The Problem of Asia's Rhinos

captured and sent out to zoos, so that today many zoos have a pair from which they are hoping to breed.

Whipsnade had to wait until 1952 for a mate for Mohan, who by this time had settled down and was a well-grown specimen. He had proved a very good-tempered animal. Keepers could enter his paddock freely, and special visitors were even allowed to ride on his back on occasion. Mohini, as the young female was called, settled in equally well. To begin with the two were not allowed in the paddock at the same time, for Mohan was much bigger than his future mate, and it was feared he might attack her. By this time Chicago had had a young pair for four years, and all attempts to introduce them to each other had ended in failure, because every time they met furious fighting broke out, and they had to be separated.

Mohan, however, took a great interest in Mohini and, it seemed, a friendly one. Eventually, after Mohini had had a chance to grow more, they were at last allowed to meet. Fortunately there were no signs of trouble, and the two have lived amicably together ever since. Little was known at this time about the breeding habits of the Indian rhino. Mating had only been observed on a few occasions in the Kaziranga Sanctuary, and only one birth in captivity had ever been recorded. This occurred at Calcutta Zoo on 9th October 1925. Mating had taken place towards the end of March 1924, so the gestation period on this occasion had occupied rather more than eighteen months.

With several zoos each possessing a pair of Kaziranga rhinos, there was of course a good deal of friendly rivalry to be the first zoo to produce a calf. Success was first achieved towards the end of 1956 by Basle Zoo, to be followed by the birth of a calf at Whipsnade in 1957. In 1959 these two young rhinos were sent to Milwaukee Zoo, in the U.S.A., where it is hoped they may eventually breed in their turn.

Compared with the other two species of Asiatic rhinos the

The Problem of Asia's Rhinos

Great Indian rhino must be regarded as a safe species. The Javan rhinoceros (*Rhinoceros sondaicus*), also known as the Lesser One-horned rhinoceros, is very similar in appearance to the Great Indian rhinoceros, but is on the average a slightly smaller animal. It has very similar folds in its skin, with the slight difference that the fold just in front of the shoulder continues right across the back, whereas in the larger species it fades out over the back of the neck.

In earlier times the Javan rhinoceros was very widespread, having a much greater range than the Indian species, extending from northern India and southern China right through south-east Asia to Sumatra and Java. Today it is believed to be extinct everywhere except in Java, though it is not impossible that small populations may still exist in some inaccessible areas. Even in Java, where it was at one time common throughout the island, it is now confined to one small game reserve. As with the Indian species, the spread of agriculture and the commercial value of the animal, and in particular of its horn, both contributed to its downfall.

Serious attempts to preserve the remnants of the species date from 1921, when the Netherlands Indies Government set up the Ujung Kulon Nature Monument, which ten years later became a game reserve. The main purpose of the reserve was to provide a region where both the Javan rhinoceros and the Javan tiger might escape the threat of extinction which hung over them. The Ujung Kulon Reserve is a peninsular which forms the western-most tip of the island. It is thirteen miles long with a maximum width of seven miles, but the neck of land connecting it to the rest of the island is little more than half a mile wide. The total area is 117 square miles, consisting of lowland forest, mostly very dense, interspersed with a few small areas of open pasture land. In order to give the rhinos the best chance of building up a flourishing population, human settlement within the reserve was forbidden, even the staff of the

The Problem of Asia's Rhinos

reserve living on the mainland. Constant patrols are maintained by the rangers and wardens, for such is the commercial value of the rhinos that only constant vigilance will protect them from the poachers.

An accurate figure for the total population is even more difficult to obtain than it is for the Indian rhino, but estimates vary between two dozen and eighty. Little is known of their habits, but they are known to frequent wallows. With the strict protection which they now enjoy, it seems reasonable to hope that they are safe from extinction. If they do not survive it will probably be for biological reasons rather than through persecution. The present numbers may be so small that they are below the critical level for normal breeding. From the evidence of the Indian rhino over the past half century in the Kaziranga Sanctuary it would seem that two or three dozen individuals are sufficient as a nucleus stock from which to build a flourishing population, but it is not entirely safe to assume that what is a satisfactory number of animals with which to start building up one species will prove equally so for another, even if it is a closely related one. Whether the present remnants of the Javan rhinoceros in the Ujung Kulon Reserve are enough as a basis for rebuilding the species only the experience of the next two or three decades will decide.

Of the three Asiatic rhinos the one most likely to become extinct in the near future is the Sumatran rhinoceros (*Didermocerus sumatrensis*), also called the Asiatic Two-horned rhinoceros. This is the smallest of all the five existing rhinos, and like the two African species it has two horns. Its maximum dimensions are a length of nine feet and a height of four and a half feet. The front horn rarely exceeds a foot in length, while the hind one is usually only two or three inches long. Seen at a distance, therefore, this species can easily be confused with one or other of the one-horned species. For this reason inexperienced reports of any of the three species are always subject to some doubt.

The Problem of Asia's Rhinos

The original distribution of the Sumatran rhino was similar to that of the Javan rhino. Its range extended from Bengal and Assam right through Burma to Sumatra and Borneo. Today it is still widespread, but in most localities where it occurs the numbers are only small. It is in fact difficult to arrive at any reliable estimate of the total population of the Sumatran rhino today, because it is a much more wary species than the Indian and Javan rhinos and is more at home in dense hill forest, which makes it much more difficult to detect. However, although it probably no longer exists in any part of India or China, small numbers are still believed to inhabit remote forest areas in Burma, Thailand, Cambodia, Laos, Viet Nam, Malaya, Sumatra and Borneo. A full-scale investigation would be necessary to determine the present status of the species, and for most of the areas mentioned almost nothing is known about the numbers of individuals involved, though these are almost certainly small. Only from Burma are there any firm figures, and here the number of rhinos in 1959 was given as about forty.

The total number of Sumatran rhinos still living is almost certainly much greater than the number of surviving Javan rhinos, but they are in much greater danger of final extinction than the latter, because the Javan rhinos all live in a relatively small and effectively protected area, whereas the Sumatran rhinos are scattered over a very wide area, where effective protection is virtually impossible whatever legal protective measures may be decreed. The most urgent need to ensure the survival of the Sumatran rhino is a limited area containing sufficient numbers to ensure adequate breeding and to make effective protection possible.

All three species have suffered in the past and still suffer from the belief in the medicinal and magical properties of various parts of their bodies. Lee Merriam Talbot, an American naturalist working on behalf of the International Union for the Conservation of Nature, has recently made a thorough survey

The Problem of Asia's Rhinos

of the Asiatic mammals which are in danger of extinction, and in his report he summarizes the present state of the market for rhino products. He found that with the exception of a few hill tribes, all the peoples of south and east Asia still shared the belief that all parts of the rhino body are valuable. Even in 1955 he found that tiny tubes of rhino urine, presumably collected from zoo rhinos, were on sale in Calcutta. Prices offered for whole rhino bodies or their horns varied from country to country. Peak prices seemed to rule in Sumatra, where a Chinese syndicate were prepared to pay almost £1,000 for a large horn. With such prices as these at stake the problem of conservation is a very difficult one, and it is easy to understand why the poachers are prepared to take risks in order to catch any rhinos which are reported to them.

Although as yet their position is not so critical as that of the Asiatic rhinos, the wild elephants of Ceylon are also today facing a crisis. All the elephants of Asia belong to the same species, *Elephas maximus*, but there are several well defined races, each with its own particular qualities of ability and temperament. For centuries the elephants of Ceylon have been regarded as the most valuable of all the races, with a high reputation for their docility, intelligence and loyalty to their owners when tamed. They have always been in great demand with Indian Princes and Rajahs, who preferred them to the native Indian race. So far there have always been enough captured in Ceylon to satisfy all these demands.

The present danger to the future survival of the Ceylon elephants is due in the main to the expansion of agriculture. While there was extensive jungle there was plenty of room for the elephants and little temptation for them to visit cultivated areas where they might be shot. For some time, however, and particularly since the war, great tracts of forest have been felled and ploughed up as agricultural land. As a result many of the elephant herds have become isolated in comparatively small

The Problem of Asia's Rhinos

pockets of jungle completely surrounded by cultivation. Unfortunately no one apparently thought of leaving strips of forest that would have served as corridors through which the animals could have passed from one pocket to another in search of food and water.

As the elephants have become more confined in this way, so their excursions into cultivated areas have increased. The planters of course cannot be expected to put up with the very extensive damage that the elephants do without taking active steps to deal with them. And so they are being shot at such a rate that could very well lead to their extinction in the not too distant future. For the Ceylon elephant to disappear would be a great misfortune, not only from the general standpoint of fauna preservation, but also because of its value as a working animal.

Unfortunately there is no official policy as yet for dealing with this elephant problem, but Major A. N. Weinman, director of the Zoological Gardens at Colombo, has evolved a method which could save the bulk of Ceylon's trapped elephants from destruction. His idea is to capture the elephants and transport them to areas where there is still plenty of jungle for them to roam in without having to make excursions into cultivated estates.

To capture and transfer elephants is not an easy matter, but Major Weinman has already shown that it can be done. He has had valuable allies in this work. Living in the northern parts of Ceylon are the Pannikans, a race of people who for centuries have been noted for their prowess at capturing elephants. They are a fearless and courageous people, able to track elephants through the thickest jungle with uncanny accuracy. So confident are they of their ability to avoid danger, despite the risks that their work involves, that they seldom carry firearms with them.

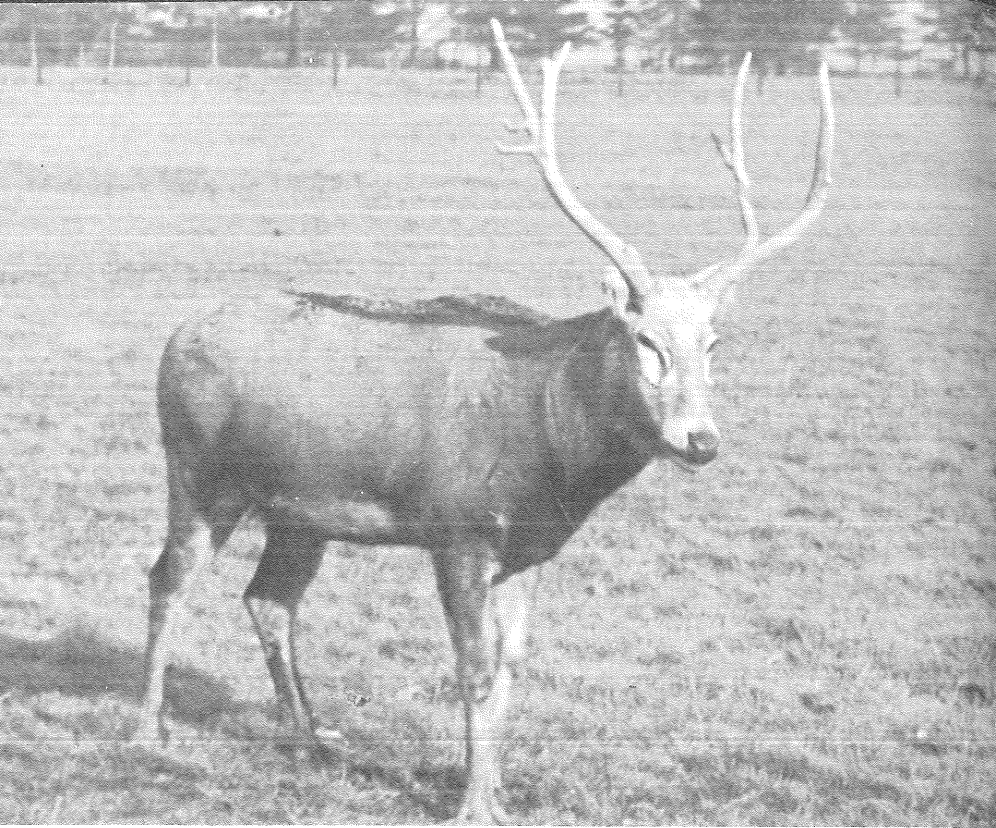
A working party contains about a dozen hunters, whose equipment consists of a few fire crackers and ropes of deerhide, each consisting of at least seventy-five thongs of hide twisted



8a. A herd of 26 musk-oxen take up their typical defensive formation on the tundra of Nunivak Island, Alaska. Photographed from the air

8b. Part of a musk-oxen defensive ring, photographed in Northern Canada





9a. A Père David stag at Whipsnade



9b. Giant panda "Chi-Chi" at London Zoo

The Problem of Asia's Rhinos

together. These are immensely strong, a single one being capable of holding a full-grown elephant for a time, but they are also very flexible.

The actual capture of an elephant exercises all the Pannikans' powers of jungle craft. They must creep up to a herd without being detected, and decide which animal they are going to capture. Two of them then work their way right up to the hind legs of the selected animal, carrying with them one end of the hide rope in which a noose has been tied. Others are in readiness to tie the other end firmly to a tree. When all are ready, the noose-bearers await their opportunity to slip the noose over one of the elephant's hind legs before making a dash for safety, and at the same moment the other end is secured to the tree. The remainder of the party are not just idle spectators. It is their job to throw fire crackers and shout at the rest of the herd, causing them to panic and stampede, leaving the captured elephant to its fate. If they were not dispersed they might well come to its aid, and this could be very unpleasant for the hunters.

This is not the end of the dangerous work, for hide ropes have now to be attached to the elephant's other hind leg, both forelegs, and round its neck, and this is no easy task when the elephant is already in a bad temper at having been caught. As soon as possible the captured animal is led to a temporary camp, where it will remain for a time while it gets used to captivity. Each night fires are lighted all round the camp to prevent rescue attempts by the remainder of the herd. Fortunately no other wild animal gets used to captivity as quickly as the elephant, and within a few days it can usually be led quite safely out of the jungle.

The first attempts to transfer elephants have been made on a herd estimated to number between eighty and ninety animals. This herd became isolated in an area of jungle adjoining the Ruaneliya Estate, situated some seventy-five miles from Colombo. The damage they did on the estate was so widespread

The Problem of Asia's Rhinos

that the owner was forced to take action. He hoped that shooting a few of the herd might discourage the remainder, and perhaps persuade them to break out from their jungle pocket and seek refuge in some more extensive forest area. Within a year twenty-two had been killed, but the herd unfortunately showed no signs of moving away. It was then that Major Weinman came to the rescue, armed with a permit to capture as many of the herd as he saw fit. The latest information is that fifteen elephants were captured in the first operations, and transferred to Colombo Zoo, to be released subsequently in some more suitable area. Major Weinman plans to continue the operations until the whole herd has been removed from Ruaneliya.

While this and other herds may be saved by such individual efforts, it is clear that the future of the Ceylon elephant can only be guaranteed by an enlightened official policy of conservation which takes due account both of the needs of the elephants and of the farmers. Perhaps it will be necessary deliberately to reduce the total elephant population, but let us hope that it will be possible to provide a permanent area of jungle sanctuary large enough to carry a reasonable number of herds.

Another group of Asiatic animals which have been causing anxiety recently are the various kinds of Chinese and Formosan sika deer. There are several different kinds of sika deer, the best-known and at the same time the least-impressive species being the Japanese sika, which is still quite plentiful and in no danger of extermination. In China, however, there are several different kinds. Opinions differ as to whether these are separate species or merely varieties of the same species. Whichever opinion is correct, the fact remains that each variety is quite distinct from all the others. They are all considerably bigger and more impressive than the Japanese sika, and have very attractive spotted coats.

At one time very common, several factors have combined to reduce them to their present precarious state. They are all

The Problem of Asia's Rhinos

essentially woodland animals and all over China and Formosa forests and woodlands have been cut down without any compensating planting of trees. So for a century or more the available habitat of the sika deer has been steadily destroyed, causing a corresponding reduction in the sika populations.

Equally important has been the fact that in Chinese traditional medicine the antlers of sika deer have always played a prominent part. The antlers are cut off before they are fully grown, the velvet stripped off, and the bone thoroughly dried. It is then grated to a powder and made into a soup, and used as a cure for impotence. The velvet is used as a tonic for mothers after childbirth. In order to obtain the antlers the stags are shot, snared or caught in pitfalls. In shooting, the hinds and calves can be spared, but the other two methods destroy these indiscriminately with the stags. High values have been placed on sika stag heads. In 1913 the head of a Manchurian stag was worth between £30 and £40, while in 1929 sika horns in south China fetched as much as £70 a pair. Thus all the sika deer of China have had to contend with both loss of habitat and economic exploitation, and their position today seems to be very precarious.

So long as the Japanese were in control of Formosa the Formosa sika fared rather better, for it was protected by the Japanese, but in the few years since their departure the population has declined almost to the point of extinction.

Although it is very difficult to obtain reliable information about the present state of the various sika deer, it seems likely that they are all at least verging on extinction, and therefore the only hope for their ultimate survival may lie in their maintenance in captivity. Fortunately there are herds of the most important kinds living in captivity outside China, and these have assumed considerable importance. There are for example herds of Formosan sika at Woburn, Whipsnade and at the Bronx Zoo in New York, as well as a small but well-cared-for herd in

The Problem of Asia's Rhinos

Japan. Various American and European zoos also have breeding herds of certain of the mainland sikas. Every effort will of course now be made to maintain, increase and divide these herds to ensure the survival of the sika deer at least in captivity if they cannot be preserved in the wild state.

Antelopes on the Danger List



When the Dutch farmers first came to South Africa they found a bewildering abundance of game. Great herds of grazing herbivores of many different species roamed the vast plains, giving promise of an inexhaustible supply of meat for the farmers and their families, as well as for the native labour they recruited to do their work. Prominent among them—in fact from all accounts more numerous than any others—were the grotesque creatures to which they gave the name wildebeest.

There are two distinct species of wildebeest, or gnu as they are now more familiarly called, the true or white-tailed gnu (*Connochaetes gnou*), sometimes also called the black wildebeest, and the brindled gnu or blue wildebeest (*Connochaetes taurinus*). There is also a variety or sub-species of the latter in East Africa known as the white-bearded gnu (*Connochaetes taurinus albo-jubatus*). Of the two species, the white-tailed gnu today claims more attention because it belongs to the small but extremely important list of species which have already become extinct in the wild state and are being maintained only in captivity.

The white-tailed gnu is a curious, almost grotesque-looking creature. Although a true antelope, belonging to the same group as the long-faced hartebeests, its antelope affinities are anything but obvious. Its hind end looks very much like that of a small pony, complete with a long tufted tail, while its head and



5. A great Indian one-horned rhinoceros bull emerging from a wallow in the Kaziranga Game Sanctuary in Assam. The tall elephant grass around the wallow has been burnt to encourage new growth and to provide viewpoints where visitors to the Sanctuary can get a clear view of the animals

6. A female Indian rhinoceros and her 3-month-old baby retreating through the grass in the Kaziranga Sanctuary

