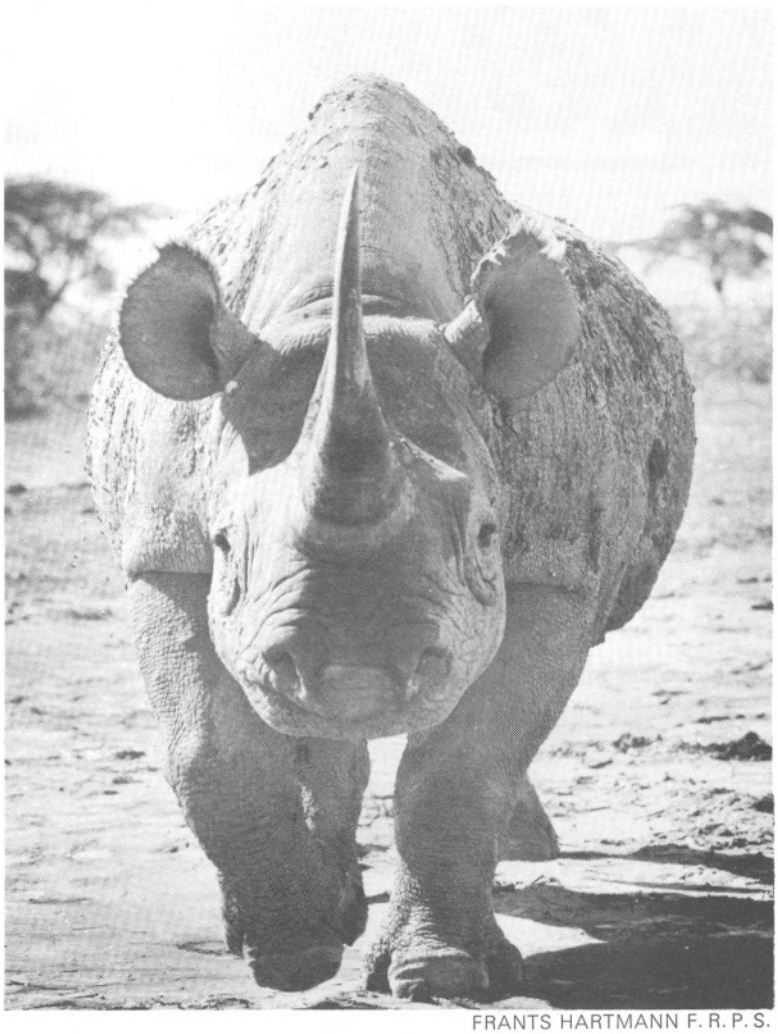
This well known photograph of a charging rhino has been used world-wide to advertise the famous brand of camera with which it was made. The picture was taken in Amboseli only a few short years ago when one could virtually guarantee to see rhino there. Since then 83% of the Black rhino in Amboseli have been lost to poachers.



FRANTS HARTMANN F. R. P. S.

Trying to save the RHINO

SWARA & Dr. Kes Hillman

The status of Black rhino is now causing world-wide concern. In June the World Wildlife Fund issued a press release from their Swiss HQ: 'There is no longer any question that all rhinos are now in grave danger'. WWF also announced that 'Operation Rhino' will be planned on an even bigger scale than their 'Operation Tiger' of seven years ago. In this article SWARA, with the assistance of Dr Kes Hillman (who is Chairman of the African Rhino Group), looks at the history of this grave problem and how it is hoped to solve it.

In the modern world there are five species of rhinoceros: Great Indian, Javan, Sumatran, White and Black.

The three Asian species are now extremely rare. They have been hunted, mainly for their horns, for centuries and are now close to extinction.

In Africa the White rhino is the largest (up to 3½ tons) but the Black (1½ tons) is the more numerous, even today, and has the larger range. In this article we are concerned, principally, with the Black rhino whose survival is now under grave threat. This threat has arrived in the brief space of a man's lifetime, a cataclysmic instant of time when measured on an evolutionary clock. Rhino first appear, in the fossil record of the distant past, 60 million years ago, 40 million years before the first hominids and about 57 million years before the first tool makers! During these 60 million years there have been 34 different species of rhinoceros, one of them being the biggest land mammal of all time; this enormous herbivore stood 18 ft high and was 28 ft long. It must have weighed around 25 times as much as a modern elephant—say about 150 tons.

In the past, when a species has become extinct, the process has always been a gradual one; even the oft quoted 'sudden' extinction of the dinosaurs took over a million years. Which makes what has happened to the rhino in the last 70 years even more horrifying.

Listen to Meinertzhagen in his fascinating *Kenya Diary* (Oliver & Boyd, London) in 1902:

'The number of rhino here is incredible. We and our men have in the last few days been compelled to kill 17, and yet the country is teeming with them. Barlow and I yesterday evening found three across our path when we were returning home. We shouted at them, but they only got excited and refused to budge. I had an 8 bore rifle with me and at 30 yards bombarded the nearest beast. I missed him but the roar of the cannon sent him flying for miles with all his companions. We saw 21 different rhino today.'

And again in January, 1903:

'Today was a great day for Nairobi, for the local race meeting was held. . . . .

As the second race was finishing a silly rhinoceros was seen trotting towards the galloping horses. We all shouted to the riders to look out, and they returned at a pace which seemed to exceed that of the race. . . . . Nobody had a gun to scare him away, and we just had to wait for at least half an hour before he took himself off.'

Clearly, at the beginning of the century there were very large numbers of rhino in Kenya, although obviously they were more common in some areas than in others. They have never been

popular animals with professional hunters since the best trophies were amongst the forest rhino where it is difficult to select a good specimen without the risk of having to kill an unwanted animal in self defence. So the big reduction in numbers must be blamed on decreasing habitat, the deliberate elimination of rhinos to make way for farming and, of course, poaching.

In his book *Hunter* (Hamish Hamilton, London), J.A. Hunter devotes a chapter to what he calls 'The Great Makueni Rhino Hunt'. J.A. was hired by the government to clear the Makueni area of rhino so that it could be settled by the Wakamba people about 30 miles south-east of Machakos. (This is how 'Hunter's Lodge' on the Nairobi-Mombasa road got its name.)

Tsetse fly clearance was one of the justifications for this programme; to get rid of the tsetse it was necessary to clear the bush and before clearing the bush it was necessary to eliminate the rhino. Early in his chapter J.A. Hunter states:

'The Makueni area of the Machakos district is the greatest rhino country in Africa, so this would be the biggest rhino hunt in history.' J.A. killed 163 rhinos in this area and explains that as the demands for land increased he was called on to undertake similar programmes in other areas:

'At the time of writing I have shot over a thousand rhino. Is it worth killing off these strange and marvellous animals just to clear a few more acres? ..... I do not know. But I know this. The time will come when there is no more land to be cleared. What will be done then?'

That question, surely, is still with us. But today's crisis situation is not caused by cropping or organised by government. It is a direct result of the incredible price of rhino horn in the middle and far east, and the resulting illegal poaching.

To stop this racket will be a complex business and it will cost a lot of money; our remaining rhino live, for the most part, in remote and difficult country which is expensive to police and supervise. And dealing with the international traffic in rhino horn—now worth more per ounce than gold—is going to be like trying to stop the traffic in illicit drugs. This is the measure of the problems facing would-be conservationists in 1979. Fortunately concerned people are now working to overcome these formidable problems. Dr Kes Hillman is Chairman of the African Rhino Group which brings together several international conservation agencies: the International Union for the Conservation of Nature and Natural Resources (IUCN), through its Survival Service Commission (SSC), has joined forces with the New York Zoological Society and the World Wildlife Fund. At a local level the East African Wild Life Society has agreed (as reported in the last issue of SWARA) to assist the funding of an assistant to Dr Hillman.

BILL CAMPBELL

During the last few months several rhino have been captured in areas of Kenya where risk of poaching is high and translocated to safer parts of the country. Although there is some risk to the animals in this kind of exercise and some of the recent translocations have been done hurriedly in emergency situations the exercise has been a success.

Dr Kes Hillman, Chairman of the African Rhino Group, writes:

Twenty one wild rhinos seen in a single day! How often is a sight like that seen here now?

In a country where it was once found necessary to eliminate 1088 rhinos from one single area in order to make room for an agricultural scheme that never even succeeded, it has now been recognised that fairly drastic measures must be taken to conserve what are probably not much more than 1088 rhinos in all.

In the past rhino were always a part of the environment to people in many areas of East Africa—an occasional nuisance to farmers, something to be wary of when out walking, something to be hunted for sport to prove one's manhood, and to provide the occasional 'rungu' or club, hide for whips, or meat. It was an animal to be respected for its strength and prowess, to be the subject along with all the rest of stories, songs and traditions.

However, even in the 1950's A.T.A. Ritchie, former chief Game Warden assessed the Black rhinoceros as being 'one of the species most in danger of extinction.'

In 1962 Noel Simon wrote that 'the decline in the number of rhinos during the past half century is more marked and more serious than with any other single species, lion alone excepted. . . . . the Black rhinoceros stands in grave peril of extinction in Kenya unless effective protection can be afforded. . . .'

In the 1960s a Game Capture Unit was established, which successfully translocated large numbers of rhinos from areas where they were vulnerable.

As late as 1969 there were possibly between 15 and 20,000 Black Rhinos (*Diceros bicornis Linn.*) in Kenya. Today there are less than 1500—a tenfold drop in as many years. This figure was arrived at by two separate methods of estimation. One was made by the Kenya Rhino Working Groups, based on figures collected area by area, from ground and aerial counts, from detailed studies and from reports by wardens, farmers, researchers and others. The other was made by the Government of Kenya's Rangeland Ecological Monitoring Unit, based on their aerial census of the rangelands of Kenya, corrected for the recognised bias towards undercounting rhinos from the air and the addition of the uncounted forest areas to give a figure between 871 and 1442 in 1978. **The latter estimate is only 31.4% of what it was the previous year on the same basis.**

The population of the Tsavo area (9000 square miles) alone was estimated at between 6,000 and 9,000 rhinos by Goddard in 1969. **It is now less than 5% of that.** In Amboseli the population has dropped from around 60 in the 1960s to 10. In Meru National Park between 1976 and January 1979 aerial census figures showed a steady decline in rhino numbers and the warden and rangers faced a continual battle against rhino poachers, until possibly 15 rhinos remained. The thickly bushed Lamu and southern Garissa areas and the lower Tana River were estimated to contain approximately 820 in 7800 square miles in 1976. The present estimate for the area is 75-100. Although this was one of the later areas to be hit, poaching has been a problem there since 1975/6. Few rhinos are left now in the Mara Game Reserve. Scattered pockets of them remain over the rest of Kenya, but the largest populations are probably in the mountain forests, particularly the secondary forests of the Aberdares, areas worth a concentration of effort to protect.

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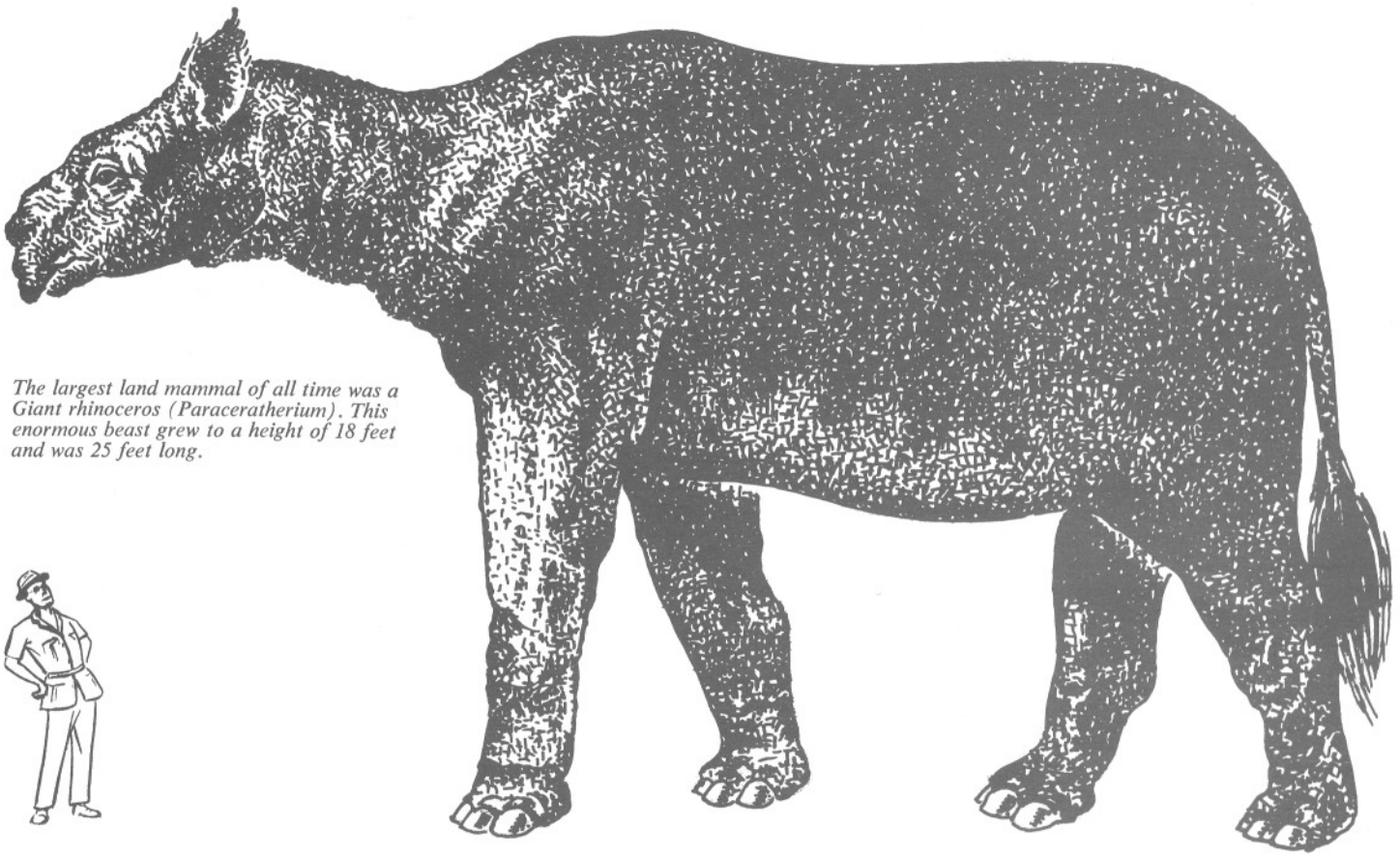


The largest land mammal of all time was a Giant rhinoceros (Paraceratherium). This enormous beast grew to a height of 18 feet and was 25 feet long.

Tanzania may have somewhere between, 2,000 and 8,000 rhinos. A large proportion of these are in the Selous Game Reserve, and surrounding area where two aerial counts by the IUCN Elephant Group in 1976 estimated 2,000 to 3,000 rhinos in 18,000 square miles a figure which when corrected for the bias of undercounting rhinos would be at least 4,000 to 6,000. This huge wild area has not been under much pressure from poaching, but the Parks and Reserves in the north have. Tanzania National Parks have reported that poaching was severest in Serengeti, Tarangire and Manyara. Incidence of rhinos found definitely killed by poachers increased in Manyara from 2 in 1975 to 25 in 1978, and probably less than 12 remain alive. In Serengeti 6 rhinos were found poached in 1975, 24 in 1977; in Arusha National Park, once good rhino habitat, the incidence of poaching rose from 1 in 1975 to 10 in 1977 and possibly 4-5 were still alive at the end of 1978. In Ruaha National Park two rhino were found dead in 1975 and 32 in 1977. Aerial census estimates for Ruaha National Park alone (3900 square miles) were 447 in 1973 and 94 in 1977. Tarangire census figures have fallen from approximately 239 in 1976 through 55 in 1977 to 0 in December, 1978.

Aerial counts do not give accurate figures of the true population; they are sample counts which must be corrected upwards since rhinos are difficult to observe from the air and are sometimes concealed under bushes or trees. Rhinos were actually seen, within Tarangire National Park, at the time when the 1978 census gave a figure of zero. The important concept of these surveys is that if each census is made in the same way they provide a comparison and clearly indicate changes in the population. Obviously a severe downward trend is apparent.

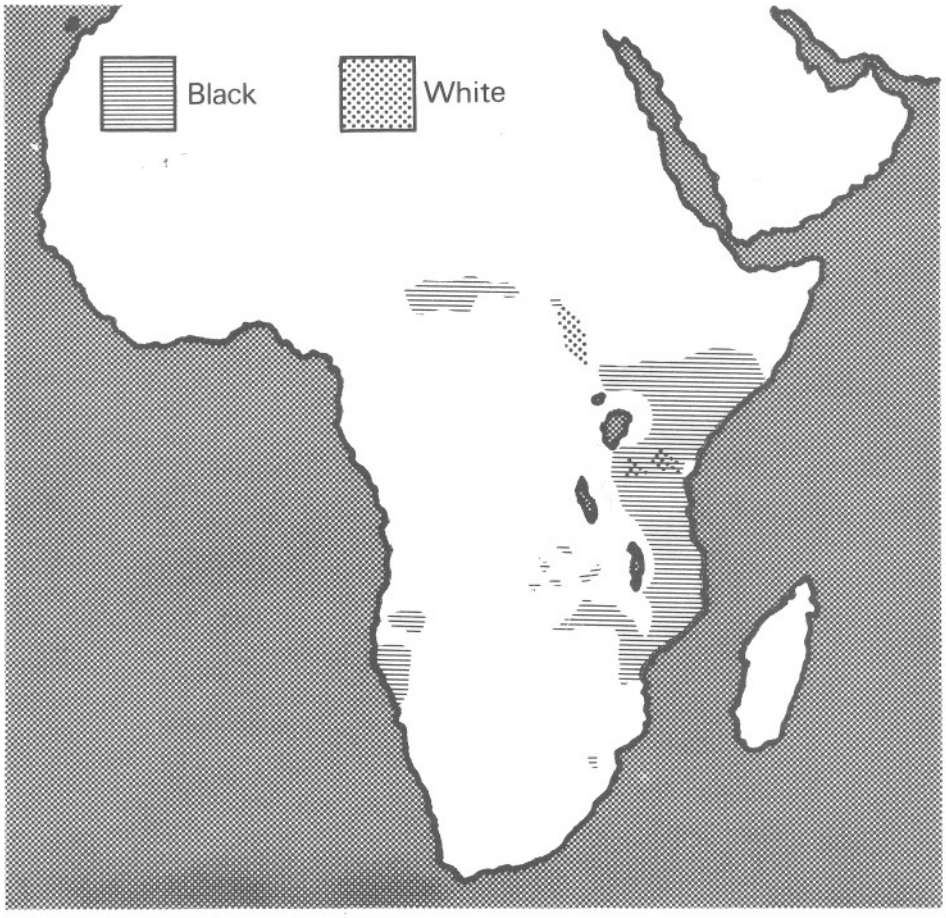
Reports from Uganda are of less than 100 Black rhino remaining in Kabalega and Kidepo National Parks, and no White rhino (*Ceratotherium simum cottoni*) in Kabalega and only one in Ajai. While it is war that has caused the major devastation there, it is still man's predation. Elsewhere the status of Black and White rhino populations varies, but everywhere the trend is one of declining numbers and loss of range. Zambia's Luangwa Valley still contains one of the largest populations of black rhinos in Africa, estimated at between 4,000 and 12,000 in 1973. There has long been hunting there, both legal and illegal for trophies and meat, but only recently has the commercial value of the horn begun to increase the pressure. In Cameroun, Tchad, Central African Empire and Sudan both species of rhino have steadily declined and their range diminished under hunting pressure, but large numbers of black rhinos still remain in C.A.E. where organised commercial poaching has not yet had such a severe effect. Little is known from Zaire. There is undoubtedly a downward trend but elephant hunting is the greater threat there. No Black rhinos have apparently been seen since 1954. Elsewhere numbers are in the tens or low hundreds in the other countries where rhino exist (Angola, Mozambique, Malawi, Botswana, Rwanda, Namibia, Rhodesia, and South Africa). Only in Southern Africa are numbers maintained at a relatively stable level at present but their existing range is a fraction of what it once was.

What has caused these severe declines? Basically a combination of the demands of man and the relatively slow reproductive potential of rhinos.

The early declines of Black and White rhinos in Africa were mainly due to loss of range in the face of increasing human populations and agricultural land use, and to overhunting of what had once seemed an unlimited resource.

The recent acceleration of the declines stems ultimately from man's desire for rhino horn and the enormous inflation in its value, which has provided such in incentive to poachers and dealers that the law enforcement authorities have been unable to cope. Prices around 2-4,000/- K.Shs. (US $260—530) are being paid to poachers and about U.S. $800 per kilo is the value in the Yemen. It is even higher in the Far East (although the highest prices are paid for Asian rhino horn).

The rhino's horn, a compacted mass of Keratin is the prime symbol of the properties with which the rhino has long been endowed, properties which have already reduced the three Asian rhino species to mere relicts of their former range and numbers, and now



Distribution of rhinos in Africa

threaten the same for the African species.

The aphrodisiac property of the horn is often quoted; based possibly on its phallic shape and the lengthy period that rhinos remain locked together in copulation. The rhino's penis has a special place of respect among Borneans for its cross-bar or palang. But the sexual significance is by no means the only one. In the Far East the powdered or dissolved horn and skin is a traditional medicine supposed to cure a multitude of evils. I quote from a label of *Three legs Brand Rhinoceros Horn Anti-Fever Water:* 'This wonderful medicine acts like a charm in giving immediate relief to those suffering from: Malaria, High Temperature, Fever Affecting Heart, And Four Limbs, Against Climatic Giddiness, Insanity, Toothache etc,'

Rhino horn was also carved into often elaborate cups, which were used in Indonesia, Malaysia and India to detect poison. The liquid was supposed to bubble, or the cup to crack in the presence of poison.

In the Middle East, particularly the Yemen, rhino horn is carved to form the handles of the daggers or Jembias traditionally worn by men of status and handed down from father to son. With the influx of money from the oil fields of Saudi Arabia more people can afford the genuine article, which may cost up to U.S. $6,000. The demand for rhino horn has therefore increased. In 1976 over half of Kenya's export of rhino horn went to the Yemen.

The Far East imports some of its rhino products directly from Africa and some as chippings and shavings resulting from the carving of Jembia handles in the Yemen, which goes on to be used in the powdered form.

North Yemen imported an average 7.6 tons of horn per annum from Kenya between 1976 and 1977. The average weight of rhino horn collected in Kenya's National Parks between 1960 and 1977 was 4.34 lbs per horn. Therefore on the basis of 8.68 lbs per rhino, the North Yemen imports may have originated from the deaths of nearly 2000 rhinos per year.

Field observations indicate that female rhinos in the wild produce a calf on average every 4 years in some areas, although zoo records indicate that potentially they could do so every 27 months. Generally only one calf is produced and calf mortality is high.

It takes a long time therefore to replace each rhino that is lost, and the rate of loss easily exceeds the rate of replacement. Rhinos normally exist at a low density in the wild. Goddard recorded densities of 3.3 rhinos per square mile in parts of Tsavo, but densities in the region of 0.5 per square mile were more common and a tenth of that or less is generally the case these days. In addition rhinos are relatively sedentary and do not tend to spread out of their home ranges into new areas. Even the opportunity to breed is thus markedly affected by the declines, until some of the remaining populations are barely viable.

However the seriousness of the situation has been recognised. The International Union for the Conservation of Nature and Natural Resources through its African Rhino Group, (the headquarters of which is based in Nairobi) and the New York Zoological Society are looking towards assessing the rhino situation throughout Africa and identifying the specific conservation needs for rhinos in each country. The World Wildlife Fund and other funding bodies plan a world-wide campaign to raise money to implement these recommendations.

On 22nd May 1979 the President of Kenya, Mr. Daniel Arap Moi issued a directive that "All rhinoceros within the Republic of Kenya be henceforth accorded complete protection by the Kenya Government, and may under no circumstances be hunted or harrassed by any person." He also called for an Emergency Conservation Plan to be drawn up immediately. Groups of individuals from a wide variety of fields working together with the Wildlife Conservation and Management Department have formulated an overall strategy of action for most effective ways of conserving Kenya's remaining rhinos by hitting at all levels of the problem. The Government is now finding the money to implement them, to be backed up by international funds.

Action is needed at all levels. Studies of the trade in the importing countries, the users of rhino products and the most effective ways of limiting the trade are being done. International approaches to the importing countries are being made to curb their trade. Kenya banned her own trade in wildlife products in 1976 and has signed and ratified the Convention for the Control of Trade in Endangered Species (CITES), an agreement between countries that prevents or limits trade in Endangered Species.

Within the country, greater policing of illegal internal trade and border and export point control can be carried out. Stricter enforcement of sentences for poaching is needed and co-operation with the local people in wildlife areas must be increased. Kenya has greatly strengthened her anti-poaching forces with the loan from the World Bank for development of Tourism and Wildlife Conservation. These forces are beginning to be effective. Poaching of rhino has slowed in some areas in recent months as a result of this and of the fact that numbers of rhinos remaining are too few to make the poaching effort worthwhile. Funds for anti-poaching work will however be one of the main requirements for the other two East African countries. Uganda will require considerable funds to rebuild her stricken wildlife areas in the future.

At the level of the rhinos themselves such drastic measures as translocation of unviable populations and the establishment of breeding sanctuary areas

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are a prime consideration. In general the aim is to concentrate most effort on the areas already set aside as Parks and Reserves. In Amboseli for example it has been estimated that a rhino alive is worth far more each year to the country through tourism than it is once dead to the poacher concerned and in these areas the economic returns back up the value of the conservation efforts.

Areas where small pockets of rhinos remain that are considered unviable, either by virtue of their numbers or the increasing human land use, are being identified and costs and logistics worked out for translocation of the rhinos. Each area has been examined and the most cost-effective measures recommended. These include increased anti-poaching, temporary consolidation to facilitate protection, movements to and out of areas. Different locations have been considered in detail as potential reception and sanctuary areas and the costs involved assessed. Some translocations have already occurred recently and more are an immediate priority.

Public awareness of the situation is being increased through the media and a campaign will be launched nationally to raise funds for the action.

Each country that contains rhinos, within Africa and Asia, is being requested to formulate recommendations for the highest priority needs, and these will be backed up by international fund-raising. What remains is the difficult task of implementing the action, but it is to be hoped that at least some of this effort will be effective.

As far as Kenya is concerned, the country is working towards ensuring that the symbol of her National Parks will remain a viable one and that rhinos will again become a common sight.

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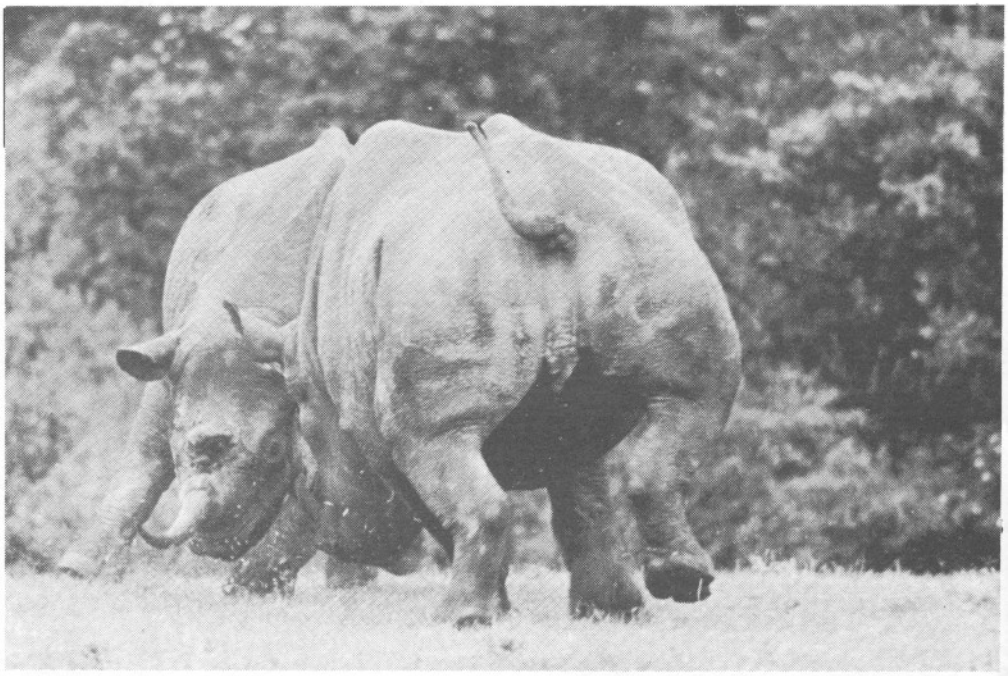
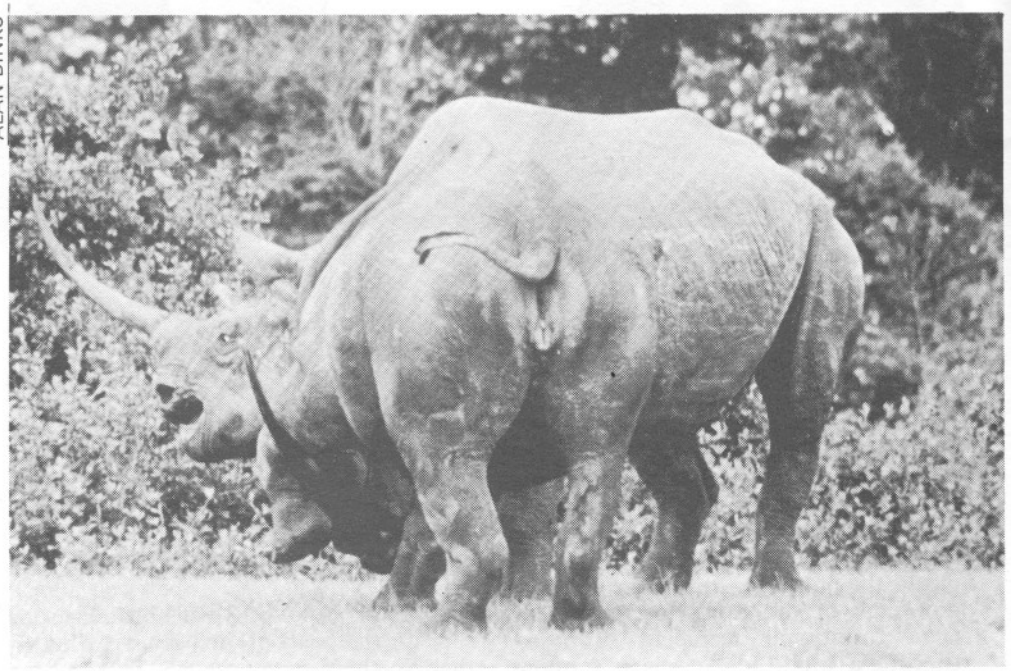


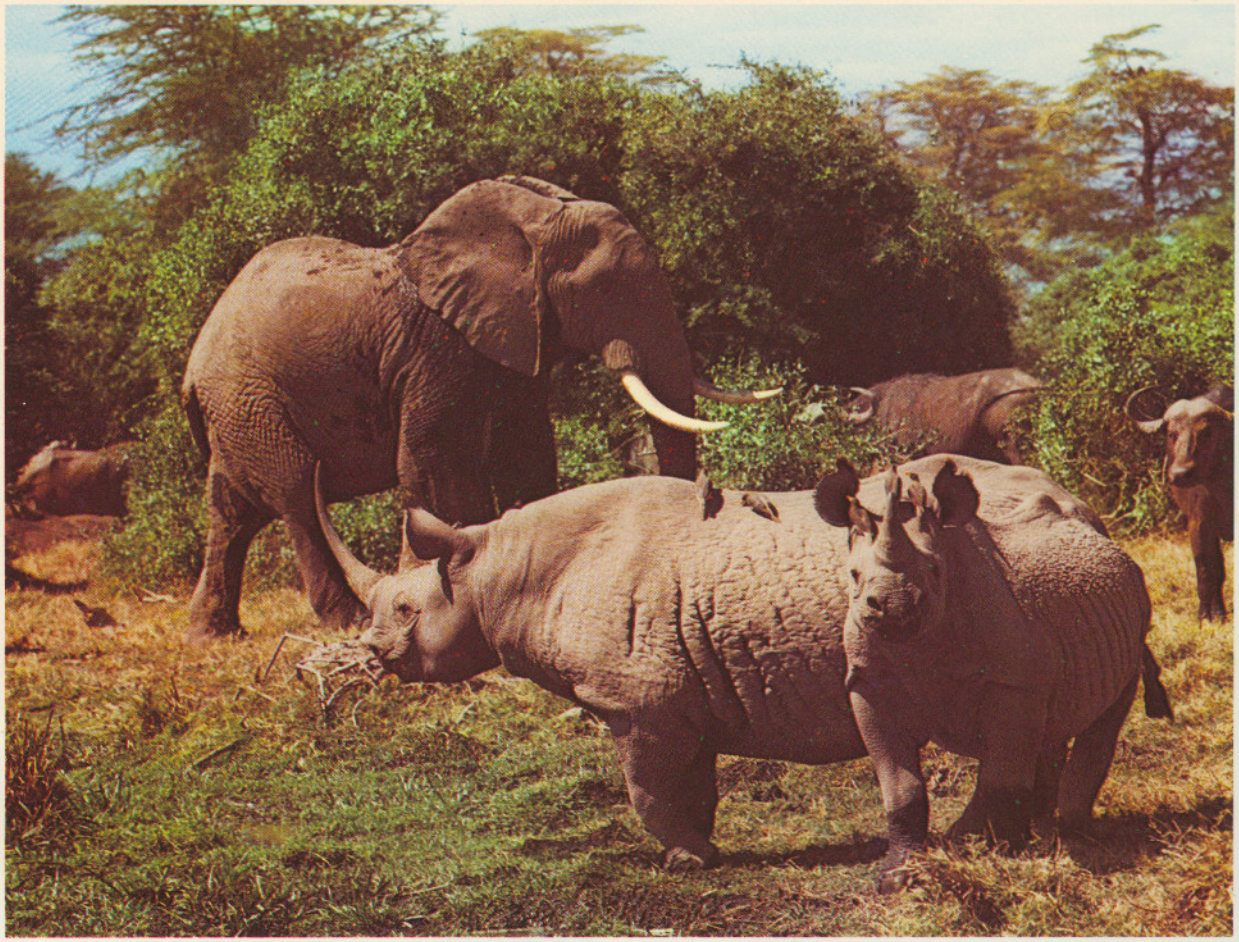
ALAN BINKS



ALAN BINKS

ALAN BINKS

These unusual photographs of rhino fighting were taken recently in an area of Kenya where, fortunately, there are still a good number of Black rhino in the wild.



FRANTS HARTMANN F. R. P. S.

Three of the 'Big Five' in one photograph! This idyllic scene would be difficult to repeat today even though the picture was taken in Amboseli only a few years ago. Hopefully, if new plans for conserving rhino succeed, it may be possible to re-stock places like Amboseli in the future.

ALAN BINKS

If female rhino still have their calves with them they will fight off the advances of males. Although the adults seem to give each other a tremendous battering serious injuries are rare.