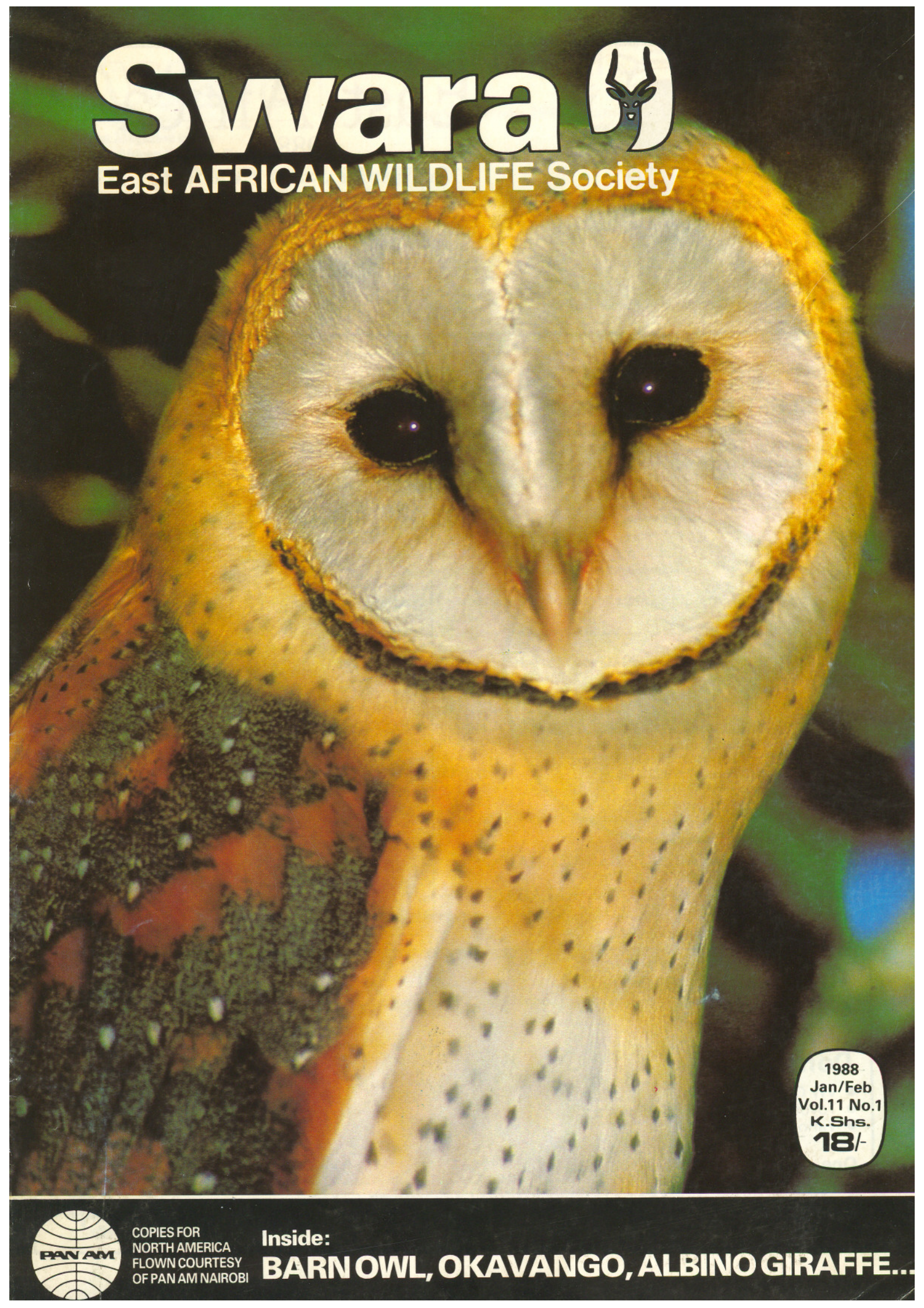


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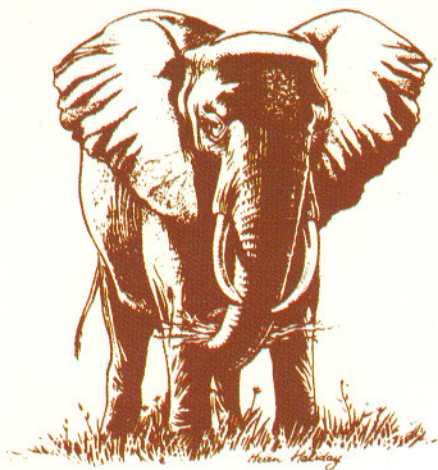


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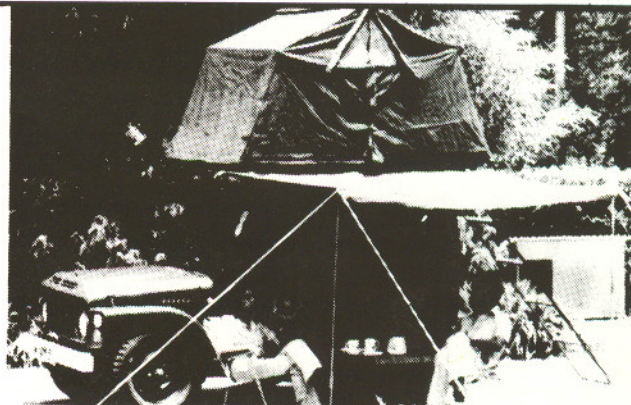
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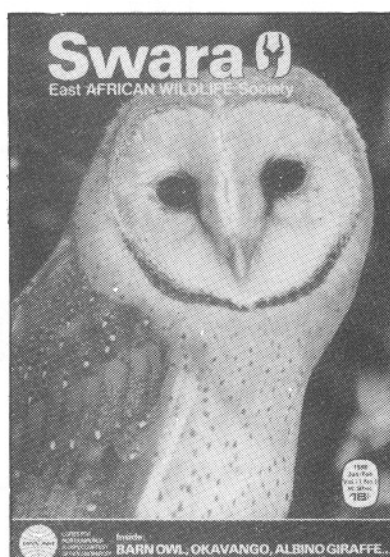
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Cover photo:
An African barn owl (*Tyto alba affinis*)
Brian Beck

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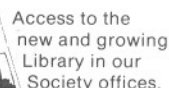
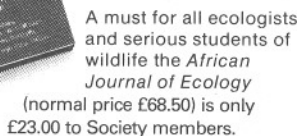
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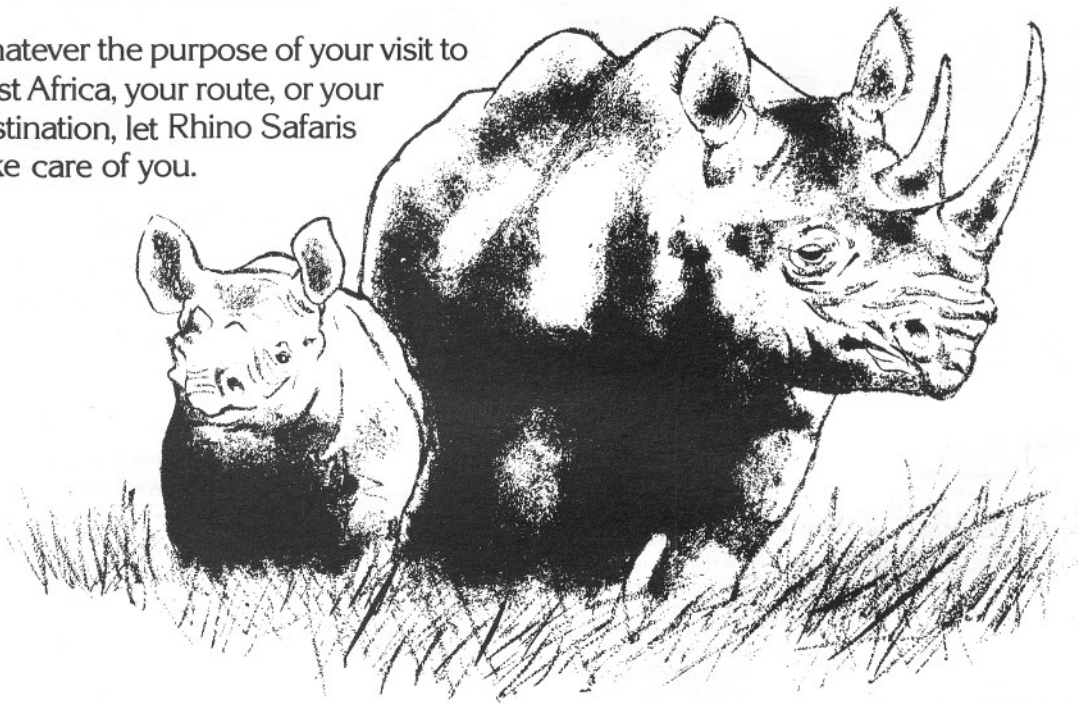
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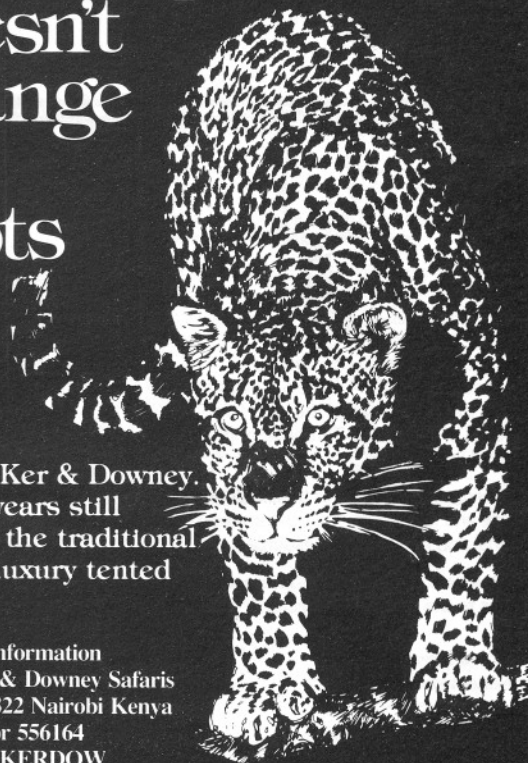
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The Lake Nakuru Rhino Sanctuary

by F.K. Waweru,
Member of the EAWLS Scientific & Technical Committee

During the early 1960s, the black rhinoceros was found all over Kenya apart from a small tract of land on the shores of Lake Victoria and the coastal strip. In 1970, their population was estimated to be around 20,000, but today there are only thought to be about 500 left. This rapid decline in their numbers has mainly been a result of poaching, fuelled by the escalating prices fetched by rhino horn in Far and Middle Eastern countries during the 1970s and early 1980s. Neither the Kenyan government's attempts to halt the slaughter by banning hunting and by increasing anti-poaching efforts, nor the struggle by conservationists to control the international trade in rhino horn, has arrested the decline. The rhinos that now remain are mainly in scattered populations, so their chances of reproduction are poor.

In 1985, the Kenyan government, working with a number of conservation bodies, including the East African Wild Life Society, produced a rhino conservation programme which involved the establishment of a series of rhino sanctuaries in Kenya, in the Lake Nakuru, Tsavo and Aberdare National Parks. Work started on the first sanctuary, at Lake Nakuru, in 1986, and by the end of May last year the sanctuary was ready. Four water troughs, paid for



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by the East African Wild Life Society, had been constructed, and a 71-km solar-powered electric fence had been built around the park's perimeter — to keep the animals in and the poachers out.

Before the fence was completed, there were already four rhinos in the park. Two of these, a male and a female, had been there since before the area was made a national park, and it is a mystery why they never appear to have bred. The other two, both males, had recently been translocated to the park: Kiserian from Nairobi National Park, and Amboni from Lewa Downs. After their release, Amboni was often sighted with the indigenous female but no mating was witnessed. In early October, however, a team of rangers and I saw Kiserian and the female mating.

Once the sanctuary was ready, a further 15 sub-adult rhinos — eight males and seven females — were translocated there from the game reserve on Solio Ranch, the last translocation taking place in October. The rhinos are currently to be found mainly in the southern part of the park, although they have been seen as far north as the euphorbia forest to the east of the lake and the Presidential Pavilion to the west. Their movements seem to be restricted by the absence of freshwater in the northern area of the park, but once work in completed on four new boreholes, which will supply water to most of the park, they should start establishing their own more widespread home ranges. My studies of the vegetation indicate that there is suitable and sufficient forage for them distributed all over the park. Plenty of food and space are of paramount importance to rhinos, so the prospects for a successful breeding programme are good.

All that remains, now that the animals are in the park with all the facilities they require, is for the Kenyan government and its staff to ensure that the most vigilant security is maintained at all times to guarantee the safety of these animals.

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Kenya's coastal fisheries

by Tim McClanahan and Nyawira Muthiga

Opinions differ as to whether the sea off the Kenyan coast is being under or over-fished, and as to what effect this is having on the abundance and diversity of marine life.

One often hears contradictory statements about the potential of Kenya's coastal fisheries. Some people argue that coastal fisheries are under-utilised and through increased effort could produce additional food and income. Others protest that marine resources are being over-exploited and environmental problems are likely to follow. The management implications of each argument are obviously quite different. How, then, can these seemingly contradictory viewpoints be reconciled into developing a long-term management strategy for Kenya's coastal fisheries?

The clarifying distinction in this debate is the difference between inshore and offshore fisheries. Tropical inshore fisheries include shallow water environments such as coral reefs, seagrass beds and estuaries. Being close to shore, inshore fisheries allow fishermen to travel to and fro in a single day. Inshore waters are also generally more productive than offshore areas because of their greater nutrient concentrations and because light reaches the seafloor, which results in high productivity of corals, seagrass and algae. The small fisherman's efforts, therefore, are better rewarded in inshore areas.

The economics of exploiting these two areas are quite dissimilar and, consequently, the fishing pressures differ. Kenya's fish catch over the last few decades has vasculated around 5,000 metric tons per year, of which over 90 per cent comes from inshore areas. Surveys undertaken in offshore areas estimate a potential offshore yield of between 5,000 and 9,000 metric tons per year, which suggests that Kenya could potentially double or triple its total marine fish catch. But, of this figure, approximately 50 per cent are noncommercial species and the other species exist at such low densities that the cost of fishing them may not be economical. The dubious profits of offshore fishing, combined with the large amount of capital needed to buy power boats and refrigeration facilities, has resulted in most fishing effort being focused inshore. Additionally, fishermen are guided by demand and therefore concentrate on areas close to population centres. The result is that areas close to markets are heavily fished while areas further away are less exploited. The intro-

duction of ice and refrigerated boats and trucks in the last few decades has allowed nearshore areas further away from markets to be fished, but there is still a great deal of variation in the fish catch from different areas along the coast.

During the course of our research along Kenya's coast, we investigated the effects of fishing and shell collecting on the coral reef's flora and fauna and its potential long-term effect on its fisheries potential. Our results indicate drastic changes in the numbers of sea urchins, and in particular the rock-boring sea urchin *Echinometra mathaei*. This is due to overfishing of the sea urchin's predators. For example, in the Diani Beach lagoon, which is probably Kenya's most exploited reef, we counted an average of eight fish in 100 square metres compared to 125 fish in the same size area in the Malindi Marine National Park lagoon. As well, average fish lengths were much smaller in Diani than in the park. On the other hand, sea urchin densities in the park's lagoon were too low to count whereas they averaged 15 per square metre in Diani. This was a threefold increase from a study completed 15 years previously. It is a formidable task to even try and walk within Diani's lagoon at these high sea urchin densities.

A problem arising from this increase in sea urchins is that as they feed and rub their spines against the coral rocks they reduce live coral cover and increase the breakdown of coral substrate. This reduces the reef's complexity and means the loss of a refuge for many coral reef fishes. Additionally, in the absence of sea urchin predators, sea urchins consume the algae that might otherwise feed important edible fish. Another concern is that urchins may assist the breakdown of the fringing reef which protects the shore. The loss of the fringing reef could increase beach erosion and endanger hotels and other buildings built close to the water's edge.

In order to avoid these environmental problems it is essential to manage inshore coral reef fisheries and especially the fishing and collecting of sea urchin predators. Although more detailed research is still required, we already know enough to develop and implement a general strategy to manage inshore fisheries.

Sea urchin predators include a mixture of species. Some species, such as wrasses, are a valuable food source; the bullmouth helmet shell (*Cypraea rufa*) and porcupine fish are sold for their ornamental value; and the boxstar (*Culcita schmideliana*) has no commercial value. Triggerfish, which are probably the most important sea urchin predators, are reputed to have poisonous skins, but they are eaten in Kenya once their skins are removed. It is important to determine the relative importance of some of these species as effective sea urchin predators and their economic value in order to place harvesting restrictions on species which have the greatest sea urchin predation ability but the least economic or food value. Some species should receive protection or harvesting quotas. Additionally, some highly over-exploited coral reefs should be closed from fishing for a limited time.

Tourism at the coast is, as it is in the rest of Kenya, a two-edged sword. The construction of large hotel complexes puts a strain on the reef as it supplies fish and shell products for tourists, hotel staff and associated workers. The constant demand created by tourism may eventually self-limit itself if the reef is eroded by sea urchins and beaches are washed away because of increased currents and waves. On the other hand, it is because of tourism that we have Kenya's beautiful marine parks. The park's are areas of high fish, shell and coral diversity, which act as refuges for many species which are threatened by overfishing and the subsequent changes in the coral reef's flora and fauna.

One way to resolve this conflict is to keep tourists and marine parks close together. The Malindi-Watamu Parks and Reserve is an excellent example of a well-planned marine reserve as it offers tourists easy access to parks, which have the richest fauna, while maintaining the lower diversity reserve as a buffer and corridor between parks. South coast Diani Beach, which is the most populated tourist beach in Kenya, has no park nearby and is the most over-exploited reef in Kenya. Kisite-Mpunguti Park is too removed for easy access and from the problems created by overfishing. We therefore suggest that the



Angelfish (*Pomacanthodes chrysurus*).

status of Diani Beach be changed to a protected area. The productivity of Diani's fisheries is presently so low that it would bring greater economic benefit to the country as a protected area. Beyond the government revenue from entrance fees, it would create additional tourism related income for local fishermen to replace their lost fisheries income.

In order to increase fisheries production, Kenya is increasingly turning to offshore fisheries and the culturing of sea-food such as prawns and oysters. Both methods often require large investments and have high running costs. Because of these high costs and because local fish

prices are low by world market standards, if offshore fisheries and aquaculture are to be profitable, it is necessary to culture luxury foods for tourist consumption or to export the food in order to benefit from world market prices. If sea-food products are exported the local market has to compete with the world market, which may result in the inflation of local prices. Although exporting may generate foreign exchange, it is questionable whether local consumers and fishermen benefit in the long term. This suggests that inshore fisheries will continue to be an important source of food and income for coastal Kenyans and that their management is therefore vital.

Kenya's fisheries are at a critical point when careful planning and management are needed to cope with future changes. Intelligent policy and management decisions implemented now will be far more effective and less expensive than trying at some future date to rectify environmental problems and stop the reductions in fish catch. Reliance on offshore fisheries and aquaculture to supply future demand, although necessary, is not the whole solution. Inshore areas presently provide the bulk of the coastal fish catch and will continue to do so if managed to ensure their long-term viability.

9

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Okavango Safari

Story and photos by Joe Cheffings

The Okavango Delta, a myriad of pools and channels on the edge of the Kalahari Desert, offers excellent wildlife viewing amidst beautiful scenery.

Delicately scented blue and yellow water lilies blossom on the surface of a limpid lagoon. A family of jacanas runs lightly over the floating vegetation, while purple herons and long-tailed cormorants rest on tall stands of papyrus which shelter the quiet waters. This peaceful scene is disturbed only temporarily by a herd of red lechwe splashing through the shallows, making the lily pads sway and rock under the long toes of the jacanas. On some sandy ground, overlooking the lagoon, a lion rests in the shade of an acacia as he lazily watches the progress of the lechwe herd.

This is Botswana's Okavango Delta, a 15,000 sq km magic world, part land, part water, where the Okavango River spreads out into a myriad of pools and channels before finally losing itself in the endless sands of the Kalahari.

While on a flight from Maun, in north-western Botswana, to Mombo camp in the central Okavango, I had my first view of this fascinating region. It was late August, and the annual flood of the Okavango River, a great surge of water which starts six months earlier and 1,000 km upstream, had now completed the inundation of the vast, fan-shaped delta and reached its south-easterly limits. Innumerable channels and fingers of water, pushing out and dying away in the desert sands, marked the end of the yearly flow. Looking down on to the low, sandy islands between the braided waterways, I noticed some herds of zebra, wildebeest and impala.

In the heart of the Okavango, many of the islands are fringed with riverine forest, made up of leadwood, southern African ebony, hyphaene palms and several species of acacias and wild figs. Chief's Island, covering approximately 1,000 sq km, is the largest area of dry ground in the central Okavango. Most of Chief's Island lies within the Moremi Wildlife Reserve, and Mombo camp is situated just outside the re-

serve's western boundary.

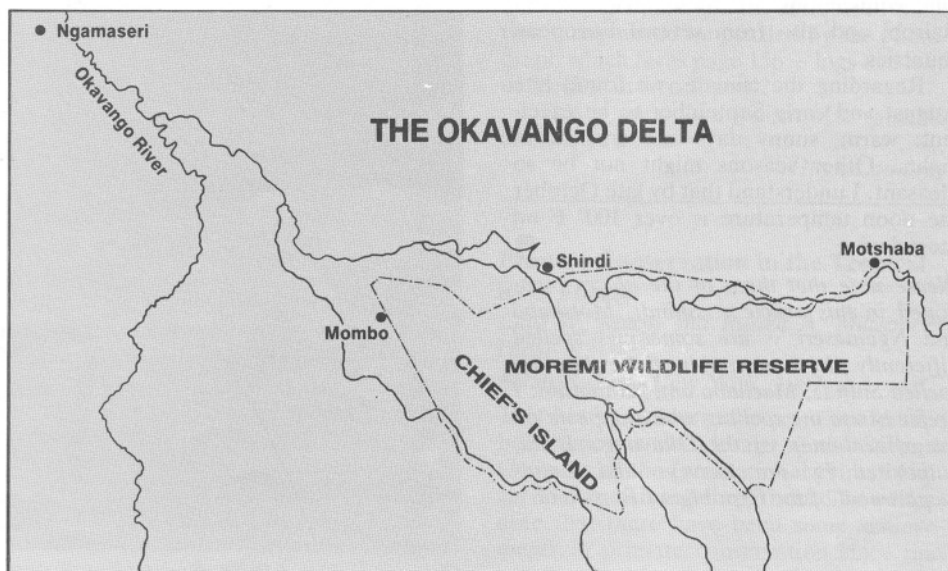
After landing at Mombo camp, my companions and I enjoyed several days of excellent wildlife viewing. In addition to blue wildebeest, Chapman's reedbuck, Burchell's zebra and southern impala, we saw giraffe, buffalo, greater kudu, tsessebe, red lechwe, southern reedbuck, warthog, Chacma baboon, vervet monkey, spotted hyena, side-striped jackal and a pride of ten lion. Fresh leopard tracks were seen close to camp. The buffalo, 400-500 strong, were a particularly fine sight as they drifted down towards the water in the late afternoon. Their hooves stirred up a haze of dust in the low rays of the sun, which seemed to hang like a fiery ball over the fronds of the hyphaene palms. Bird life is also plentiful in the Okavango, especially on the flood plains and waterways and in the riverine thickets. At Mombo we were awakened every morning by the voices of Myer's parrots, Burchell's starlings, swamp bou-bous, crested barbets and red-eyed bulbuls.

From Mombo we transferred by air to Motshaba on the Khwai River at the extreme eastern tip of the delta. Here the huge belt of mopane woodland that stretches across so much of central and

southern Africa crowds close to the edge of the Okavango. The butterfly-shaped leaves of the mopane trees, light green in colour except when coloured by the autumn-like tints of the southern African winter, are browsed upon by many animals.

We found elephants to be very numerous around Motshaba, and were able to watch their browsing technique at close quarters on several occasions. A big bull, reaching high, grasps a branch nearly twenty feet above the ground. He twists his trunk around it carefully, like a man getting a good grip on a rope, then, after stepping back slightly to avoid the falling debris, he gives a sudden heave, and with a rending crash, off comes the whole branch. Many other mopane trees were broken off short or simply pushed over. This type of habitat modification, if not carried to excess, helps improve the food supply for other herbivores. Some of the broken trees will put out new growth and the fallen limbs will shelter other growing plants, thereby providing browse within reach of kudu, impala and other species.

Along the edge of the woodlands we saw sable and roan antelope, while on the flood plains beside the river, there were waterbuck, reedbuck and lechwe. The river



Top: An Okavango sunset.

Centre left: An aerial view of the delta.

Bottom left: Lechwe and elephant.

Near left: Yellow-billed storks at Shindi Island.

... Okavango

itself harboured both hippos and crocodiles.

From Motshaba we moved to Shindi Island, set in the great swamps and flood plains of the northern delta. Here we found the Okavango of our dreams. Hyphaene and *Phoenix reclinata* palms dotted the green landscape. Herds of lechwe sent the water flying as they splashed across the lagoons. Buffalo grazed along the shoreline and a fine male lion lay beside a termite mound, picking idly at the remains of a tsessebe kill. Wattled cranes waded out in the pools, soon to be joined by large flocks of open-billed storks, which came spiralling down after their long flight from some far distant feeding ground. Southern carmine bee-eaters circled like living jewels, and in the tall papyrus fronds dwelt coppery-tailed coucals, yellow-billed storks and several species of herons. Easily overlooked among the more colourful species were some of the real travellers of the planet earth, such as wood sandpipers and ruffs, newly arrived, perhaps, from the edge of the Arctic Circle, and now busily feeding in the Okavango shallows.

After leaving beautiful Shindi Island, our last stop in the Okavango region was at Ngamaseri, far upstream on the main river. At Ngamaseri, Pel's fishing owls roosted over our tents and the wild cry of the fish eagle echoed down the river. Giant kingfishers perched on the end of the boat jetty while pygmy geese paddled in the backwaters. In the main Okavango we tried our luck against the fighting tiger fish and bream, and later on visited a remote sandbank where African skimmers were nesting. It was a perfect ending to a great safari.

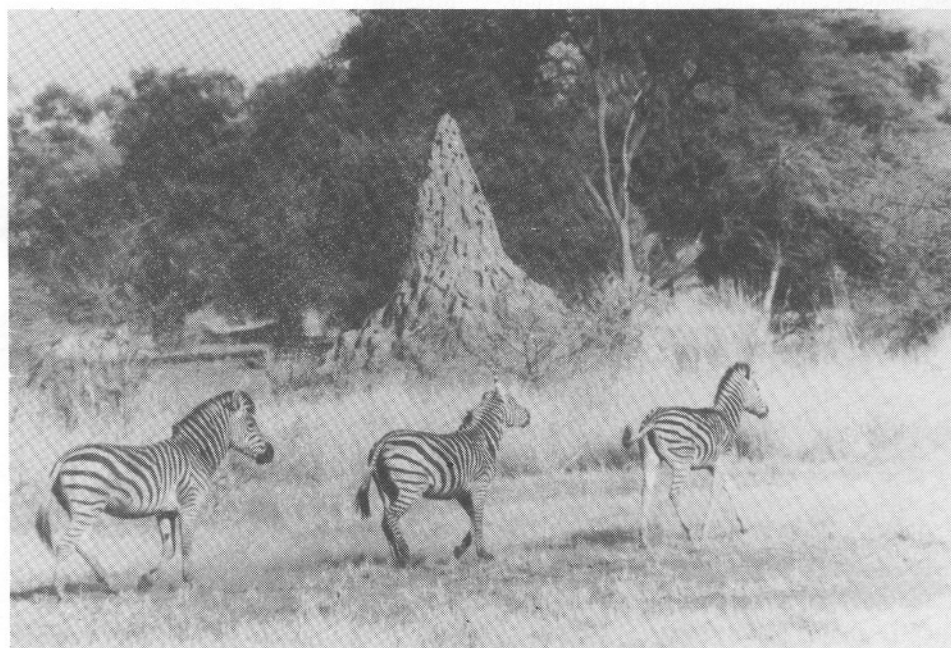
As the Okavango Delta lies outside the usual scope of East African safaris some brief pointers on how to get there may be in order. Maun is the best jump-off place for visits to the delta, and reliable safari operators are based there. Maun is easily reached by air from Gaborone, the capital of Botswana, or from Victoria Falls or Harare in Zimbabwe. There are good airline connections to these places from Nairobi and also from several European countries.

Regarding the climate, we found late August and early September to be excellent: warm, sunny days and crisp, cool nights. Other seasons might not be so pleasant. I understand that by late October the noon temperature is over 100° F on most days.

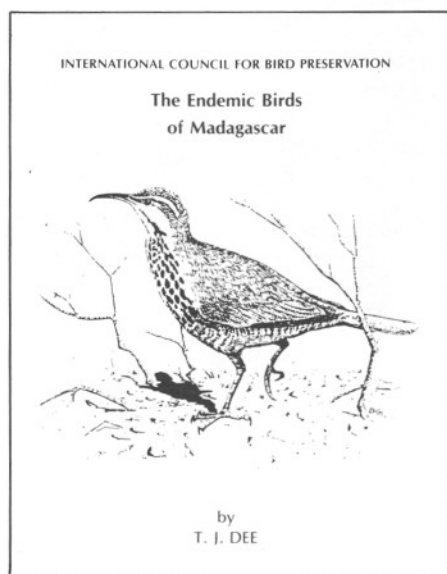
Please note that three of the places mentioned in this article — Shindi, Motshaba and Ngamaseri — are sometimes spelled differently. In some publications they are spelled Shinde, Machaba and Nxamaseri. I prefer to use the spelling which appears on the official map of the Okavango Delta, authorised by the Surveys and Lands Department of the Republic of Botswana.



An elephant browsing.



Chapman's race of Burchell's zebra.



The endemic birds of Madagascar

T.J. Dee

International Council for Bird Preservation, Cambridge, UK, 1986, £8

Madagascar has long been famous for the high levels of endemism in its bird life. It boasts five endemic families, one endemic subfamily, and 39 endemic genera. Of the 187 breeding species (excluding seabirds and introduced species), no less than 130 (70 per cent) are endemic at the species level, plus an additional 25 at the subspecies level. With the exception of one recent introduction, all but three resident passerine species are endemic.

This major publication from ICBP deals exclusively with the island's endemic birds, and is an excellent guide to the status, habitat and distribution of 130 endemic species found in Madagascar. All are given detailed species accounts, and while several are considered either endangered, vulnerable and rare, only one, the snail-eating coua, is finally considered extinct. The preservation of this magnificent avifauna should therefore be a matter of utmost concern before others follow a similar fate. Man has already been directly responsible for the clearing of the island's tropical forests, but with the help of a number of international conservation organisations, the Malagasy government is finally taking steps to save what is left of its unique flora and fauna.

As one reads through the species accounts, it is quickly apparent that the endemic bird life of the island is dominated by species that are largely or entirely confined to a forested habitat, in fact no less than 95 of the 130 species (75 per cent). These forests, like those of so many other parts of the tropics, are being cleared and burnt at an accelerating rate to make way for agriculture. There is little doubt that unless the government sets aside more areas of forest as nature reserves or national parks the endemic forest birds face ultimate extinction.

In addition to the comprehensive species accounts, maps of 51 species are included together with an excellent gazeteer and

bibliography, also a list of the non-endemic bird species occurring in Madagascar. Finally in Appendix III there is an extremely informative chapter dealing with species legislation in Madagascar and conservation measures both undertaken and proposed for many threatened species.

ICBP are to be congratulated on producing this major publication on an island that until recently has been sadly neglected. We can but hope that the Malagasy government will put a halt to the current onslaught on its very unique environment.

Don Turner

Kora: An Ecological Inventory of the Kora National Reserve, Kenya

Malcolm Coe and N. Mark Collins (Eds)
Royal Geographical Society, London, 1987

There are few areas in East Africa that have been described ecologically in as much detail as the Kora National Reserve in Kenya. This small reserve occupies some 1,700 sq km of the semi-arid *Acacia-Commiphora* bushland which covered the greater part of north-eastern Kenya. The fact that the Tana River forms its northern boundary over a distance of 70 km adds greatly to the diversity and interest of the plant and animal life of the reserve.

This highly compact book of 340 pages is mainly for naturalists and scientists. I would recommend it to students of geography and ecology as a source of reliable information on the region of the middle Tana River and also as an example of an integrated study of a semi-arid zone ecosystem. As its sub-title indicates, it is mainly an ecological inventory, providing a wide variety of factual and quantitative information on the environment of Kora, from the physical geography to the plant and animal life. However, the scope of the book goes further than inventory. In addition to the chapters on the physical environment, the descriptions of the flora and fauna (both terrestrial and aquatic), there is an account of the plant biomass and production values and a technical paper on the resins, gums and later of the plant species and their phytochemistry. Another chapter deals with the application of remote sensing techniques, mainly satellite imagery and aerial photography, in the interpretation of land form, soils, vegetation and ecological processes, and the assessment of the place of Kora in the wider setting of the geography of East Africa.

These studies were made by the Kora Research Project, a very successful joint venture of the National Museums of Kenya and the Royal Geographical Society of Britain, carried out between 1982 and 1985 by a team of 57 people (including those who provided administrative and logistic support), of whom nearly half are Kenyan citizens or residents. Thirty-three authors contributed to the book.

In the introduction, the editors say that the aim of the project was to provide an ecological description of the reserve for the Wildlife Conservation and Management Department, to enable them 'to plan and institute sound management practices and more particularly to provide a natural baseline against which human induced environmental changes can be measured'. The organisers of the project probably did not realise how urgently their survey would be needed.

In their concluding section, the editors remark that ground truth observations made in connection with NASA satellite studies, had confirmed that Kora is one of the least disturbed enclaves of *Acacia-Commiphora* bush in the Tana River Basin, providing a valuable baseline for future rangeland studies of the effects of anthropogenic disturbance. Several authors observe that such disturbance, caused by the (now illegal) presence of Somali pastoralists and their very numerous livestock, although dating back to well before the declaration of the reserve in 1973 has become serious in recent years. Areas of vegetation destruction and accelerated soil erosion are clearly associated with the greatest concentrations of domestic animals. Several authors draw attention to the need to exclude livestock from the reserve if it is to be protected from further degradation. If the Wildlife Conservation and Management Department takes action on this advice, this book and the project which gave rise to it, will have served its most important purpose.

The quality of production is adequate but not good. The direct printing of a great variety of typescripts from one chapter to another, can, perhaps, be accepted as means to reduce costs. Fifteen monochrome photographs potentially add to the interest of the book but unfortunately lack captions. While most naturalists will recognise the yellow-billed hornbill, the wax tube nest entrance of *Melipona* bees, the male gerenuk and the terrapin, I think that many would be puzzled by the photograph which faces page 156 – logs in a lake or leeches in a rock pool?

This is my only criticism of a valuable and useful book.

Hugh Lamprey

Primate Conservation in the Tropical Rain Forest

Clive W. Marsh and Russell A. Mittermeier (Eds)

Allan R. Liss, New York, 1987, £61

This book is the product of a conference held almost a decade ago at the Seventh Congress of the International Primatological Society in Bangalore, India. The editors note that there have been some achievements in primate conservation since that meeting, but they raise a loud cry that much

... books

more must be done. They have assembled a diverse group of contributors for the book, ranging from field primatologists to ecologists, and professional conservationists. As with most edited volumes, there is a lack of consistency between the chapters, but I should add quickly that there are several that will prove a useful resource for quite a while. Unfortunately, they may be buried in a volume that is unlikely to end up on the shelves of many professionals because of its price.

The volume is divided into three sections: 1) a review of the problems that face primates in the tropical rain forest; 2) a review of the remedies for some of the major problems outlined in the first section; and 3) a review of conservation efforts that should be carried out in the main rain forest countries. The first chapter, by Myers, reviews one of the major problems facing conservation efforts: the destruction of primary forest habitat. He notes that just 10 countries account for 80-85 per cent of the world's true rain forest. Clear conservation efforts must be directed toward those countries with considerable vigour. He outlines the major factors involved in the depletion of the forests. An extremely useful methodological chapter by Brockelman and Ali follows, on sampling techniques for estimating primate population densities. Clearly, accurate censusing of existing primate populations is essential for informed conservation planning. The next chapter, by Happel, Noss, and Marsh, is somewhat puzzling for they expend considerable energy on trying to identify factors that will predispose certain species to more rapid depletion than others. It comes as no surprise to me that a number of variables conspire to put some species more at risk than others (e.g. body size, gestation length, population density, home range size). This chapter will be important not for the conclusions that are drawn, but for the compilation of data provided in the appendix.

In the next chapter, co-authored by Marsh, Johns, and Ayers, one finds a review of the ways in which a forest can be disturbed. We are told that primary habitat can be disturbed by the removal of select plant products by traditional means, damage to the forest understorey, changes in the water table, changing patterns of human cultivation, logging, or large-scale clearing for agriculture or ranching. Marginal quality photographs of logging roads and banded langur remains do not contribute much to this chapter. Mittermeier surveys the available data on the prevalence of hunting on non-human primates. This is a useful chapter, illustrated with a variety of Mittermeier's photographs of the distressing uses that primates are put to. Kavanagh, Eudey and Mack report on trade in live primates in the next chapter. It is troubling that most of the data represented are now over five years out of date when the most up to date statistics are needed to make the most

informed decisions about where to focus conservation efforts.

McNeeley, Miller and Thorsell lead off the second section with a handbook (somewhat abridged for publication in this edited volume) of the practical techniques for managing tropical forests. Certainly something like this is useful but it should, perhaps, have been published as a handbook and widely distributed to conservationists in the front line. One fears that it will have little impact buried in this volume. In another chapter that has practical importance, but which will also probably be lost in the volume, Weber offers information on how indigenous people, particularly in the Zaire-Nile Divide, view the subjects of the volume. He devises a practical plan for enhancing popular support for conservation efforts and offers useful practical advice. In one of the most useful chapters in the book, Foote, Seal, and Flesness, provide data on the minimum population size necessary to maintain viable captive populations of endangered primates.

In the final section of the book, a stellar group of field primatologists offer specific plans and areas for immediate conservation efforts in the Neotropics (Mittermeier), Africa (Oates, Gartlan, and Struhsaker), Madagascar (Richard and Sussman), and Asia (Marsh). This section is useful for a brief overview it gives of particularly critical areas, but the longer and specific 'Action Plans' for each area will provide the detail necessary for implementation.

Overall, as noted in the opening paragraph, the quality of these papers is quite variable and one wonders if some would not have been better off published elsewhere. On the technical side, the volume is up to the usual high standards of a Liss publication, but one would have wished for an author as well as a subject index. This volume might have been better if it had been trimmed down and published as a paperback at a price affordable to the larger audience that would find it extremely useful, namely the people in the countries under discussion.

E.O. Smith

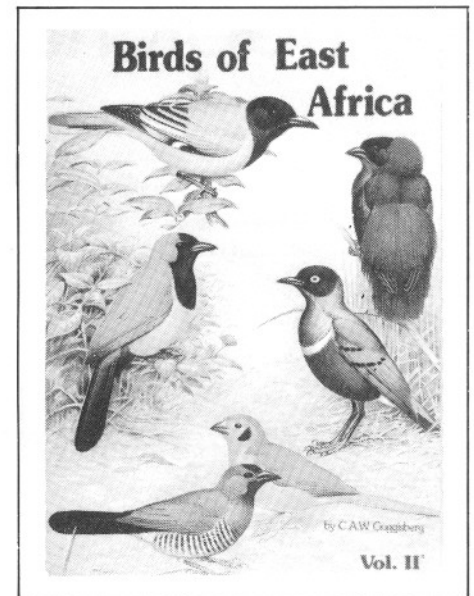
Birds of East Africa Vol. II

C.A.W. Guggisberg

Mt. Kenya Sundries Ltd, Nairobi, 1986, Ksh 200

This second volume covering the passerine species is similar in format to Vol. I, which was published in 1985. Both had been completed in manuscript before the author died in 1980. That they have eventually been published is due to the devoted work of the author's widow, and the illustrator Malcolm Ellis.

Sadly, however, so much time has passed since the books were written that they are now indisputably out of date. More books have been produced in the interim, and are being produced all the time. The serious birder now looks to the numbering and taxonomic sequence of species as set out by Britton in his *Birds of East Africa*, having prior to that used Mackworth-Praed and



Grant's *Birds of eastern and north eastern Africa*. Dr Guggisberg has applied his own numbers, but only for the species which are illustrated, and the order is not that which people have come to accept. It is unfortunate that he did not have access to Britton's book, nor even to the newer Williams guide, *A field guide to the birds of East Africa* – both of which were published in 1980, and which incorporated new names for many species. Reichenow's weaver thus became Baglafaecht weaver, chin-spot flycatcher became chin-spot batis, bleating bush warbler became grey-backed camaroptera, and purple indigobird became red-billed firefinch indigobird. Many of the scientific names were also changed. Thus for a reader already in possession of any of the more recent books, considerable confusion may be expected.

The descriptions themselves contain very little 'new' information and seem to rely heavily on Mackworth-Praed and Grant. For most species the nest and eggs are described, but there is no mention of the times of year when breeding may be expected to occur.

The illustrations are a disappointment. The only redeeming point which might be made is it is useful to have the two puffbacks and the two similar cuckoo shrikes together, so that a comparison can be made. The gremlins got into the starlings with the violet-backed ending up a rich toffee colour, a caption missing on page 144, and a spelling mistake on page 146.

The collector of bird books may wish to add this to his library, but it will be of little use to the birdwatcher in the field.

Jean Hartley

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Stock at Hurran Hura (top); the five-man well (right); dawn on lava rocks north of Kinu Soga (bottom).

Nothing new in the North

Photos and story by Fiona Alexander

Will there be anything new to see on yet another walk through Kenya's semi-desert wilderness?

Ere I departed Nairobi for my most recent walk in the north, friends had said 'No doubt you will write about it, as usual'. Then, I had every such intention. I believed there would be much to write of — remote Lake Stefanie, fossil-rich, beautiful Buluk, and the Tula Bor lugga, little-explored and difficult of access.

I planned carefully — after twenty-five years Stefanie (or more properly 'Chaw

Bahir') was within my grasp. I flew low along the route — the great lake lay shining in its barren declivity — until I had perforce to turn southward and climb away to clear Sabarei, that farthest-flung of Kenya's border outposts. As I flew I recalled that night when I lay under the stars on a lugga near Buluk, and heard the lonely fluting of flamingo overhead. They were passing on their night-flight from soda-laden Stefanie

to cleanse their plumage in the fresh water of the Omo's estuary. There is for me only one other avian call more haunting than the flamingoes' night chorus in flight – the desolate cry of a skein of northern geese dropping into some cold Scottish meadow on a winter's day.

But my anticipations were not to be realised – at Dukana Wells 'red tape' put paid to Stefanie and all that.

In the end, I 'merely' walked from North Horr to Koobi Fora and back again. There were few paths I had not trodden before. I thought – well, here we are, this is what we have to do, I shall have no interesting experiences, there will certainly be nothing new to write about . . .

We came into the great Gabbra well of Hurran Hurra – a biblical scene, a time-laden image. All around the well the animals from distant manyattas are grouped, patiently awaiting their turn to come into the water. The mid-day, still heat shimmers and scorches without pity, the dust stirred by hundreds of hooves settles whitely on spectacles, binoculars and camera lenses. The flocks of sheep, goats, camels and lean cattle await the whistle, the familiar call from their own herdsman to move up in the queue, a few yards closer to the water.

Hurran Hurra is a five-man well. The nethermost man stands with his feet on the bottom but up to the chest in water. Above him four companions find precarious foothold on the ledges of the walls, and the giraffe-skin buckets are thus tossed up from hand to hand to the topmost individual, who slings the water into the man-made trough at the surface. After many years of wandering among Kenya's northern watering places, I have participated in this scene at most of the significant wells of the Gabbra and the Rendille and it never ceases to enthral. Along with the physical activity involved in bringing the water to the surface, the tribesfolk evoke a richness of musical experience. Immensely rhythmic, sonorous madrigals accompany a water-drawing operation, and are necessary for unbroken, co-ordinated movement: dip, draw, hurl up from hand to hand, tip into the trough and the first bucket then throw down the ladder of hands as the next is propelled upwards – the beat is measured by the mesmeric roundelay. It is a ravishment of the senses and emotions, an intoxication. Consider also the hundreds of people and their thousands of animals who are totally dependant upon the water in this single well, this small cavity in the earth, and who must trek every few days across many miles under a stark sun, and a perspective is accepted, a humbling of certain values.

At the well's lip a dozen rather nondescript birds flutter and then dip away down to the water-puddles on the shadowed ledges. I look and say to myself oh yes, cinnamon-breasted rock bunting – then relook: no they are the rarer, duller house bunting. It is apparent that they cannot drink the well's water unless there is human activity spilling pools on to the ledges – but I am of the opinion that house



The polythene water trough.

buntings are able to survive with very little water, their habitat being the most remote and inhospitable lava fields, and this joyous fluttering among the water droplets at the well is one of life's bonuses!

A couple of weeks later we dig our own well. The camels need to water, we have been walking far and fast for many days. We come into a wide grey-gravel lugga and stop beneath the long plateau of Sibiloi. As we go about the tasks of camp, I realise that the melody drifting down the lugga is a 'water song' – our Gabbra are excavating their very own well and have arrived at water. But it is deep and they wonder how they can satisfy all 26 camels. So now it is our turn, we can contribute a little modern-day Heath Robinson ingenuity. Amongst our equipment is a vast blue polythene groundsheet. The Young Explorers and the Gabbra set to, and dig a long trench adjacent to the new well. Then we line it with the colourful groundsheet, weighted down with rocks along the rim. The Gabbra, familiar with the moods of their camels, further soften the scene with bushy green branches. The sweet pure water is then slung up from our two-man well into the home-made trough, accompanied by sonorous, worshipping water chants. The

afternoon slips into dusk, and the bright-blue synthetic water-hole is full. The camels form into groups at intervals along the lugga and are called in orderly fashion – the first arrivals are wary and require cajoling, singing and whistling; but soon suspicion is overcome and they drink. Perhaps it will become '*de rigueur*' to carry a polythene sheet if you are an itinerant nomad with camels?

These were two happenings along the course of a month's march which I had anticipated would probably be boring. In between the colourful, interesting events the long hot miles were plodded by, the loads fell off now and then, the blisters burned, the interminable gales blew, the night-skulking lions were repelled. And each day a fresh canvas is painted – now I am coming into Kinu Soga for the third time and look how this dawn sun is investing every lava rock and the solitary pinnacle with a gilded stark outline! And now here is this small gnarled grey bush amazingly adorned with roseate petals – a desert rose. And later, on the wide sand river-course of Sirrimu the stunted doum palms crash and buffet through the night, making sleep impossible. And Galatas, that well-known spring, has completely changed character since last I visited the palm-protected source; men and cement have done away with its romanticism. The piping of the rosy-patched shrike is often around us, the shadow of the ubiquitous brown-necked raven lurks with malevolence, there is usually a bateleur soaring high in the white light, fleet hares spring among the desiccated scrub and twice the slim saw-scaled viper slips softly and shyly from our threatening footsteps.

I have learned – yet again – that it is not possible to walk through these northern wildernesses with overfamiliarity, or in boredom. It can never be tedious, there will always be a change of season, of plumage, of foliage; the lion's call will bear an altered cadence, and the sun will strike a different ray on to a rockface or the golden desert sand . . .



In her own words 'besotted' by East Africa's physical grandeur, Fiona Alexander has for many years pursued an almost fanatic involvement with Kenya's northern semi-desert wilderness. As a professional pilot, she constantly flies over it, and as often as possible in her leisure time she walks in it.



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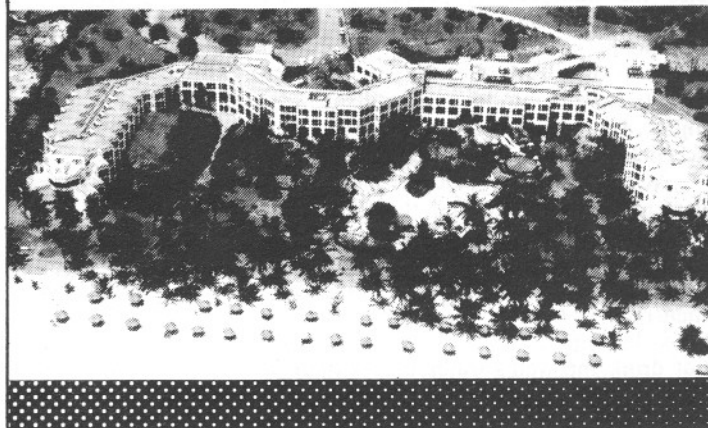
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KENYA

Sykes' monkeys at Mountain Lodge

In a letter to the Editor, published in the September/October 1986 issue of *Swara*, Mervyn Carnelly of Naivasha wondered if the deformities seen among Sykes' monkeys at Mountain Lodge – a large number of them are missing a tail or a limb – were caused by teratogens in the food eaten by their mothers when they were pregnant.

Dr Rob Eley and Dr Ross Tarara of the Institute of Primate Research (see *Swara*, January/February 1987) replied that for a number of reasons this was unlikely, and that it was much more probable that the amputations had been caused by electrocution from high-tension wires. They said that the IPR, together with the Wildlife Conservation and Management Department and the Kenya Power and Lighting Company were evaluating the problem, and that they would report back as soon as they had found a solution.

Dr Eley visited Mountain Lodge in August last year and concluded that, although no electrocutions had ever been witnessed, the monkeys' disfigurements were consistent with this being the cause. This hypothesis was strengthened by the fact that a short stretch of cable between the transformer and the lodge was uninsulated and the monkeys were often seen to climb on the transformer.

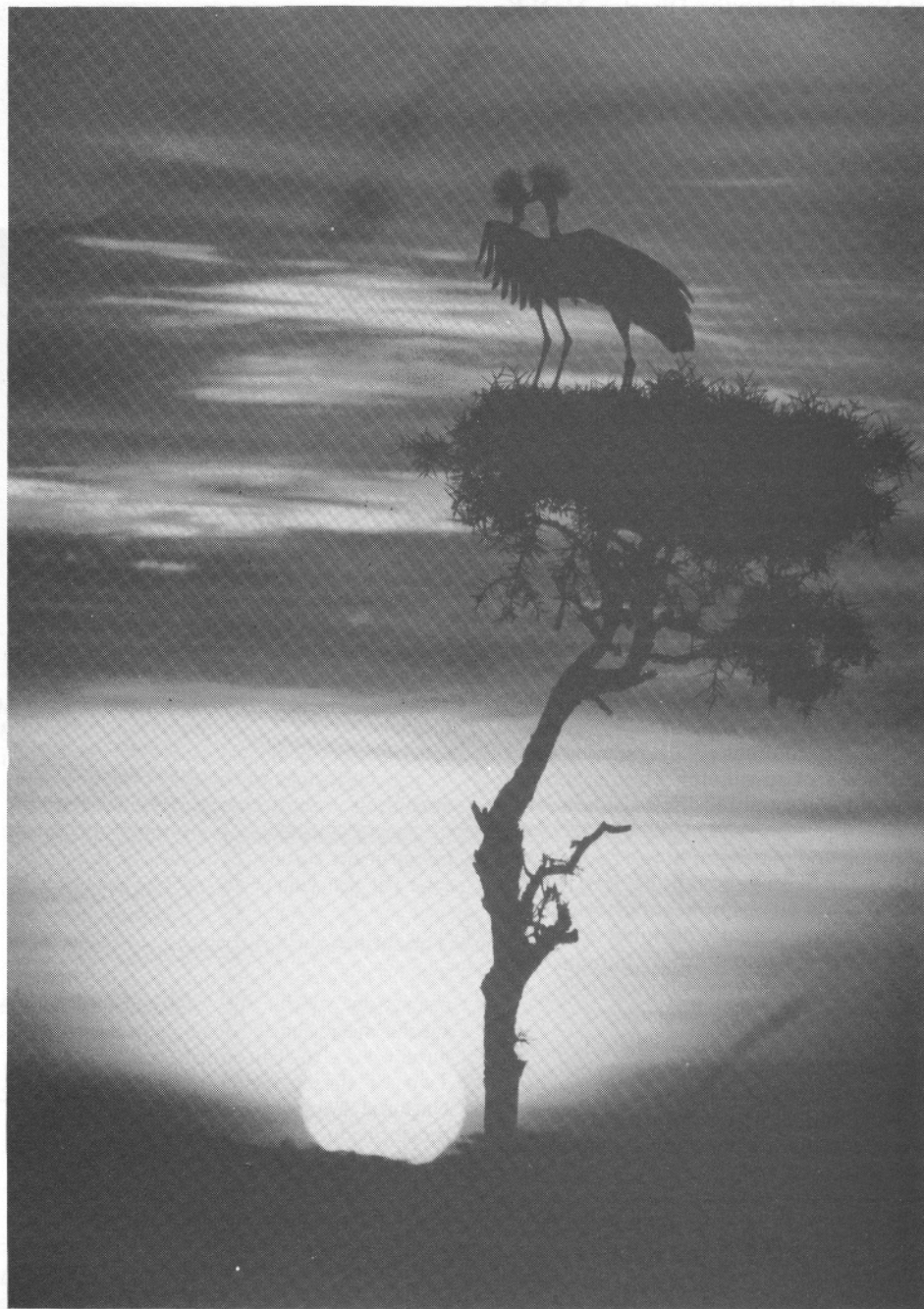
After Dr Eley had contacted them, the Kenya Power and Lighting Company also visited the lodge to inspect the cables and transformer. They now propose to install a barbed-wire anti-climbing guard around the transformer to prevent the monkeys from reaching the structure either by jumping from a nearby tree or by climbing the stay wire from ground level.

Once the KPLC has finished the work the IPR will monitor the situation to see how effective these measures are in preventing the occurrence of any further injuries among this group of monkeys. Both the IPR and the KPLC are to be congratulated for all they have done to bring about what we hope will be a happy end to the saga.

The Tana Delta

In October 1987 I revisited the Tana Delta area. On the river trip between Samikaro village and the southern mouth of the Tana I counted approximately 80 hippo, 40 crocodiles and 35 waterbuck, plus a few topi, yellow baboons and vervet monkeys. It appears that the hippo population is healthy, this latest count being significantly higher than on my previous visits. Crocodiles and other species seemed to number about the same as they did in 1986.

Bird-life was again very interesting,



David Breed's photo of two crowned cranes displaying at dawn in Nairobi National Park, which was runner up in the 'Dawn to Dusk' category of the Wildlife Photographer of the Year 1987 competition (see story overleaf).

many palaeartic migrants having arrived. Among others I noted Mongolian sand plovers, Terek sand pipers, bar-tailed godwits, Caspian terns and lesser black-backed gulls.

With its diversity of habitats – dunes, beaches, flood plains, mangrove swamps – this area would make an unusual and valuable addition to Kenya's national parks system. In view of the large-scale rice schemes planned for the lower Tana, it is surely becoming more important than ever before to protect some of the region's remaining wilderness habitat. Apart from a few wandering fishermen, the delta is

completely uninhabited by people, so the creation of a national park now would cause little or no human hardship. It would, however, ensure the survival of an area which is unique in Kenya.

Joe Cheffings

Nature writers' award

Last year the magazine *BBC Wildlife* ran a competition for nature writers. The winner in the amateur writers' category was Mrs Sanda Ashe of Watamu, Kenya. Mrs Ashe won £400 and a special trophy – a wood carving of a tree creeper – which was presented to her by the East African Wild

Life Society's Executive Director, Mr N.K. arap Rotich.

Mrs Ashe, with her husband James (who has written articles on snakes for *Swara*), runs a snake farm in Watamu. It was established primarily as a private study collection but is also open to the public so that both local residents and overseas visitors can learn about the reptiles that live in the coastal region.

TANZANIA

Wildlife Photographer of the Year

More than 10,000 photographs poured into London's Natural History Museum from 40 different countries, providing the largest entry ever for last year's Wildlife Photographer of the Year competition, sponsored by the Prudential insurance company.

The competition has 14 different categories, but the winner for the best photograph overall was Jonathan Scott, the British artist, writer and photographer who spends much of his time in Kenya and who will be very familiar to all *Swara* readers. Jonathan's prize-winning photograph was of a wild dog immobilising a wildebeest by biting on its upper lip. Jonathan has been following and photographing a pack of wild dogs in the Serengeti National Park as part of his work on a book about migration. Wild dogs have greatly declined in number due to persecution from humans and because of their vulnerability to disease (see the appeal for information in last year's September/October issue of *Swara*). They are now thought to be the most endangered predator in the Serengeti.

Jonathan has written several articles for *Swara* about wild dogs and leopards, and



The photograph that made Jonathan Scott 'Wildlife Photographer of the Year 1987'.

last year very generously gave the magazine a large collection of his slides for us to use absolutely free of charge. Regular readers of *Swara* will have seen many of these magnificent colour photos in the magazine over the last year.

Tanzanian guidebooks

The Tanzania National Parks, in co-operation with the African Wildlife Foundation, have produced three new guidebooks to Tanzania's national parks. Two of these, for Arusha and Mikumi National Parks, are up-dated editions of those produced in the early 1970s, but the one on Kilimanjaro is entirely new. A review of the Kilimanjaro book will appear in the next issue of *Swara*.

The guidebooks are full of fascinating and useful information about the animals and plants found in each park and what you are likely to see where. They are all available in Tanzania at US\$3 for visitors and Tsh 210 for local residents. The revenue raised from the books is going towards conservation education projects in Tanzania and the funding of future publications.

Ivory auctioned in Belgium

Almost ten tonnes of ivory from Tanzania, seized in Antwerp, Belgium in January 1986 (see *Swara*, November/December 1986), was auctioned there in September last year.

The Belgian Management Authority, in close co-operation with the CITES (UN Convention on Trade in Endangered Species) Ivory Control Unit, invited members of the Ivory Importers Association to place bids for the ivory, which was to

be auctioned as one lot. Eight written applications, of which only five were acceptable, were received from ivory dealers in Japan, Hong Kong and Europe.

The successful bidder was a Japanese company which bid US\$147 a kg, which for the complete consignment totalled US\$409,000.

The customs agency responsible for the transit of the ivory through Belgium is to be prosecuted by the Belgian Customs authorities, who state that both CITES and customs tax regulations were violated.

Traffic Bulletin

WIDER HORIZONS

New Director General for IUCN

Dr Martin Holdgate has been appointed the next Director General of the largest scientific conservation organisation in the world.

Dr Holdgate brings to the International Union for Conservation of Nature and Natural Resources (IUCN) scientific expertise and administrative experience drawn from more than 25 years of active participation in UK and international environmental affairs. A field biologist by training, he has also participated widely in the preparation of conservation legislation.

A graduate of Cambridge University with a doctorate in insect physiology, Dr Holdgate, 56, has been involved in field research in Antarctica, South America and the remote islands of the South Atlantic Ocean. On the international scene, he has also been closely associated with the United



Nations Environment Programme since its inception in 1974 and was President of the UNEP Governing Council in 1983-4.

Speaking of his new appointment, Dr. Holdgate said:

The need for action to conserve our planet has never been greater. Among our five billion fellow human beings there are far too many who live in squalor and without hope. To give them hope, we need development that can be sustained — and this means caring for the soils, airs, waters and life of the earth on which we all depend. IUCN is uniquely placed to harness ecological knowledge and provide plans that will help Governments and international agencies to bring people into balance with their environment in a world that is still beautiful and rich in wildlife. I look forward to this challenge immensely.

Dr Holdgate will take up his appointment in April 1988, following the General Assembly of IUCN to be held in San José, Costa Rica, 1-10 February.



the past few months, the country has been patrolling its borders with a WWF-funded helicopter in order to protect the world's largest viable black rhino population from heavily-armed poachers. The rhinos, numbering around 500, are under siege by poachers crossing the frontier from Zambia. The helicopter is also being used to translocate rhinos to protected areas. By September last year, at least 70 rhinos had been moved to safety.

WWF News

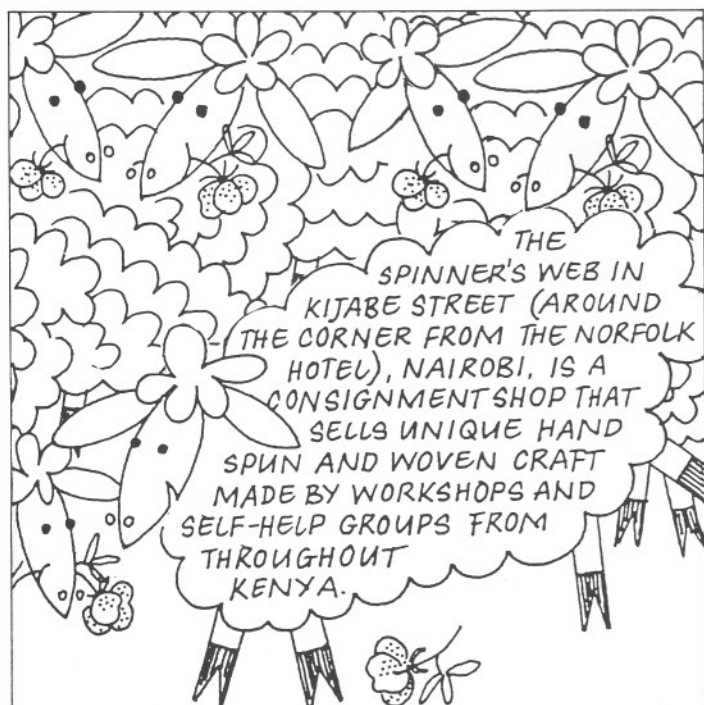
16-19 May 1988, at College Station, Texas, USA, followed by a two-day field trip. The meeting is a follow-up to a 1971 symposium held in Calgary, Canada, on the same theme. The May conference is being organised as a tribute to Dr Fritz Walther, now retired, whose life's work as well as professional devotion has centred on ungulates. Papers and poster presentations on any aspect of ungulate behaviour and its relation to management are invited. All inquiries should be sent to Dr Elizabeth Cary Mungall, 342 Double Tree Drive, Lewisville, Texas 75067, USA.

Rhinos in Zimbabwe

Stringent measures are being taken to end the rhino poaching crisis in Zimbabwe. For

Ungulate conference

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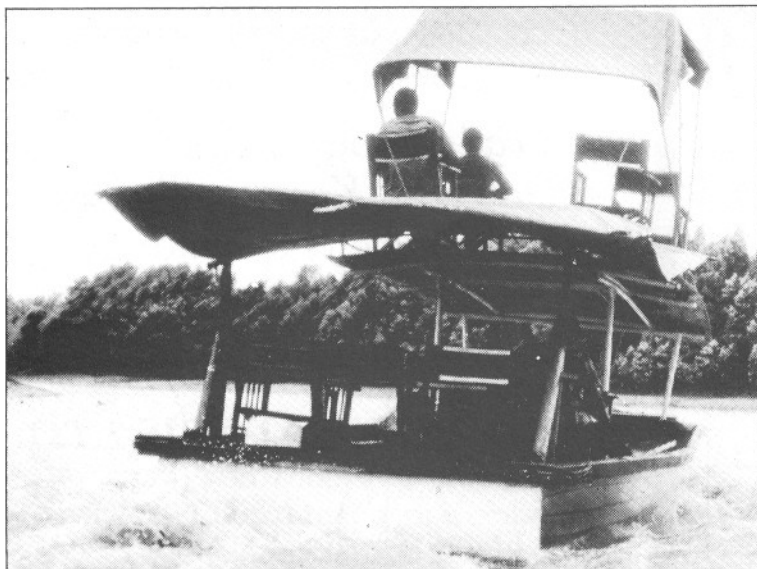
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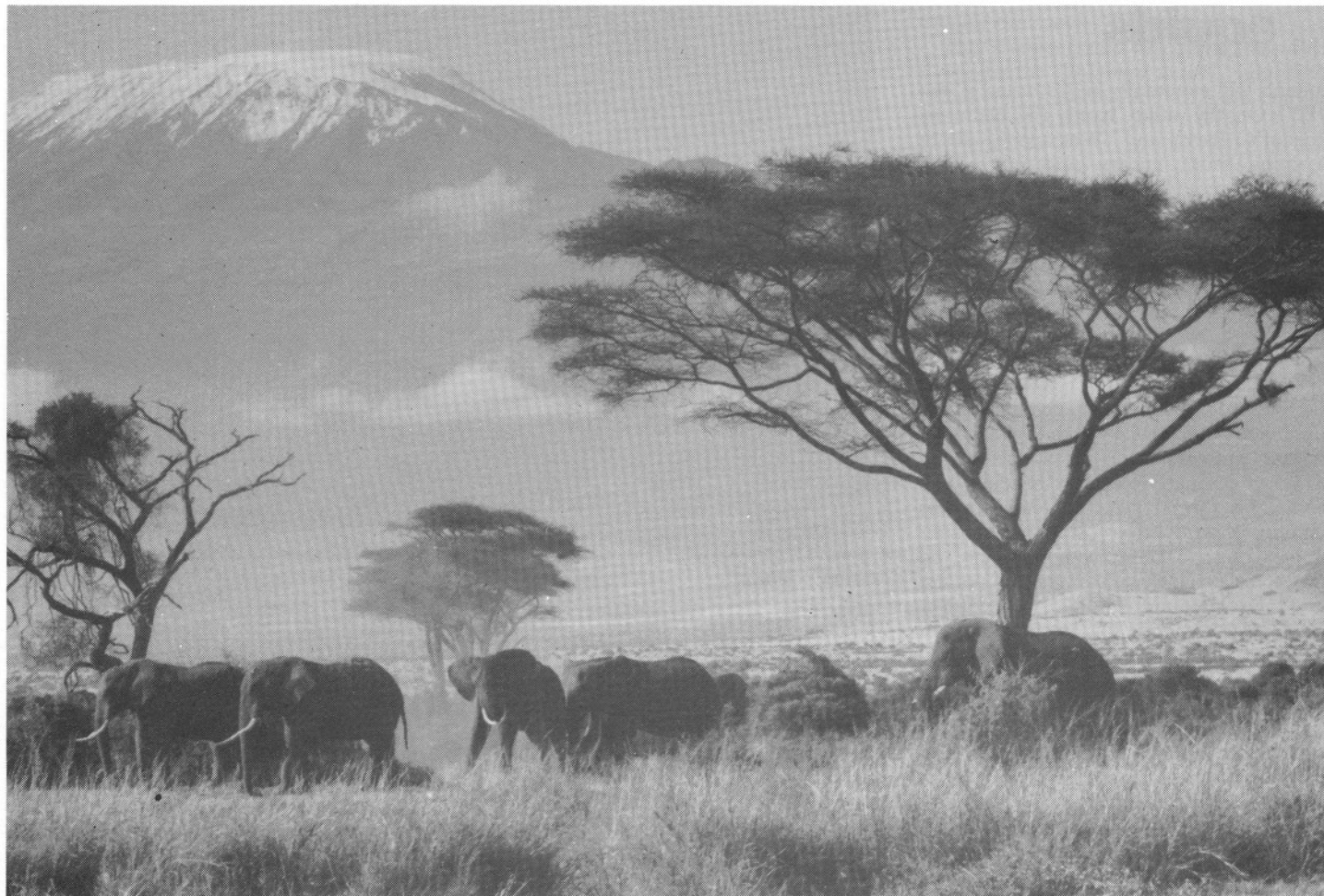
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Twenty-five years ago 'conservation' in East Africa mainly meant ways of containing large mammals in national parks.

The conservation of rare equids in Canyon Colorado

by Chrysee and Esmond Bradley Martin

The establishment of private sanctuaries to help save endangered species of wild animals is the subject of some controversy. Drawing on the experience of a sanctuary in New Mexico, the authors argue that, given the right conditions, these sanctuaries can play an invaluable role.

Ideally, of course, wildlife should be properly managed *in situ*. The very notion of translocating animals to private sanctuaries for the purpose of ensuring the propagation of various species would have sounded absurd a quarter of a century ago in East Africa when 'conservation' here mainly meant ways of containing large mammals in national parks and reserves — and, in some of these, how best to *reduce* the numbers of animals in them. In Uganda's Murchison Park, 4,000 hippos had to be culled, and in Kenya's Tsavo Park a major controversy raged over the excess population of elephants until 10,000 of them died in a drought during 1971.

Today, however, a schoolchild in Nairobi would probably tell you that the major problem of conservation is the lack of protection to wildlife and that ways must be found to replenish the dwindling numbers. That, in fact, is now the aim of most conservationists, and the questions raised concern the pros and cons of how to achieve

this goal. Bolstering anti-poaching measures for wildlife *in situ* has been the standard, accepted procedure; but the additional vehicles, aircraft, radios, and the like, have not always stemmed the loss of Africa's most valuable animals in many national parks and reserves. While illicit hunting is mainly responsible, a close second is the high human population growth: much of the African 'bush' where large mammals flourished until relatively recently has become a no-man's land for wildlife. Cultivation of crops has spread even to the least arable regions. Ominous, also, has been the collapse of governments and economies in several African countries, and where there is no law and order to protect human life there certainly cannot be protection for animals.

The second, and another traditional means of conservation, especially for rare Asian species, has been to encourage captive breeding in zoos, with the oft repeated codicil that the offspring of such

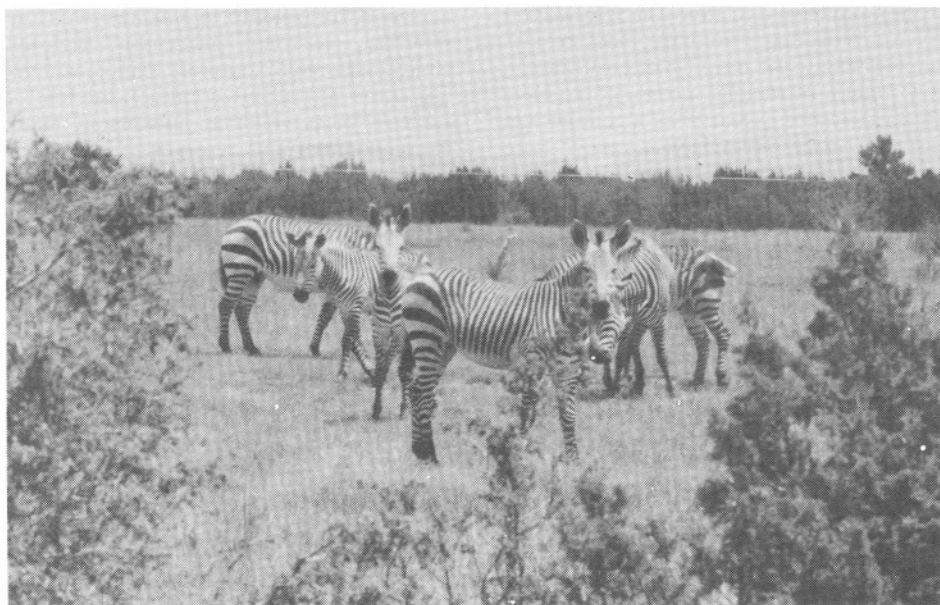
... equids

animals will eventually be 'returned to the wild'. On the other hand, the claim by Regent's Park and Whipsnade about devoting more energy and income to 'scientific research' than any other zoo organisation is not impressive when one reads in Elspeth Huxley's *Whipsnade* that an average of 1,100 postmortems are annually performed on the 4,600 patients. Zoos are generally in bad repute these days. With considerable public support, groups such as Zoo Check are devoted to closing them down.

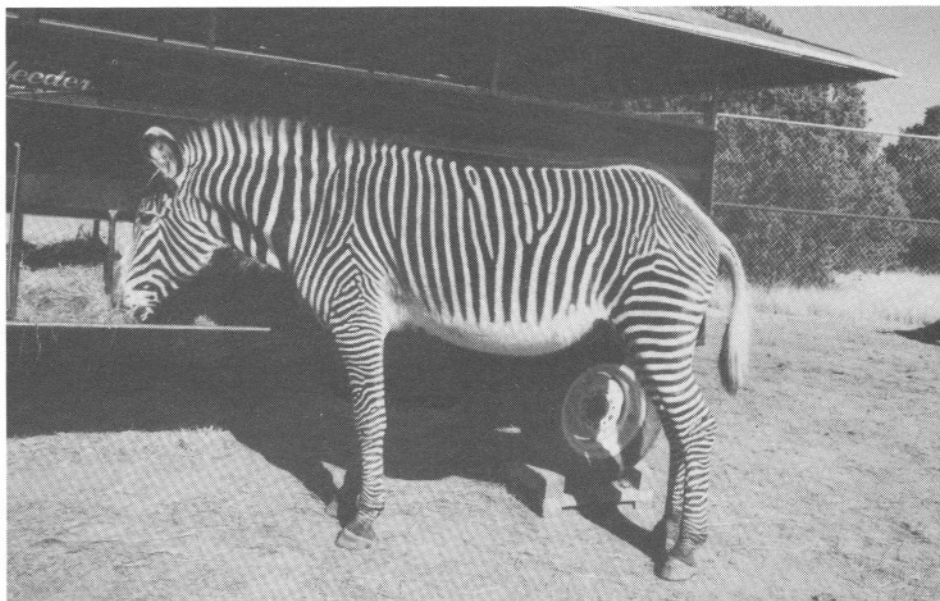
The third possibility for replenishing the numbers of wild species is that of allowing private individuals to manage various arrays of compatible wildlife on their own land. This format has also reaped a fair amount of criticism — some of it sour grapes: 'Just because someone has the money, he shouldn't be permitted to acquire land and impound wildlife'. Of course, some of the criticism is justified, in particular that directed towards the 'Rhinos for Texas' fiasco in which three out of five animals died within a year of their arrival, but the rarity of the animals now chosen for intercontinental translocation has given impetus to deciding with care where they will be permitted to go. Here in Kenya, we are greatly indebted to those individuals who have set up private sanctuaries on their land where increased breeding has been spectacular.

The people who undertake the financial responsibility of preserving endangered species of wildlife are soliciting the best expertise in wildlife management, and are able to recruit it. Avoiding the strictures of bureaucracy, they can offer challenging positions to qualified and motivated wildlife scientists and veterinarians. In America, they may hire professionals from practically anywhere in the world on permanent contracts. Without fanfare, a professionalism has evolved in the management of private reserves for wildlife that

Hartmann's mountain zebra.



William Gruenerwald



William Gruenerwald

Grevy's zebra.

has resulted in some notable successes.

Among those abroad can be numbered the Canyon Colorado Equid Sanctuary in the United States, which we visited in November 1986, shortly after the African Rhino Workshop meeting in Cincinnati, Ohio. Located in the semi-arid plains of north-eastern New Mexico, it was founded by William Gruenerwald, a retired geologist. He noted that his interest in wildlife came naturally at an early age, observing the seasonal migration of waterfowl along the flyways of the central Illinois river system near his home in Chicago. Visits to city zoos and natural history museums broadened his appreciation of wildlife from other continents and instilled a lifelong desire to observe these fascinating creatures in their indigenous settings.

Later, Mr Gruenerwald's professional work involved assignments in Africa, South America, the Philippine Islands, Malaya, China and Tibet. Observations of wildlife were always a rewarding adjunct to his travels. However, some situations turned

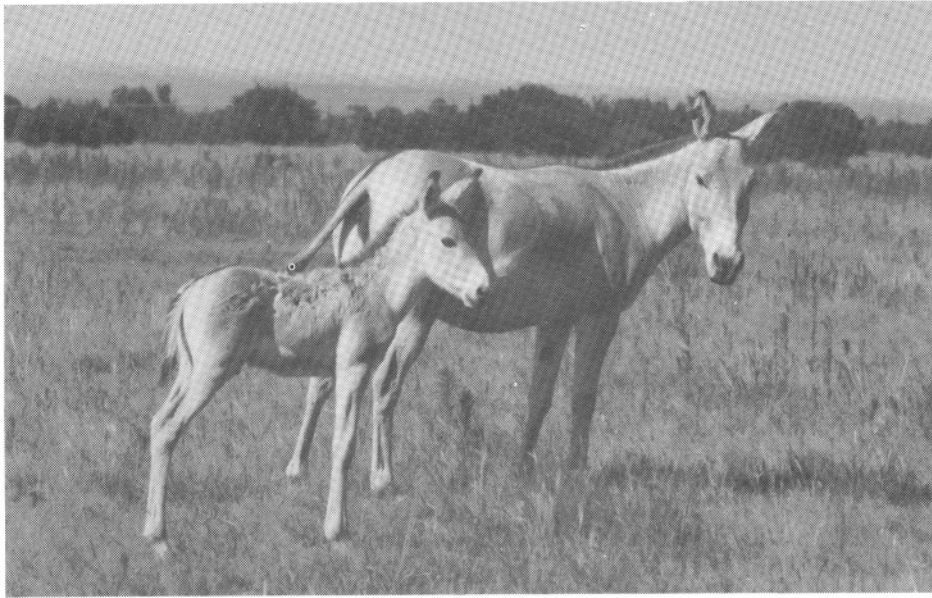
out to be far from idyllic.

During the Japanese bombing of Singapore, he once had to jump into an open sewer for protection 'moments before the ground began to quake and anti-personnel bomb fragments began to sing overhead'. Then, suddenly, he was hit. Looking at his blood-splattered shirt, he thought it must have been caused by a splinter of shrapnel. Instead, it was the body of a pigeon that had flown into him, decapitated in flight by the shrapnel. Recalling the incident now, Mr Gruenerwald says, 'It seems to underscore the dilemma of wild creatures, forever unable to escape the crossfire of human conflict and events'.

Towards the end of World War II, when he was carrying out a mineral survey in western China and Tibet, he went to Kangting (Tatsienlu), a market town where Chinese tea carriers from Szechuan province transferred their cargo to Tibetan yak caravans. The main street was a hubbub of trade with all the wares of China and Tibet for sale and barter. In front of several shops were piles of animal pelts — Siberian tiger, golden monkey, snow leopard and panda. Perilously rare then, today, all these are in danger of extinction.

On a geological reconnaissance assignment in Equatorial Africa, he shared a vehicle with an animal collector who was heading in the same general direction. Stopping in a lowland gorilla area, the collector invited him to watch the capture operations. It was an unforgettable, revolting experience. Having located a troop of gorillas, his assistants surrounded them with strong nets. Frightened by the sounds of drums, shouting and clamour, the gorillas moved closer together. Through the nets the adults were speared or clubbed to death in order to take two youngsters.

Weeks later, he saw the gorilla orphans in Brazzaville. One subsequently died of worm infestations, the other from melancholic depression. Another animal trapper operating in the same general area managed to collect several gorillas and ship them to the United States — three of which



William Gruenerwald

Kulan.

ended up in small cages in New York City's Central Park Zoo.

After many years abroad, Mr Gruenerwald returned to the United States to pursue his career. Nevertheless, he continued his interest in global wildlife issues, particularly those pertaining to regions of the world he had visited. Inevitably he would make a personal commitment to wildlife preservation. He supported appeals to 'Save the Whale . . . Save the Tiger . . . Save the Gorilla'. Then came his idea to create a private sanctuary. It was the uncertain future of some zebra subspecies that led him to choose endangered equids as his special interest for the project.

What he wanted foremost was 'space' for the animals, believing this would enable them to adhere more naturally to their social structures than is possible within the confines of zoos, and would encourage breeding. The isolated cattle ranch he operated near the town of Wagon Mound, New Mexico, provided a suitable habitat for initiating his plans and, in the summer of 1978, he assigned 26 sq km of its area to the Canyon Colorado Equid Sanctuary.

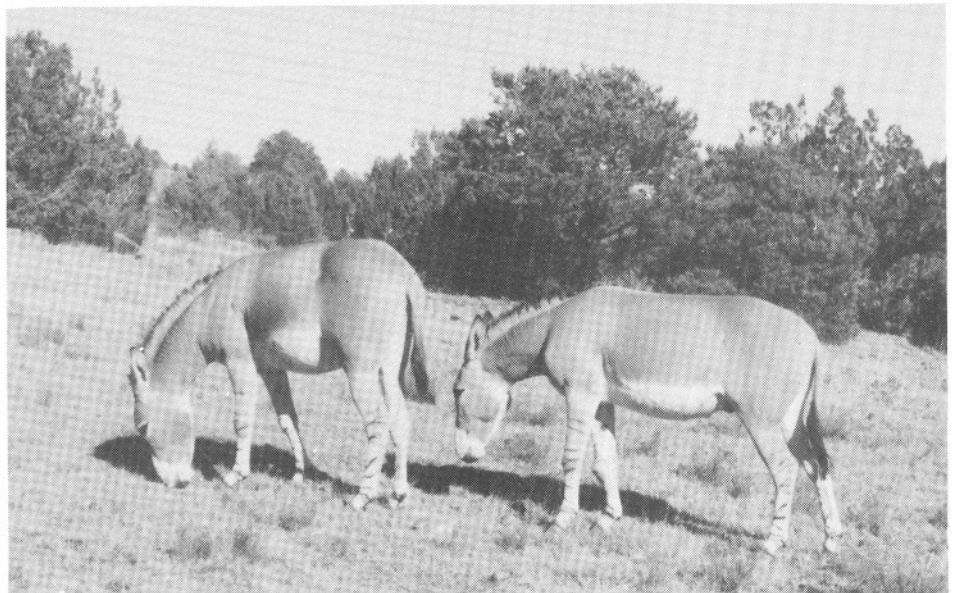
The landscape looks somewhat similar to northern Kenya; it is semi-arid, receiving about 35 cm of precipitation annually. The high plains and broad rolling hills covered with gramma grass are bordered on the east side of the property by the steeply eroded canyon of the Canadian River. It is from one of its short tributary canyons, referred to as Canyon Colorado, that the sanctuary has taken its name. Historically, the region is part of the 'Old West' heritage of America. Wheel ruts made by covered wagons of pioneers travelling along the Santa Fe Trail leading to California can still be seen here. In the not so distant past, there were vast herds of buffalo and antelope and there is fossil evidence suggesting an earlier presence of the ancestral Grevy's zebra two to three million years ago.

As Mr Gruenerwald explained, the first stage of the operation was to fence the assigned perimeter of the parkland. The area was surveyed and staked, post holes

were drilled on 3 m centres, and both 2.5 m high V-mesh and chain link were stretched on 7 cm posts cemented almost a metre deep in the ground. Because of the resistant near-surface sandstone formations, a compressor-driven rotary rock drill was needed to accomplish this task!

Along naturally sheltered enclaves, heated barns were constructed with adjoining paddocks where the animals could be kept in adverse weather conditions. In August 1978, a group of eight Grevy's zebra, obtained from a safari park in Atlanta, Georgia, was released in the newly-formed compound. Now limited to northern Kenya and semi-desert areas of southern Ethiopia and Somalia, these spectacularly striped equids are the rarest zebra today. Those that remain are severely threatened by poachers who have easy access to modern rifles due to the armed conflict between Somalia and Ethiopia since the early 1970s. When we visited Canyon Colorado, the number of Grevy's had reached 31, the largest single population

Somali wild ass.



William Gruenerwald

outside the species' homelands.

The second group of equids was introduced to the sanctuary in 1982 and 1983. These were wild-caught Hartmann's mountain zebra from South-West Africa. Estimated at 20,000 in the 1960s, no one knows how many remain now. Heavier set than Grevy's, these zebra are characterised by broad striping, a prominent grid pattern over the croup and a dewlap appendage on the neck. Their rapid hoof growth, suited for their natural rocky environment, has frustrated many zoo keepers, who must immobilise their specimens in order to keep their hooves trimmed. Consequently, there are few of these animals in captive environments. To eliminate the hoof problem, countless lorryloads of crushed rock were brought to the sanctuary and spread around the shelters built for the Hartmann's.

At the headquarters — consisting of offices, a computer room, a very modern clinic and recovery stalls — laboratory equipment has recently been installed which will allow for Hartmann's zebra embryo transfers into domestic horse mares. However, the Canyon Colorado wild-caught Hartmann's have reproduced naturally to 50 animals, and, at present, it is the most numerous species in the collection.

In the operations centre, we watched a television monitor, fascinated by the activities of a group of zebra two miles away. When we remarked that we particularly liked the view of a group of zebra feeding together, the operator pressed a control button and seconds later a nearby machine produced a black-and-white photograph of the scene for us. Should one of the animals need to be anaesthetised, a laser-directed dart gun can be targeted on the televised image and fired, allowing for immobilisation to take place without the animal ever seeing a human being.

Mr Gruenerwald is proud of another group of unusual equids at the sanctuary, namely the 23 kulans. These dun-coloured Asian wild ass — about two-thirds the size of our Kenyan plains zebra — were once

... equids

fairly numerous in parts of Asia Minor, but few, if any, exist today except for some captive groups in the Soviet Union and a limited number of zoo specimens. 'They are extremely mischievous, clever individuals,' remarked our host. 'It was necessary to put chains and padlocks on automatic gates after they learned to nuzzle them open. Sometimes they race the Grevy's along separating fence lines – and they always win.'

Related to the kulans are onagers, which are also dun-coloured and similar in appearance, although they are somewhat larger. Canyon Colorado has two males that were imported from Czechoslovakia. Unfortunately, onagers are rarely exhibited, and the sanctuary has so far been unable to obtain any females. There is, in addition to all these equids, a pair of Przewalski horses.

The 'crown jewels' of the collection are three Somali wild ass. Extremely attractive, they have a soft pearly grey coat and striped legs. According to Heini Demmer, the famous animal trapper who negotiated the purchase of these from the Basle zoo for Mr Gruenerwald, very few of them exist in the wild today. They are limited to the desert of northern Somalia and the Danakil wasteland of Ethiopia. Plans have been made to carry out an aerial survey of them with the hope of possibly obtaining some more from scattered remnant herds.

Realising the importance of genetic diversity in captive groups, the sanctuary has compiled comprehensive studbooks of all the equid species: Grevy's and Hartmann's zebra, Przewalski horses and wild ass. These provide information on inbreeding co-efficients, demographics and physiology. Maintaining a vigorous, healthy collection of animals is the underlying credo of Canyon Colorado.

The combination of Canyon Colorado summer grazing lands with a 1,000-tonne capacity hay ranch, which is an integral part of the sanctuary complex, could support a collection of 250-300 free-roaming equids. At the 1,200 hectare hay ranch, Mr Gruenerwald would like to introduce the Asian kiang. These extraordinary, pony-sized equids with shaggy coats and large heads come from the high plateau region of eastern Chinese Tibet. A few are in Chinese zoos and in the San Diego and East Berlin zoos.

Critics of private endeavours to conserve endangered animals sometimes complain that once the talented initiator of the project passes away, his project will die as well. To prevent this from happening, Mr Gruenerwald has established a non-profit foundation to which he has donated sufficient assets for the Canyon Colorado Equid Sanctuary's long-term financial survival. He is in the process now of setting up a board of directors who will make sure that Canyon Colorado will continue to attract the best possible advisers and management talent. In 1980 measures were taken to incorporate Canyon Colorado in



Esmond Bradley Martin standing by moveable irrigation apparatus at the hay ranch.



The sanctuary's supply store.

the state of New Mexico, and it has also received official recognition from the US Department of Agriculture, the US Department of the Interior and the New Mexico Department of Game and Fish. The sanctuary's equids are registered with the International Species Inventory System and the Species Survival Plan organisation of the American Association of Zoological Parks and Aquariums.

The breeding successes at Canyon Colorado may encourage the owner to expand beyond the scope of an equid sanctuary. We accompanied him on a helicopter flight to another area of northern New Mexico which he might purchase if surveys indicate that it would be suitable for black rhinos. Mr Gruenerwald is particularly concerned about the precipitous decline of this species from around 65,000 in 1970 to about 4,000 today.

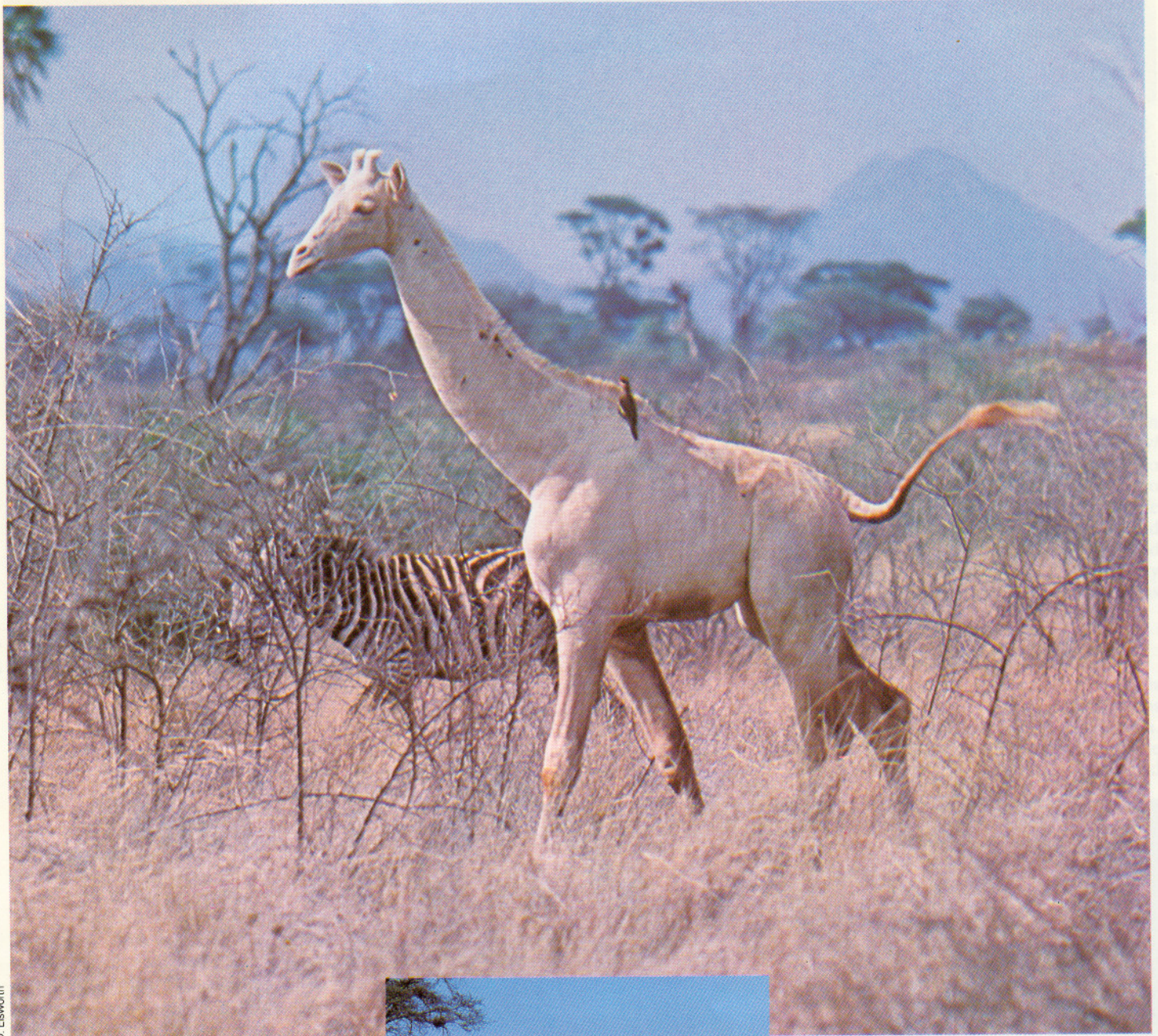
Hovering above tamarask, snakewood, greasewood and yellow cottonwood trees, looking down at swamplands and extensive river canals which would serve as ideal

rhino wallows, we felt that it offered great potential. A successful breeding programme for black rhinos in North America in a secluded, 3,200 hectare free-ranging setting would be a major conservation achievement. The proposal should be seen as complementary to encouraging well-run public and private sanctuaries in Africa. Wildlife management expertise – wherever gained – is invaluable. 9

Dr Chryssee Bradley Martin has written many articles about wildlife during the past fifteen years for a variety of journals and magazines. Since 1975, she has also been editor of *Kenya Past and Present*, the journal of the Kenya Museum Society. With her husband, Esmond, she has written two books, *Cargoes of The East* and *Run Rhino Run*.

Dr Esmond Bradley Martin, a geographer by profession, is a consultant for WWF currently working on a project to monitor and close down the trade in rhino products. In addition, he has recently worked on several documentary films about rhinos for the BBC, PBS, Channel 4, the American Broadcasting Corporation, and the National Geographic Society.

An albino giraffe

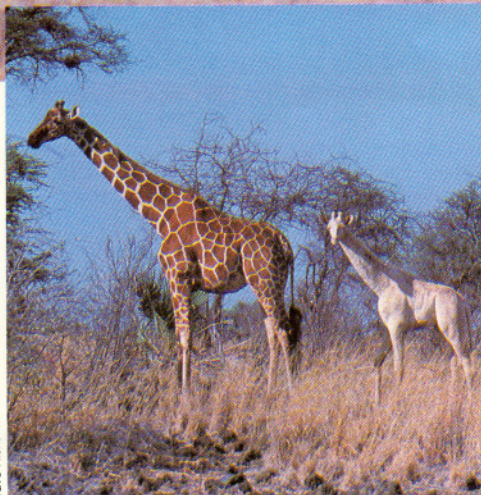


D. Elsworth

These photographs of an albino reticulated giraffe were taken in Meru National Park in September last year, when the animal was estimated to be about 10 months old.

Considerable variations in markings are found both between species of giraffes and among individuals of the same species, but giraffes that are all white are uncommon. This one in Meru has pink eyes so is a true albino. A melanistic giraffe has been recorded in Tanzania's Lake Manyara National Park, which was completely black without any markings.

Giraffes most commonly inhabit open woodland where their coat patterns provide



Dave Richards

some camouflage, but an adult giraffe's main defence against predators is its enormous size. Young giraffe are very vulnerable to predators so the babies spend long periods of the day lying or standing in one place, either alone or with other young in a creche. Studies have indicated that only one in four survive the first year of life, although in the second year, as they grow bigger, their chances of survival improve dramatically.

This young giraffe was still alive towards the end of last year so hopefully will now be on view to visitors to the park for many years to come.



Brian Beck

The African barn owl

by Brian Beck

Of all the owls in the world, the widely distributed barn owl is the most closely associated with man. Although they nest in hollow trees, cliffs, or old hammerkop nests, you are as likely to find them in church steeples, abandoned buildings or mine shafts. Not numerous anywhere, barn owls are none the less widespread (on this continent they occur south of the Sahara all the way to the Cape), frequenting grasslands, forested areas and mountainous country, as well as cities.

Like most of the world's 133 species of owls, the sexes are virtually identical (the snowy owl being one exception). Approximately 33 cm (13 in) in length, the barn owl is easily distinguished by its lack of ear tufts but more so by an almost simian look, the forward facing eyes set in a heart-

shaped facial disc.

Although strictly nocturnal, they have occasionally been observed at dawn or on dull days, flying low over open country. The owl then 'searches' the terrain, relying on its keen eyesight and even more on its keen sense of hearing. Their diet includes lizards, frogs and small birds, but their preference, to the farmers' delight, is for rats and mice. Although the wings beat rapidly, flight is silent due to the owl's soft, downy plumage, so they can descend quietly, with hooked beaks and strong grasping talons. Often, they will swallow their prey whole, only to later regurgitate neat little balls of bone, fur and feather.

The barn owl is not migratory and tends to show a great faithfulness to past breeding sites. Fort Jesus for years had two pairs

quartering in the outer walls. Mating for life, the barn owls are dutiful parents, both incubating the clutch of 2-6 pure white eggs and then feeding the young.

The barn owl has a variety of noises ranging from a typical long-drawn, eerie screech and an assortment of chuckling notes to a series of hisses and bill snapping when alarmed or protecting nesting sites. This owl is also known for its snoring, a characteristic viewed with suspicion by small birds, often making them betray the owl's presence with their own verbal ruckus.

Thus, this most commonly known of all the owls continues to thrive, adapting itself to a variety of conditions and bringing a little excitement to the night.

SOCIETY HIGHLIGHTS

Donations

The Society has received over Ksh 10,000 in donations to the Conservation Fund during the last two months and a further Ksh 5,760 to the Save the Rhino Fund. We are most grateful to all our contributors for their generosity and in particular to the following, who each gave Ksh 1,000 and over: V. Battle, Mr and Mrs Kenneth Kolbrook, Class 1A of Our Lady of Grace Junior School and the Punta Chica Nature Club (see stories below).

Bequest

The Society would like to record its gratitude for a bequest of Ksh 15,000 from the late Louise R. Seager.

The Punta Chica Nature Club

Some of the children at the Saint Andrew's Scots School near Buenos Aires in Argentina are members of the school's Punta Chica Nature Club. Last year they worked hard at producing a nature activity book, copies of which they then put on sale. The East African Wild Life Society is most fortunate that the children decided that Ksh 3,450 of the funds thus raised should be given to our Save the Rhino Fund. We very much appreciate this concern and interest for rhinos shown by a group of young children living so far away from Africa.

Our Lady of Grace Junior School

Another group of children, this time from Our Lady of Grace Junior School in London, have also made a generous donation to the Society's Save the Rhino Fund. Class 1A, now all promoted to Class 2A, have raised and given us Ksh 1,300, which will be spent on installing additional watering points for the rhino in the Lake Nakuru Rhino Sanctuary (see the 'Comment' in this issue).

Donation of slides

Roy Gregory of Nairobi has given the Society 98 colour slides. They are all on sale in the Society's shop, so come and add to your slide collection while having the satisfaction of knowing that your money is going to support conservation.

Sarova Hotels

As part of their policy to support conservation, Sarova Hotels have installed two Save the Rhino money-boxes to collect money for the East African Wild Life Society. The boxes are in Nairobi's New Stanley Hotel and in the Sarova Lion Hill Camp in Lake Nakuru, where several rhinos have now been translocated to the new rhino sanctuary.

Emergency anti-poaching aid

Over the last few months the Society has spent over Ksh 120,000 buying new parts for vehicles used by the anti-poaching forces in Mount Elgon National Park. Until the Society was able to give this emergency



Members of the Punta Chica Nature Club, who raised Ksh 3,450 for the Society's Save the Rhino Fund.

assistance, only one of the park's vehicles, a tipper, was operational, which was severely hampering all anti-poaching work.

Seaweeds of the Kenya coast

No book exists to help people identify the various species of seaweed that are found along the Kenyan coast so the Society is pleased to be giving Oxford University Press a subsidy of Ksh 20,000 towards the publication of *Seaweeds of the Kenya Coast* by Barbara Simpson, Anne Gunston and Shakuntala Moorjani. While perhaps having limited commercial value, the book, which is due out early this year, will be an invaluable tool for scientists doing research and lay people interested in any aspects of life in the lagoons and shallow seas.

Research laboratory

The Society has given the Gallmann Memorial Foundation (see *Swara*, January/February 1987) a grant of Ksh 50,000 to help build a laboratory on Ol Ari Nyro Ranch in Laikipia. Research on wildlife conservation and ecology has been carried out on Ol Ari Nyro for several years and there is now an urgent need for a laboratory to house equipment, books and specimens for Kenyan and visiting scientists.

Wildlife Clubs of Uganda

Wildlife, the magazine of the Wildlife Clubs of Uganda, goes out to all the wildlife clubs in schools and colleges throughout Uganda. It links the clubs in different parts of the country and its natural history notes and



Sarova Hotels' Mr J. Macharia and Mr George Etale pictured receiving the Save the Rhino money - boxes from the East African Wild Life Society's Executive Director Mr N.K. arap Rotich.

... Society

articles about important conservation issues are an invaluable source of information. The Society has given the clubs Ksh 35,620 to cover the cost of producing one issue.

Kenyan cultural beliefs about birds

Dr Aneesa Kassam of the National Museums of Kenya has been given a grant of Ksh 50,000 by the Society for a study she is leading, which will combine ethnography and ornithology. The project is exploring, through language, culture and society, the role played by birds in the belief systems of some of the peoples of Kenya. By recording the names, taxonomy and meaning of birds in people's cosmology, world view and oral literature, the study will demonstrate that birds are as much a part of the mental landscape of man as they are of the natural one.

Staff trip to the coast

The staff at the East African Wild Life Society's offices in the Nairobi Hilton building frequently have to answer questions from visitors about conservation in East Africa and where is the best place to go to see particular animals. To equip them to answer these, the Society arranges for them to go on tours to various places of interest. The most recent one took place in mid-November, when they spent a week-end down at the coast.

They first went to Baobab Farm, the reclaimed quarry owned by the Bamburi Portland Cement company, where Rene Haller, who masterminded the reclamation, gave them a personal tour. He explained how the land had been left barren after the limestone used for making cement had been mined from the area, and how he had gradually made the land fertile again. Today the farm is a haven of cool greenery, with many different kinds of animals such as hippos, eland, snakes, crocodiles and fish. Mr Haller's project is a fine example of how once barren land can be made productive.

After visiting the Gedi National Monument, the group travelled on to the Malindi Marine National Park, where they were given a lecture and a guided tour of the park by an assistant warden, Mr Opiyo. The park was formed in 1968 and is one of the major tourist attractions at the coast, bringing in revenue of over Ksh 500,000 a year. Mr Opiyo explained that the main problems facing the park were poaching, the destruction of corals and the deposition of silt brought down from up-country by the Sabaki River, which flows into the Indian Ocean just north of Malindi. If people living upstream of the Sabaki followed sounder farming practices, there would be less soil erosion and so less silt to be dumped on Malindi's beautiful coral gardens.

The Society is most grateful to all the people who worked to make the trip such a success.

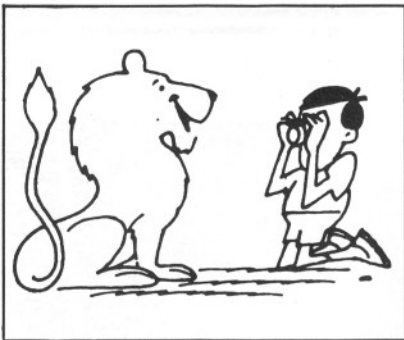


Dr Aneesa Kassam and the Society's Executive Director Mr N.K. arap Rotich with the Amstrad word processor bought by the Society for her bird project. The word processor will be used to compile and edit a book based on the findings of the project.



Society staff at the Baobab Farm, Bamburi.

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Tsetse fly eradication scheme

Concerned over the large-scale eradication of tsetse fly throughout some 38 African countries – an area the size of the United States – WWF has just issued a statement recommending changes in the multi-million-dollar scheme. Questioning the methods and objectives of the pan-African programme, WWF has stated its concerns in an official position and background document and outlined priorities for modification of the widely-criticised plan.

As a first priority, WWF has recommended that the environmental consequences and land-use implications of tsetse eradication projects be scrutinised closely. Critics of the controversial scheme that covers much of sub-saharan Africa, say that it will open up some seven million square kilometres of wildlands to over 150 million head of cattle. Convinced that in most countries this is not the best use of the land, WWF has suggested alternative land-use plans including multi-species utilisation, a method which combines management of wildlife and domestic stock in the same range.

Worried over the environmental and health consequences of the eradication scheme, particularly the use of dangerous chemicals in marginal land-use areas, WWF has recommended that methods developed by the World Health Organisation (WHO) to detect and treat sleeping sickness, be stepped up. In addition, WWF encourages further research on finding new cures in humans as well as in cattle. In cattle, on which many Africans depend for their livelihood, the sickness is known as nagana, and kills at least three million animals per year.

One of WWF's main concerns is the health of Africa's human population. Some 20,000 new cases of sleeping sickness are reported annually, and as many as 10,000 people die of the disease. If detected early enough, the disease can often be treated successfully. Unfortunately, many cases go unnoticed, largely because screening measures are not adequately implemented. In Uganda, the disease has reached epidemic proportions. However, recent research financed by the United Nations Development Programme has produced a new drug which appears promising as a treatment for the disease.

WWF is not convinced that spraying vast areas with pesticides is the best method of combating the disease, nor is it convinced that it is the only means of improving living standards in the areas concerned.

It is commonly assumed that wiping out the tsetse fly will improve human welfare and result in enormous economic benefits. Conservationists, however, do not believe that the environmental implications of the



J.F. Reynolds

The ground-sprayed dieldrin used to eradicate tsetse fly has also killed small mammals.

disease have been fully investigated or that adequate measures are taken to minimise environmental damage. They claim that eradication of tsetse is almost always followed by uncontrolled settlement leading to severe soil degradation. WWF's belief is that such degradation will be ultimately as detrimental to human welfare as the presence of the tsetse fly itself.

Proponents of tsetse elimination have recently developed land-use plans for areas cleared of the fly. Despite these efforts, uncontrolled settlement of the cleared areas has outstripped land-use plans. Both the Food and Agricultural Organisation of the United Nations (FAO) and the European Development Fund now support implementation of rural development and land-use plans, considered by FAO to be priority conditions for any FAO-supported tsetse control programme. What is needed is the assurance that the land-use plans will be enforced.

WWF urges that land-use capability assessment *precedes* land-use planning so that optimal use is made of the area to be cleared. 'Enforcement and monitoring of land-use must also be an integral part of the planning process. Land-use plans are worthless unless they are actually implemented. Funding for implementation must therefore be in place before eradication begins,' says Dr John Hanks, Head of Project Management for WWF International. Where enforcement of land-use planning is not feasible, priority should be given to alternative methods of tsetse eradication and to improving living standards.

FAO, which has been 'waging war on the tsetse' since 1975, has in recent years contributed and actively participated in a

number of initiatives aimed at developing and promoting alternative methods to pesticide spraying in tsetse control projects', including development of the sterile male technique and 'odour-baited' traps. It is believed that female tsetse flies mate only once in their life and that the release of sterile male flies into their environment could render them unproductive for their entire lifetime.

WWF does not hold out much hope for the sterile male method, but notes that in a recent trial in Zimbabwe using four traps per square kilometre over a 600km² tract, a 99 per cent reduction in the tsetse population was achieved.

While these alternative methods are receiving some funding, the bulk of money is being poured into pesticide eradication of the fly. Although improvements have been made in using pesticides as the main means of eradication, many dangerous chemicals, including DDT, continue to be used.

Recent research in Zimbabwe has revealed levels of DDT in human breast milk up to twice the maximum safe limit established by the WHO. Also, high levels of DDT residues in some wildlife, and eggshell thinning in the Kariba fish eagle populations were found. In Botswana and Zambia it was discovered that 70 species of birds, reptiles, fish and small mammals, including small game species, were killed by ground-sprayed dieldrin. In all, more than 300,000km² of Africa have been sprayed with DDT, dieldrin and gamma-BHC (Lindane).

Given the proliferation of questions and dangers associated with the tsetse eradication scheme, WWF is recommending improvement of agricultural techniques in tsetse-free areas already under human

INTERNATIONAL UNION FOR CONSERVATION OF NATURE

settlement, and multi-species farming as a primary land-use option in many tsetse-infested areas.

At present, WWF is raising funds for a US\$2.75m multi-species wildlife utilisation project in Zimbabwe. The five-year project will assess the value of mixed species wildlife utilisation. The project would identify areas currently infested by tsetse and determine their potential for multi-species wildlife use. According to some advocates of multi-species wildlife use, it is a viable land-use option that must begin immediately.

Elizabeth Kemf, WWF News

Genetic diversity

There is probably no expression that is better understood in the scientific community and not understood at all outside that group than 'Genetic Diversity'.

Many laymen believe that we should conserve nature but few can give a rational explanation why they feel this way. What the scientists are telling us is that the conservation of nature is a question of maintaining the choices available to us in the future for resolving the unpredictable problems we shall have to face in a world of shrinking resources and burgeoning population. In today's world, conservation is not just altruism, it's survival.

The living world can be compared to an iceberg: not only is it gradually melting away but the greater submerged part is quite unknown to us. The tip corresponds to the fraction of living species that science has recorded: some 1.5 million. Estimates of the entire bulk vary from three to ten million and of this some 500,000 are 'melting away' and will be lost by the year 2000, just 12 years from now. All conservation efforts serve to keep the rate of 'melting' to a minimum.

But who knows what species are faced with extinction? Could one, for instance, be the only bee to pollinate the Brazil-nut tree

or a grassy weed that might have helped breed a disease- or drought-resistant cereal?

We cannot predict what natural products we will require in the future, nor what plants, animals, insects, micro-organisms can provide us with new drugs, new raw materials, new foodstuffs. Conservation allows us to have a wider range of resources to call upon to face the changing world. For example, the qualities attributed to crop plants and livestock, such as yield and nutritional values, are rarely if ever permanent. As any farmer knows, they either 'grow out' with succeeding generations or pests evolve new strains and overcome resistance. Continual breeding programmes using wild plants and animals are essential to maintain yields. Nature continually offers surprises as to how some organism can become useful to mankind (many algae for instance may become valuable sources of protein). Who knows what other raw materials or services can be provided?

Our perceptions of nature vary from individual to individual. A tropical forest may offer quick profit and a cheap source of wood to some, a home for beautiful butterflies for others or a watershed complete with nature's own pumping-station (gravity), a natural reservoir that will

ensure fresh water for all time. Should short-term gains be allowed to author long-term problems? Increasingly decision-makers are wrestling with these decisions. Even industry has come to recognise that if they harvest natural resources it must be done 'sustainably' or they will put themselves out of business.

The world has become too crowded a place, our demands too heavy to have Mother Nature repair all the damage done by man but a World Conservation Strategy augmented by national conservation strategies (they already exist in over 30 nations world-wide) may finally provide the balance that has been missing between what we desire and what we can take safely (sustainably) from that environment.

From 1-10 February 1988, scientists and conservationists, policy makers and bureaucrats will gather in San José, Costa Rica, to form policy for a new edition of the *World Conservation Strategy*. The WCS was first published in 1980. The scientists will be attending scientific workshops that will address the future of the International Union for Conservation of Nature and Natural Resources (IUCN). The event is the 17th General Assembly of IUCN (the world's largest scientific conservation organisation) and genetic diversity will be only one of a myriad of topics debated.

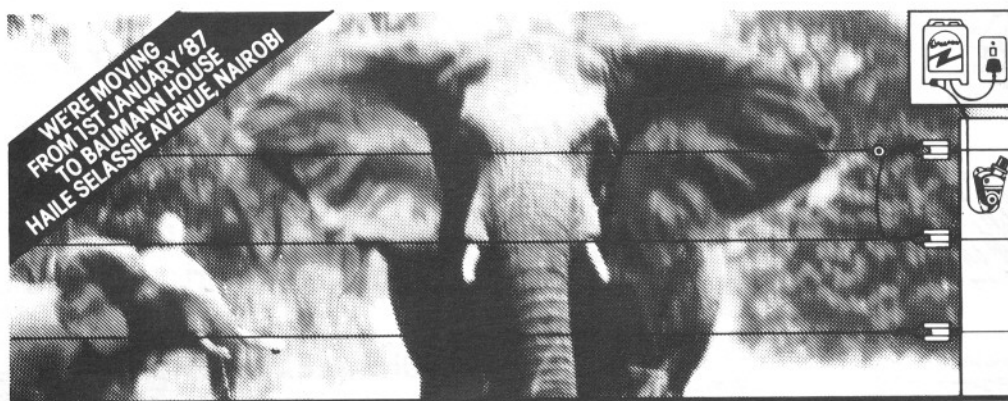
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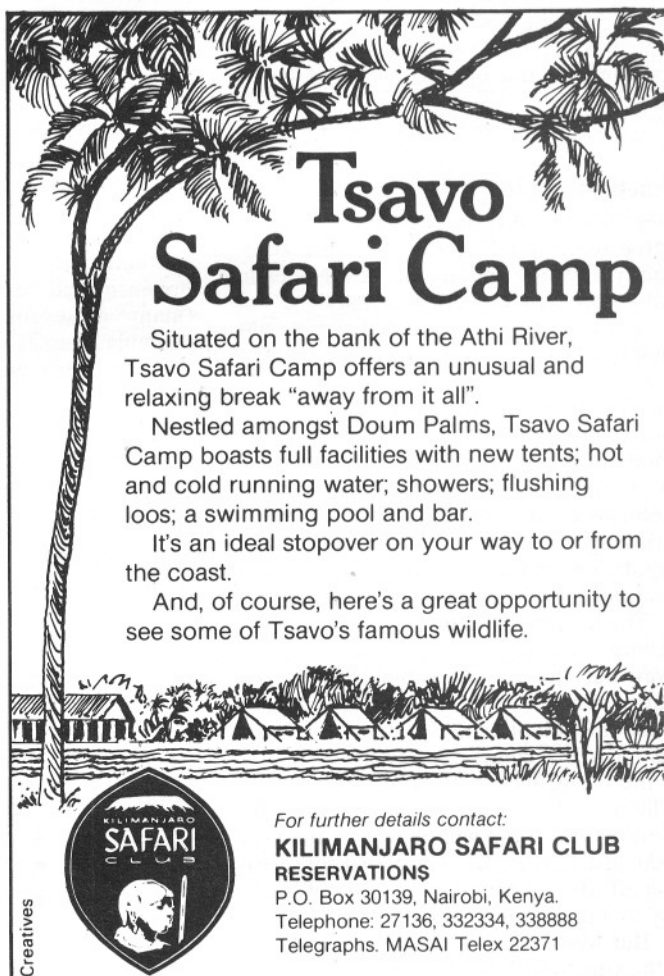
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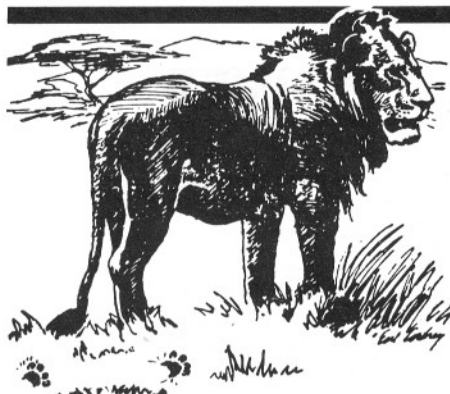
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LETTERS

From Samar Ntalamia, Loitokitok, Kenya

The cost of visiting and staying in Kenya's national parks and reserves is too high for most adult Kenyans and quite beyond the reach of students.

The government's recent campaign to promote local tourism during the low season by offering special rates for Kenyan residents was presumably prompted by an awareness that most Kenyans are unable to pay the prices charged to overseas tourists and are therefore being deprived of the opportunity to know and appreciate our wildlife reserves. However, even these special rates are still too high for most people. Is it, therefore, surprising that for the majority of Kenyans being a tourist is synonymous with being a foreigner?

Today's students are the custodians of our wildlife heritage. How can they effectively discharge this responsibility if they have not had a chance to develop an extensive knowledge of and love and respect for this irreplaceable resource?

From Joe Cheffings, Nairobi, Kenya

In the course of the past several months a number of 'anti-tourist' statements have appeared both in *Swara* and in Kenya's national press. The general theme of these articles and letters has been that tourism damages the environment and disturbs wildlife. A more particular concern is voiced about the effect of tourist pressure on species such as cheetah and leopard.

A brief examination of the facts will demonstrate that these accusations and concerns are basically unfounded. They are also dangerous in themselves because they divert attention from the real enemies of conservation, which in many East African national parks are poaching and cattle grazing.

Looking first at the general situation it can be shown that wildlife is more secure in the presence of major tourist facilities than elsewhere. For example, at Kilguni there are more animals now than there were before the lodge was built. In fact, taking Tsavo as a whole, it is significant how the animals tend to concentrate around the lodges and other areas which are well utilised by tourists. The ultimate demonstration of the beneficial effects of large-scale tourism can be seen at the Taita Hills game sanctuary near Bura. Approximately fifteen years ago, there was no tourist presence and only a few animals existed there. Since the building of the lodges with the provision of extra waterholes and salt licks, plus the exclusion of cattle and poachers, it has become a superb wildlife sanctuary which supports a broad spectrum of animals.

Other examples could be given *ad infinitum*. Amboseli, where there are three major lodges, continues to harbour an amazing number and variety of animals; it is much more threatened by the massive environmental damage caused by the seasonal influx of cattle, than it is by tourism.



Peter Davey ARPS

A large hyena population presents cheetah with plentiful competition

Some areas definitely need to be more used by tourists, not less. I recently stayed at a beautiful lodge in a famous national park but in a region not heavily travelled. From the window of my room I could hear poachers shooting and see panic-stricken herds of elephant running. That would be an impossibility in Amboseli, as the poachers know perfectly well that they would have no hope of chopping out the ivory before all the tourists arrived!

Tourism also provides other benefits such as fairly tame animals for scientists to study and for overseas movie-makers to film. Think how much more difficult those activities would be without nice, tolerant, habituated animals!

Regarding the specific charge that tourist pressure affects the reproductive performance of leopards, the facts once again indicate otherwise. In recent years in the Masai Mara, several leopard families have been subjected to exceptionally heavy tourist pressure. In spite of being more or less surrounded by cars almost every day, they all raised their cubs successfully. I personally found such scenes to be so aesthetically displeasing that I avoided the well-known leopard haunts as much as possible. The leopards, however, did not seem to mind the cars, although I suppose it could be argued that the cubs may have an increased risk of developing cancer in later life due to the inhalation of all those noxious exhaust fumes!

Cheetah, being daytime hunters, are particularly vulnerable to interference by tourist vehicles, but in fact their numbers appear to be controlled by other factors. In the late 1970s, and early 1980s there was a very large hyena population in the Masai Mara. Cheetah were frequently robbed of their kills and probably also lost cubs to these powerful competitors, so that cheetah numbers remained low. After about 1984, hyenas declined. Some were apparently poisoned by toxic cattle dip chemicals and others are known to have been killed off by territorial male lions. Right now cheetah in the Mara seem to be staging a modest come-back, but perhaps they can never increase much in an area that supports so

many lions in addition to a fluctuating hyena population.

Turning to habitat damage by tourist vehicles, this is a localised problem which has been well handled for many years in places such as Serengeti and Amboseli. In the Serengeti (14,763 sq km) off-road driving by safari cars is permitted everywhere except inside a 16-km radius of Seronera. In Amboseli (388 sq km) no off-road driving is permitted, which is reasonable considering that the whole park is smaller than the restricted area around Seronera. In both the above cases the regulations appear to fit the circumstances very well. Reasonable rules, sensibly applied, can surely take care of similar situations elsewhere. In the meantime let us not divert too much attention from the more serious issues of poaching and the environmental devastation caused by domestic livestock.

From Johan W. Elzenga, The Netherlands

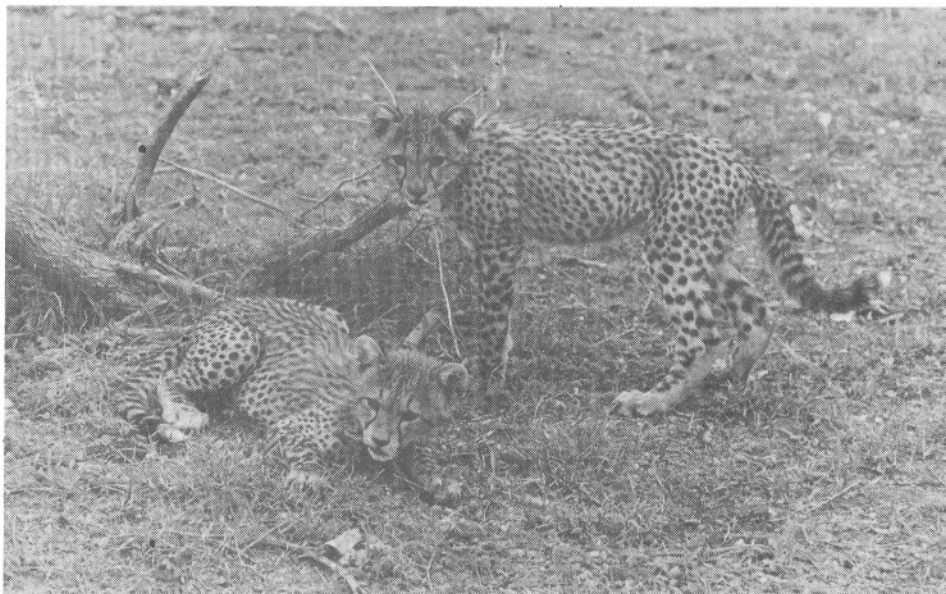
In his letter to the Editor (*Swara*, September/October 1987) Tim Caro accuses me of throwing caution to the wind on the topic of tourists' pressure on the national parks of Kenya. Caro has clearly misunderstood most of my letter (*Swara*, November/December 1986) and especially my reasons for writing it. I do not disagree with Caro that there is a serious problem of erosion that needs quick action to reduce the number of vehicles. I also do not disagree that tourists' harassment is clearly having an important effect on the cheetah populations of both the Masai Mara and Amboseli. The only thing we *do* disagree on is his suggestion that increasing the park fees will solve both problems (Caro's article, *Swara*, July/August 1986) and I have given plenty of reasons why. Caro has not commented on any of these.

In his letter Caro admits that in Tanzania there is an increase in tourism despite the much higher park fees than in Kenya. Does this mean he is also no longer so convinced that this proposal would considerably reduce the number of cars? In fact, my fear is that if the fees *are* increased (and not

much else is done) and the effect is minimal, we might have lost the valuable time that we both agree is so limited! I have suggested other ways to reduce the vehicle pressure on the Mara and Amboseli and Caro's letter gives me no reason to change my opinion.

The second problem, the harassment of animals is more complicated. Like Caro, I am convinced that with cheetah the evidence is clear. My 'one or two individuals . . .' did *not* refer to cheetahs, but specially to the other big cats. They are also harassed, but don't seem to suffer much, possibly because they hunt at night. The leopards of Jonathan Scott's *The Leopard's Tale* may go into history as 'The Most Harassed Leopards of Kenya', really an awful thing. But at the same time they were very successful breeders and the Mara is nowadays the best place to see leopards in Kenya. Furthermore, both the Mara and Amboseli have very dense lion populations (another pressure on cheetah, by the way). I would not be surprised if their density is higher than in the Serengeti. Before I am accused again of saying something I did not mean: this is not an attempt to 'prove' that harassment does not have a negative effect on the other big cats. As somebody who cares about animals I hate to see any animal being harassed. But if I try to put aside my personal feelings, I find that the evidence seems to be contradictory and so things might be much more complicated than they look. That is why I stressed the need for further scientific studies: not to stall for time or because I don't take the problems seriously, but because other people – and possibly those who have to take the decisions – might use these same arguments to justify doing nothing.

In my view, harassment is not so much directly related to the number of tourists, as to their *behaviour*. That is why I don't think that a reduction in the numbers of tourists will solve this part of the problem. *One* car can harass a cheetah tremendously, while five cars filled with sensible people acting with restraint, doesn't need to be a disturbance at all. That is why I called for the education of drivers and tourists, rather than a reduction of their numbers (in whatever way). Please note, I think it would indeed be very sad if future visitors were not to see any cheetahs in Amboseli. Of course I hope it never happens and I would support any *effective* action (like establishing a 'Cheetah Rest Area', closed to the public) to make sure that it doesn't. But is Caro's suggestion – to deny a lot of future visitors the chance to come here at all – so much better? If the cheetah as a species were endangered because of tourism, I would concur. But (as Caro agrees) if the species is not? I wonder. Wildlife is not merely an economic asset. Humanity has an *obligation* to protect it, but also the *right* to enjoy its beauty. And that applies to all of us, not only the very rich (who are often not the world's most dedicated conservationists in the first place). Again, I am not saying that the problem does not exist or is not urgent, I just don't believe in some of the solutions put forward.



J.F. Reynolds

Cheetah cubs – could there be other species of large spotted cats in Africa as yet unknown to science?

Finally I would like to stress one further point. There are *people* in Kenya alongside the animals and plants. Many of them make a living, directly or indirectly, from tourism. Any suggestion that would adversely affect them is doomed to fail, because no action will work if the people don't support it. I don't hold any illusions that many (if any) tour operators would let their businesses go down the drain for the sake of the future of Kenya's wildlife. It is very sad, but very true, so let's find a better solution and let's find it fast.

From Dr Karl P.N. Shuker, 257 Hydes Road, West Bromich B71 2EE, West Midlands, England

Three of East Africa's most magnificent species of mammal must surely be its large cats – lion, leopard, and cheetah. However, judging from the large numbers of documented reports, descriptions, and sightings which have been gathered from reputable and reliable eyewitnesses over the years, it is actually possible that in addition to these three species, other comparably-sized African cat forms also exist – unclassified by science yet apparently well known to local inhabitants, who readily differentiate these from the officially-recognised species.

These mystery cats include: the spotted lions of Kenya (*marozi*), Uganda (*ntarago*), Central African Republic (*bakanga*), and Rwanda (*ikimizi*); the giant brindled cat of Tanzania (*mngwa* or *nunda*) and black cat of Uganda (*ndalawo*); the so-called mountain tiger or *vassoko*, *gassingram*, or *coq-ninji* of the Central African Republic; the *ndamathia* or *damasia* of Kenya; and the Central African Republic *muru-ngu*, *ze-ti-ngu*, or *dilali* (comparable to the *coje de menia* or water-lion of Angola).

Since the 1950s, hardly any reports of these animals have emerged from Africa. Does this mean that people are no longer documenting accounts of these; or, more disturbingly, does this silence mean that these animals are nowadays very rare or

even possibly extinct? As a zoologist with a long-standing interest in this subject, I am compiling a book dealing with these mystery cats – in order to bring them once again to the attention of science.

As you may know, a new large cat form has been discovered in Mexico – the *onza*. This is a cheetah-like cat, well-known to the local inhabitants of Sinaloa, but whose existence was disbelieved by scientists until a specimen was shot last year and submitted for full scientific examination. The *onza* is now eligible for full legal protection – a comparable event in Africa would engender corresponding measures for the cat forms I have noted.

Surely the most tragic fate that any species can suffer is to become extinct before its very existence is officially recognised scientifically. Hence I would very greatly welcome any details of recent sightings, reports, photos, etc, appertaining to any of the forms listed above, for inclusion within my book. Moreover, such information would be doubly welcome – as it would indicate that these animals do indeed still exist, and that it is therefore not too late for science to seek out and determine conclusively their official identities, and in turn bring into operation conservation measures to ensure their continuing survival.

From Mrs P. Beaton, Limuru, Kenya

We have seen fairly frequently in the last month a beautiful specimen of a Jackson's or Denham's bustard on the plains below Aitong in the Mara. On each occasion he has been on his own, with no signs of a female, although he appears to be puffing himself up, inflating his neck and generally acting as though he were attempting to attract a female.

I wonder whether any other readers might have seen him, and whether there is a female in the region, and if not, whether he could not be moved to where there are females. It seems rather sad that such a beautiful specimen should be displaying to no avail!

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