

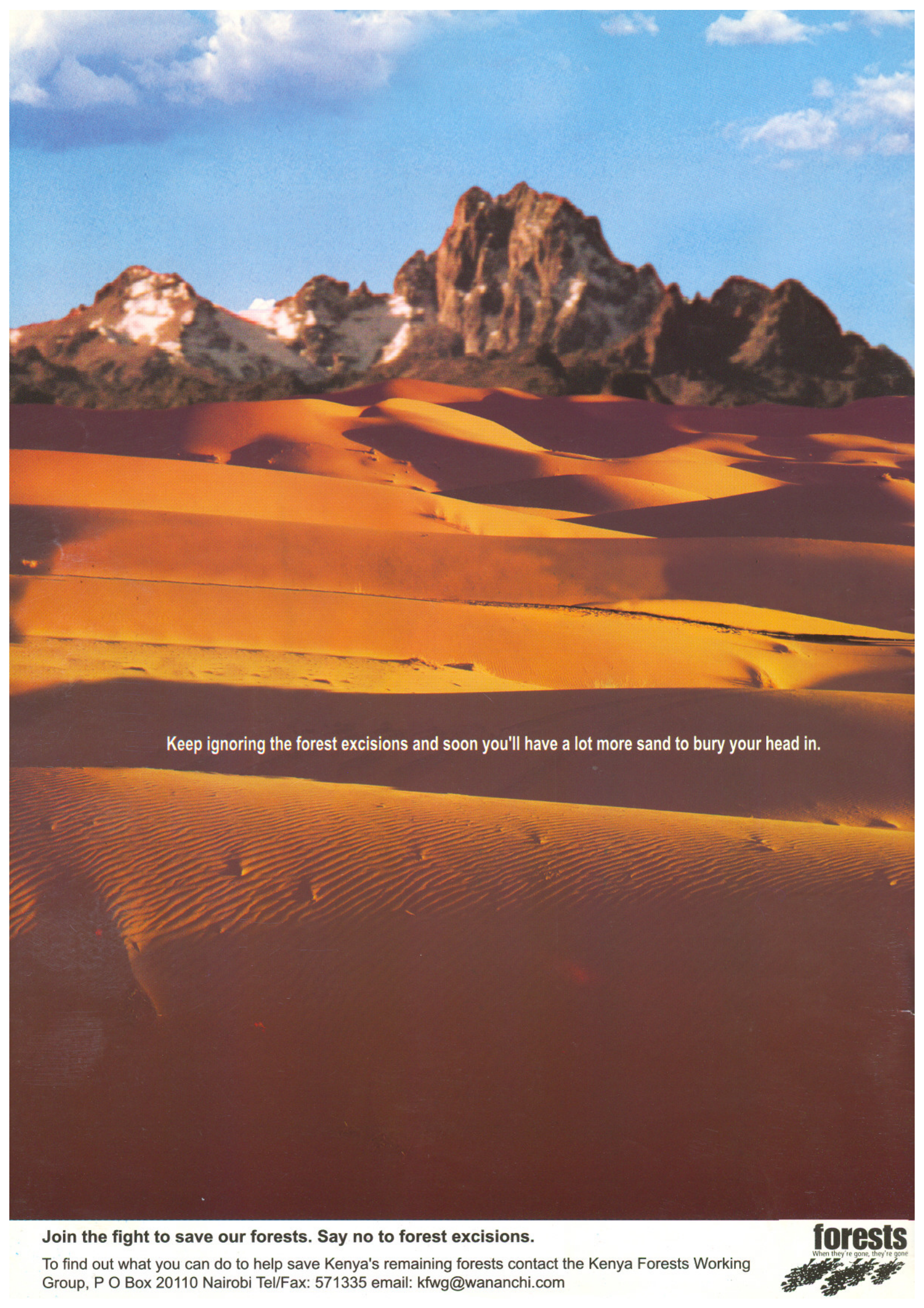
Swara

East AFRICAN WILD LIFE Society



Volume 24:3 September - December 2001





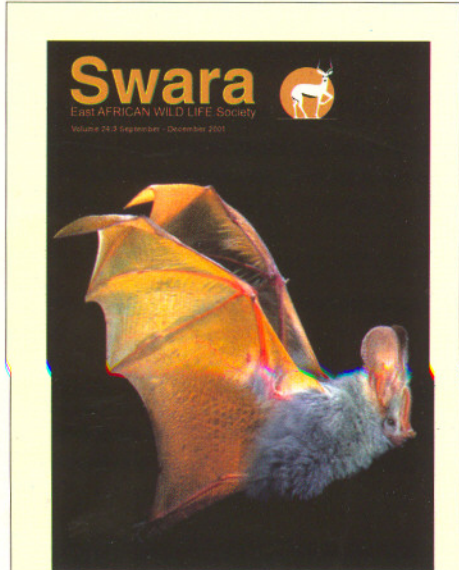
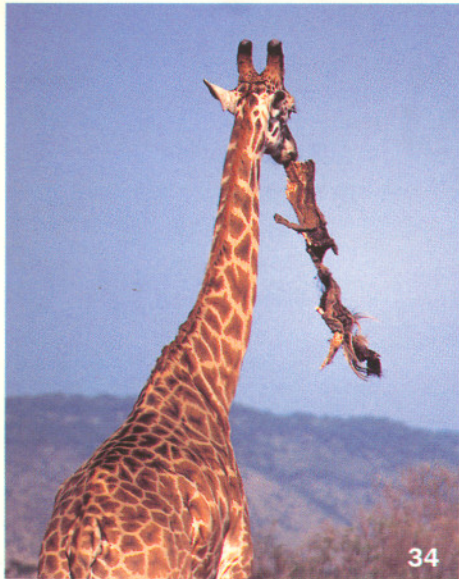
Keep ignoring the forest excisions and soon you'll have a lot more sand to bury your head in.

Join the fight to save our forests. Say no to forest excisions.

To find out what you can do to help save Kenya's remaining forests contact the Kenya Forests Working Group, P O Box 20110 Nairobi Tel/Fax: 571335 email: kfwg@wananchi.com

forests
When they're gone, they're gone





COVER

'Stealth bomber': Greatly elongated ears enable the yellow-winged bat, *Lavia frons*, to pick up the footfalls, or mating calls, of insects moving on the ground or among branches. This, and a very high frequency echolocation call, provides for unerringly accurate prey detection.

Photo: **Merlin D Tuttle/Bat Conservation International**

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Swara

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The impala is the symbol of the East African Wild Life Society. 'Swara' is the Swahili word for antelope.

The struggle goes on

The Society's preoccupation at present is with forests. It is not just that our forest departments are dysfunctional and that many of our foresters are blatantly corrupt (indeed, 180 foresters have been indicted recently, according to the Permanent Secretary in Kenya's Environment Ministry). Nor is it simply that the few who do strive conscientiously to preserve our forests are frustrated at every turn by interfering politicians and provincial administrators.

Today, it is the governments *themselves* that have become, once again, the arch destroyers of our region's forests. In this respect, East Africa's modern, postcolonial governments are no different from past colonial regimes that went about excising forests – partly, it is true, for development purposes, but often to reward their cronies and supporters as well.

In Uganda today, there is an outcry over a proposal to annex an entire indigenous forest for sale to, and clearance for cultivation by, a sugar plantation.

In Kenya the stakes are even higher. In February this year, the country's then Environment Minister formally gazetted the government's intention to excise 67,725 hectares of national forest. Forest cover in Kenya has shrunk considerably since the early 1900s and now stands at somewhere between two percent and three percent of the country's total land area. A 67,725-hectare excision would reduce what little gazetted forest reserve Kenya still has by nearly 4%. This is the single largest excision exercise ever proposed by a Kenya Government.

The Society reacted swiftly to the *Kenya Gazette* notice, and to the Minister's assertion that the proposed measures amounted only to an 'adjustment' to the existing boundaries of forests which, in reality, no longer existed. Through its sub-committee, the Kenya Forests Working Group, the Society conducted aerial surveys of the most contentious of the threatened forests. With the help of digital cameras and a GPS, parcels of these forests were photographed.

By this means it was possible to prove, empirically and beyond any doubt, that the Ministerial statement was disingenuous.

When the Minister further claimed that the excisions were to benefit the landless, who would be given plots to settle on and to



EAWLS File Picture

cultivate, Kenyans remained unconvinced. For most of the land in question is located at high altitudes and on steep slopes with shallow soils that, deprived of their tree cover, would erode rapidly – as has happened with many other such settlements.

Moreover, the recent Karura and Ngong Forest sagas clearly brought home the fact that most of the 'landless squatters' who benefit from such excision bonanzas are none other than prominent members of the ruling elite. Indeed, any list of the names of the most likely beneficiaries of the government's magnanimity would probably read like a Who's Who in Kenya.

The East African Wild Life Society and many other organisations and individuals have filed objections. No acknowledgements have been received, however. One lawsuit filed in court was thrown out on a legal technicality.

A concerted media campaign was launched, nobly spearheaded by the Nation Group. And for a while it looked as if the affair might become too embarrassing even for this government, and that the excision proposals – while unlikely to be revoked – might nevertheless be laid quietly to rest.

Not so. The new Environment Minister (who has himself since been replaced) promptly went ahead and put his signature to what amounts to a final gazettement of the excisions. The outrage sparked by this move – not just among conservation bodies, NGOs, international agencies, and the political opposition, but also among the public at large – is matched only by the general conviction that this cynical stratagem,

which is tantamount to further impoverishing an already devastated nation, *must* be stopped.

The reasons are plain. The excisions target several crucial water catchment areas, and threaten – among other precarious sites – the Nakuru National Park, as well as the viability of the hydro power plant now being built on the Sondu River in western Kenya. Floods and erosion will become the order of the day, and settler cultivation – if indeed any is contemplated – will fail.

Needless to say, no environmental impact study was conducted, and no expert opinion sought. (This, despite Kenya's having the head offices of the likes of the UN Environment Program right on its doorstep in Nairobi). Laws and international agreements, too, are being violated. And, last but not least, the situation is rendered doubly desperate by the fact that no dialogue has been possible with the government. Conspicuously absent from the Society's regular forums on forests are government ministers, permanent secretaries, and Forest Department officials.

The Society, it must be stressed, remains ready – at any time – to discuss any of the issues with the government. Failing this, our armoury is not yet exhausted. There is still scope for redoubled media campaigns. There is also the prospect of growing public disquiet. And there are the courts. For, notwithstanding fears to the contrary, there are still many judges in Kenya who are beholden to justice and not to the biddings of their paymasters.

The Kenya Forests Working Group needs help, both moral and material. Members of the public can help by signing the Group's petitions; by alerting families, friends and colleagues; by taking part in the Group's open meetings; by registering their protests at every opportunity – not to mention, of course, contributing financial support.

This is a clarion call. If the Society succeeds in halting the excisions, then ours could become an example to the world, an inspiration to others battling to save their forests. If we fail our forests, then the forests of Africa and the rest of the poor world, along with all the creatures that depend on them, are doomed. And future generations of our own species will not thank us for this.

Dr Imre Loeffler
Chairman
East African Wild Life Society

Uganda's new 'whites'

UP FRONT

A pair of white rhinos from Kenya finds a new home at Entebbe. **Curtis Abraham** reports.

The white rhinoceros, *Ceratotherium simum*, is back on Ugandan soil for the first time in more than twenty years.

This follows the arrival – in early November – of a pair of southern white rhinos imported from neighbouring Kenya at a cost of US\$ 20,000 (US\$ 35.2-million). The new arrivals are reportedly settling in well in the 1.5-hectare holding facility specially prepared for them on Uganda Wildlife Education Centre (UWEC) grounds formerly occupied by Entebbe Zoo.

According to UWEC Director, Beti O Kanya, the semi-natural holding facility cost US \$100,000 (US\$ 174-million) to develop. It includes a sandpit and a wallow and some partially cleared areas providing visitors with discreet viewing points.

The rhinos, named Sherino and Kabira, were reared on Solio Ranch in Kenya's Laikipia District. Their purchase was the result of a fund-raising campaign initiated by Rhino Fund Uganda, a non-governmental organisation established recently by the Desmonds, a German volunteer couple now resident in Uganda.

The Fund's appeals elicited substantial contributions from both the Kampala branch of the ITT Sheraton Hotel chain and the Ruparelia Group of Companies, also based in the city. The rhinos' holding facility was also developed with help from the Kampala Sheraton Hotel.

Prior to their move, the two pachyderms – and their human minders, both over the journey and in Uganda – underwent thorough preparations aimed at minimising stress to the animals



© YOLANDE OULES - WILLIAMS / EAWLS

during the transfer-*cum*-acclimatisation period, while also ensuring that all their dietary requirements would be properly met.

White rhinos are one of the world's most endangered species. Having no natural enemies besides man, poaching and habitat loss are the principal threats to their continued survival. Today, fewer than 8,000 white rhinos are thought to remain in the wild.

White rhinos are also among the largest of all land animals. Adults may stand 1.8 metres tall at the shoulder and weigh more than three tonnes. They once ranged freely over

grasslands and savannahs across Africa, between the southern Sudan and South Africa.

According to Petra Schaefer of Rhino Fund Uganda, the country's indigenous rhinos – black and white – became extinct about 20 years ago: a casualty of the rampant poaching that accompanied the political chaos of the late 1970s. The last Ugandan white rhino was reportedly gunned down in the country's West Nile region by an American founder of the Kuluva Hospital for Leprosy.

Until then, countless generations of rhinos had frequented the area now called Uganda. Indeed, the fossil record

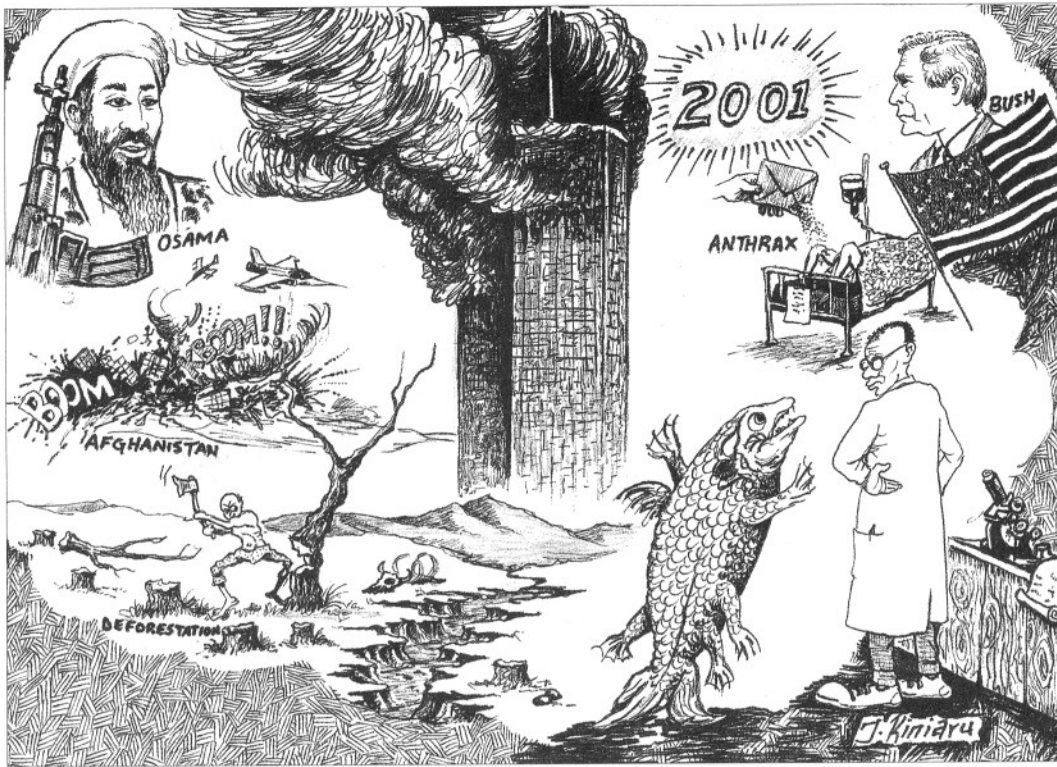
shows that rhinos – of at least four genera – had existed here since the early Miocene, going back some 23-million years.

This year's arrival of the two white rhinos marks the first step in an ambitious reintroduction programme envisaged by Rhino Fund Uganda. The anticipated next step, says UWEC's Beti Kanya, will be to import as many as 20 eastern black rhinos. A secure sanctuary for these animals is already being developed – on an 80-km² private ranch in central Uganda's Luwero District, where breeding programmes are expected to be put in place.

Some critics contend that Rhino Fund Uganda's efforts are premature, however. They argue that the habitats in Uganda that are best suited to white rhinos, in particular, all lie in either West Nile or Karamoja, both regions where the animals' security cannot yet be guaranteed.

Rhino Fund Uganda remains anxious to build further on the conservation successes achieved in South Africa and – more recently – in Kenya, now one of Africa's leading exponents of rhino conservation. Like Uganda's, Kenya's rhino herds were decimated in the 1970s and early 1980s. Kenya's Save The Rhino project, launched in 1984, was instrumental in stemming the spate of poaching that slashed the country's rhino count from about 20,000 in 1970 to just 400 in 1983.

Solio Ranch, home today to the highest concentration anywhere of black rhinos, has been a major force behind the rhino's recovery in Kenya. Now, some of that success is coming to Uganda.



© JOSPHAT KINIARU (with apologies to ILLINGWORTH, in London's *Daily Mail* of 1 January 1953)

'If this is the best you can do after 400-million years, then throw me back at once.'

'So unrevised...'

Consider now the coelacanth,
Our only living fossil,
Persistent as the amaranth,
And status quo apostle.
It jeers at fish unfossilized
As intellectual snobs elite;
Old Coelacanth, so unrevised
It doesn't know it's obsolete.

— Ogden Nash (1902-1971)

As a bizarre relic from the age of the dinosaurs, the coelacanth is an obvious enough candidate in the search for evolution's 'missing link' – that most distant of ancestors which first crawled out of the primordial oceans to conquer the land.

That distinction is now generally accorded to those distant relations of the coelacanths, the lung-fishes,

which are today widely thought of as the common prehistoric descendants of all tetrapods (or land-living animals, including of course human beings).

But the coelacanth, human-sized and possessed of hard, armour-like scales and strange, limb-like fins, has still lost none of its peculiar mystique.

The idea of a fish so adapted as to have changed hardly at all in 400-million years, even while

the world around it was being transformed beyond all possible recognition, has – ever since the fish's historic discovery in 1938 – not been lost on latter-day human satirists and cartoonists.

The capture – by the sea-trader Eric Hunt off Mayotte in the Comoros Islands in 1952 – of what was then only the world's second known coelacanth specimen spawned a rash of publicity. And London's *Daily Mail* newspaper, in its issue for New Year's Day 1953, carried a large cartoon by Illingworth featuring a disillusioned coelacanth imploring a bemused scientist to "Throw me back."

In the background to this cartoon were sketched the multifarious woes then seen to be afflicting humankind: Korea; Cold War; Indo-China; Malaya; Cosh boys – even Mau-Mau!

This year's discovery of Kenya's first coelacanth (*Story on page 24*) has inspired at least one Kenyan cartoonist to revisit – and update – Illingworth's original cartoon, with pictures of the woes this latest coelacanth, itself unchanged as ever, will have found besetting humankind today. Josphat Kimiaru's take on this is reproduced above – with due apologies of course. — GB

Massed ranks

Alan Binks is taken back by some nests on Pyramid Island

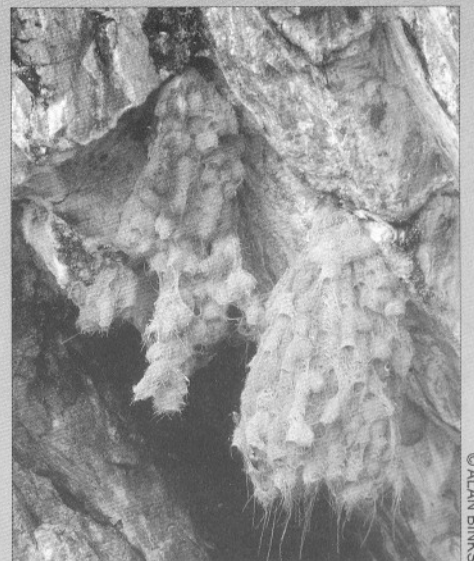
While on a safari recently to Lake Victoria with Willy Roberts, I visited Pyramid Island, which is located right at the meeting point of the borders of Kenya, Uganda and Tanzania. There, I saw more spotted-necked otters than I have ever seen in any one place. But I also came across an unusual colony of nesting weavers.

Under an overhanging rock face on one of the island's steep-sided slopes, were several large aggregations of nests. Now, this might not at first seem all that unusual, except that these were slender-billed weavers, *Ploceus p.*

pelzelni, which – according to Turner, Zimmerman *et al* – normally go in for nests that are "small, spherical, loosely woven, usually over water."

In this case, as can be seen from the accompanying photograph (right), the weavers had made their nests all together, in the manner of sociable weavers, only hanging from a rock face in a great communal mass.

The nesting site was being shared by white-rumped swifts, while serving as a roosting place too for Angola swallows – all in all, quite an interesting mixture of bird species.



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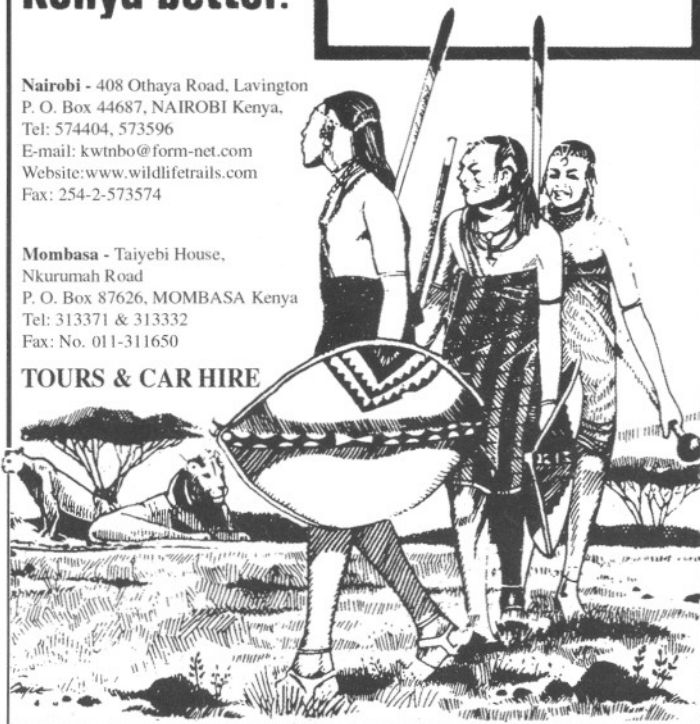
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TOURS & CAR HIRE



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Lion of fire

Ever felt what it must be like to face a charging lion? Well, this one – a young male in Kenya's Maasai Mara National Reserve – gave our party a pretty good idea of that feeling, during a recent safari.

Fortunately, however, we ourselves were not the object of the lion's charge, which was directed instead at some very persistent vultures that had

descended on its kill. We just happened to be seated (in the comfort of our Land Cruiser, mind you) directly behind the kill – and so right in the firing line, so to speak.

Witnessing this full-frontal assault was quite a chilling experience, even so.

Peter Davey
 P O Box 41822
 NAIROBI



GNANA GROSSE-WOODLEY

On the wrong track

You may wish to enlighten your readers that there is an error in the caption to the photograph of a cat's tracks on page 32 of your last issue (SWARA 24:2).

These tracks were in fact made by a cheetah, and not by a lion, as stated. The claw marks are clearly visible, as are the

indentations at the back edge of the large pad – which is specific to cheetahs.

I have always loved the Tiva area and Tsavo East in general. A great article!

Alan Binks
 Ker & Downey Safaris
 Box 24540
 NAIROBI

Special delivery

For George McKnight and I and two other fortunate couples, Friday 28 September this year was always going to be a memorable day. A picnic breakfast in the Maasai Mara National Reserve after dawn encounters with lions, elephants and many other lovely creatures was special enough in itself.

But what happened at around midday was a once-in-a-lifetime experience.

Our very knowledgeable driver/guide, a Maasai named Shieni from Kichwa Tembo Camp, heard over his walkie-talkie that there was a leopard in an area known as Double Gorge, just outside the reserve. Shieni knew the whereabouts of the most likely lair and positioned our Land-Rover on a bank facing the two boulders that frame the entrance.

From a distance of about 25 metres, we were able to look down into the small cave and to get our first glimpse of Zawadi, as this particular leopard is



© JONATHAN & ANGELA SCOTT

known. Through our binoculars we were admiring her great beauty when, quite suddenly, Zawadi got up,

turned around and became even more visible. Then, to our astonishment, she began to give birth!

As the sac emerged she doubled round to help it out, and we watched spellbound as she worked to free her cub. About 20 minutes later, the procedure was repeated, only this time Zawadi – possibly aware that she had an audience – moved so that delivery of the second cub was not so clearly seen. But the post-natal attention and the subsequent emergence of the cub were very well observed.

Sadly, none of our party had a camera with a sufficiently powerful lens to capture this remarkable sequence of events. However, followers of the popular BBC Television/Animal Planet documentary series, *Big Cat Diary*, may be interested to know that Zawadi, sometimes known as Shadow, is the daughter of Half-Tail, the leopard that featured so prominently early on in this famous series.

Christine Hart
NAIROBI

'Misleading' impressions

Jonathan and Angela Scott's recent article *Embattled Paradise* (SWARA Vol 24:1) is grossly misleading on several aspects of the Serengeti and its recent history.

On page 30, for instance, the authors report that the Serengeti's visitor numbers "plummeted from 70,000 a year to just 10,000," when we have detailed records showing that annual visitor numbers, while fluctuating quite dramatically over the years, were at no time anything like as high as 70,000 – and, equally, never anywhere near as low as 10,000. So, why the exaggeration?

On the same page, the authors write of there being 2,500 elephants in the Serengeti, when the highest figure documented in our records for the period is more like 2,000. The authors also state that "by 1986 only one vehicle was available for anti-poaching in the entire Serengeti."

The latter statement is completely untrue. I know this because I was at the time (1986) Head of the Serengeti's Anti-Poaching Unit. I can confirm that we never had fewer than *eight* functioning vehicles – as well as a light aircraft for aerial back-up and reconnaissance. So, where does the figure of "only one vehicle" come from?

The estimates given in the article for the numbers of active poachers ("close to 20,000") and animals killed ("upwards of 150,000") should have been accompanied by a reference to the period to which these estimates refer. That period was in fact 1992/93, and the story – I can assure you – is very different today.

The article says that the poachers "are providing meat for . . . one million people living within 45 kilometres of the Serengeti's western boundary."

The "one-million people" is an estimate based on 1988 census figures. The impression created is also distorted in

that the meat trade actually extends a long way into Tarime and across the country.

On page 31, the authors mention a programme of vaccinating domestic dogs along the Serengeti's western boundary "against rabies and distemper," when in fact no vaccination for distemper was ever administered.

The authors further state that today the Serengeti's main threat from the east is "loss of land to agriculture." This is not true either – we do not yet face any such threat.

I hope that in future SWARA will take more trouble to check the factual accuracy of the articles it publishes – and so steer clear of such embarrassing errors.

J N Hando
Warden In Charge
Serengeti National Park
Tanzania

The burning issue

Fire is a naturally occurring phenomenon. Volcanoes spit incandescent lava, setting forests and grasslands ablaze. Thunderstorms are accompanied by lightning flashes, which may sometimes ignite vegetation on the ground.

But that's about it. Early humans, using fire to hunt or to shape the savannas, are nevertheless assumed to have lived in harmony with nature. Whether they ever did live thus is a moot point. Today, though, nearly all the world's savanna fires are man-made.

There are modern guidelines for the controlled burning of grasslands. Fire breaks five metres across should be set in place around the area to be burned. A thorough search-and-rescue operation should be conducted beforehand, to save vulnerable creatures – such as tortoises, lion cubs and other young animals, not to mention ostrich eggs – which cannot escape from a fire.

A filled water tanker, in good working order and properly staffed, should be on stand by. There should be sufficient fire-beaters present. And the burn itself should proceed only under optimum conditions – of wind speed, air temperature, and air humidity.

In practice, these guidelines are generally ignored. Instead, a match or a burning ember is simply cast into a field, often with a boosting splash of kerosene to get the fire going. The resulting blaze is in most cases then left to burn away, wholly unattended.

The deliberate burning of savannas – whether controlled or haphazard – is now so common that the implications for the wider balance of nature are hardly even taken into account. It has become almost axiomatic that pastures should be burned, year after year, to 'bring forth new grass.'

Yet any detailed study of the effects on savannas of such repeated burning shows that we are ignoring the wider implications of this practice at our peril.

Consider the impact of burning on African savanna grasses. These grasses do not depend on organic matter in the soil for their nitrogen supply. Instead, with their above-ground parts, they fix atmospheric nitrogen. Most assimilated nitrogen in grasses comes from their decaying roots. Living roots stimulate decay in dead roots by exuding carbonaceous compounds. The growing roots immediately absorb the nutrients so derived, notably nitrogen.

Pastoralists do it. Some ranchers do it. And now, it seems, even some parks authorities want to do it. In particular, they want to burn areas of grassland in the Nairobi National Park to bring on a fresh 'green bite' of succulent young shoots through which to keep the animals inside the park.

Ingeburg Burchard urges extreme caution ...

Savanna grasses are deep rooting plants, usually tapping depths of about three metres but going down as much as 20 metres in some cases. The root-net of a single plant may, all told, occupy an area of 500 km²! Where the visible growth is burned (or mowed), the plants have to 'digest' their roots to produce the fresh shoots they need in order to survive.

This causes the root-net as a whole to shrivel, leaving fewer roots that, in addition, go down only a few centimetres. While most such roots are dormant, and not dead, 'hot burns' at the end of the dry season effectively put paid to their chances of recovery.

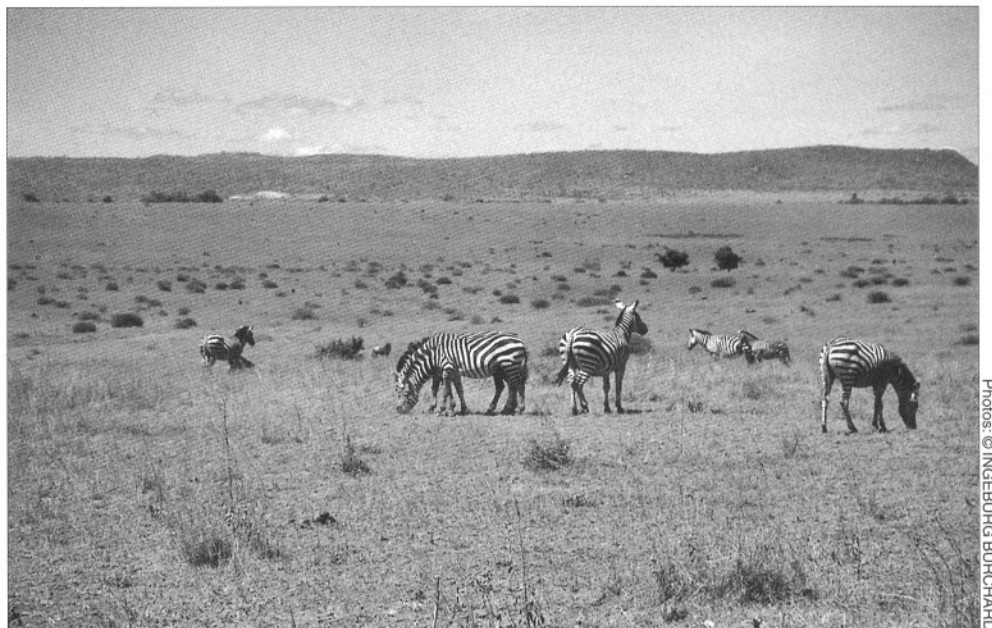
As the roots of grasses die back, so the *mycorrhiza* fungi too die off. This is a major blow to any ecosystem. For these *mycorrhiza* fungi are inextricably bound up with such root systems. Indeed, the more species of *mycorrhiza* there are, and the higher their concentration, the greater an area's plant diversity and productivity will be.

Mycorrhiza losses destabilise plant communities, as these fungi are responsible

for phosphorus production in plants. And, since African soils are notoriously phosphorus-deficient, the role of *mycorrhiza* takes on an added importance.

Grazing by wildlife stimulates *mycorrhiza* infestations, resulting in significant increases in root mass and visible plant growth. Grazing after burns, however, prevents grasses from recovering. The roots remain crippled and largely devoid of *mycorrhiza*. Reproduction occurs only in grass species propagating, not through seed dispersal, but from either stolons or rhizomes. The gene pools of the grasses are impoverished as a result.

Losses in root mass diminish the soil's capacity for water retention, and surface run-off increases. Repeated burns can trigger serious soil erosion, the loss of trees and shrubs, and the drying-up of rivers. For, ultimately, it is the grasses that keep the soil in place – and not the trees and bushes, as the East African naturalist Leslie Brown always used to insist.



Aftermath: Visibly overgrazed area of grassland within the Nairobi National Park, photographed in July 1999 – exactly one year after it was burned.

Burns in Nairobi Park

Burns create spaces for the seeds of woody plants to germinate. Contrary to popular belief, it is woody re-growth – and not that of grasses – which is stimulated by burning. The seeds of most palatable grasses, if they are to germinate, require the microclimate of a standing biomass. They cannot germinate where the standing biomass has been consumed by fire.

Impact of a 'green bite' on wildlife

The deliberate use of fire to spark the unseasonal emergence of a 'green bite' of sprouting green shoots for consumption by animals, wild or domestic, has many advocates.

Most studies examining the impact of such 'green bites' on their animal 'beneficiaries' have been limited to domestic livestock (which are better adapted than indigenous animal species to sudden dietary changes). Indeed, the impact of out-of-season 'green bites' on wild herbivores has hitherto been largely ignored.

Lush green shoots sprouting after a fire have a crude protein content of about 20 %, dropping to the normal level (4.8 %) over a three-month period. This very high protein content causes severe digestive complications in wild animals. Papillae in the stomachs of such animals typically need up to three weeks to adjust properly to changes in food quality.

Any sudden swing from hard, dry grasses to soft foliage, or even to mixed soft and hard fodder, causes intestinal imbalances. The

In October 1963, a man by the name of Pratt burned 0.6 hectares of grassland within Nairobi National Park in an experiment to evaluate grass productivity in the presence of wildlife and fire.

The burned area attracted zebras, wildebeest, kongonis, and Thomson's and Grant's gazelles in large numbers over the ensuing growing season. Then, in August 1964, both the burned area and a 'control' zone – of adjoining unburned grassland, identical in area – were fenced off. And, exactly two years later, the grass yields of both areas were measured and compared. The burned plot yielded 2,420 kg/ha, versus 4,490 kg/ha for the unburned plot.

These findings, while underlining the impact on a piece of grassland of both fire and a wildlife presence, are nevertheless biased – by the fencing nine months after the burn – in favour of a higher yield from the burned area. Pratt's conclusion was that grass is very sensitive to misuse during the growing season after a burn, and that even relatively few grazing animals can inflict disproportionate damage at this time.

Large areas of the Nairobi National Park were burned between 1967 and 1971, following a livestock expulsion in 1967. Mark Stanley Price, then Director of the African Wildlife Foundation (AWF), reported grass recovery rates of 53 %

and 59 % from different sides of the park, after one year of normal rainfall.

Helen Gichohi, now an AWF Programme Co-ordinator, did her Masters' thesis on fire in Nairobi National Park in 1989, carrying out extensive burns in the park in the early 1990s. She found a standing biomass of 513 g/m² on unburned plots, while another plot burned only once yielded 222 g/m². Although rainfall was high, the mean recovery rate – of 43 % – was lower than that found by Stanley Price. Gichohi noted, as others had before her, that grasses lose their roots when their visible growth is burned.

More plots were burned in July 1998, during David Western's tenure as Director of the Kenya Wildlife Service. The idea was to induce a 'fresh green bite', and so to lure game animals back into the park. Data from these burns have, sadly, never been made available. The grasses burned then were lush, green and flowering. So the fires were started with kerosene and left burning. The accompanying pictures – taken in July 1999, exactly one year after these burns – contrast the condition of one of the burned areas with that of an unburned area nearby.

These burned plots did not attract game until after the end of 1998. But when the migrant animals returned in January 1999, the usual pattern of overgrazing set in. Herbivores started congregating in these areas and continue to do so today.

Such persistent grazing robs grasses, and their roots in particular, of the chance to recover. No end to this uncontrolled 'trial' is yet in sight. The overgrazing goes on. The animals cannot be blamed for preferring the softer, sweeter 'pickings', even while enjoying these at the expense of destroying their own habitat. The root cause is fire – fire set by man.

– Ingeburg Burchard

Further information, and references, can be obtained from Ingeburg Burchard, of the Laboratory for Ecological Studies in Nairobi. A committee member of the Friends of Nairobi National Park (FoNNaP), Burchard has since 1984 been studying the effects of dung and fire on vegetation in and around the park. She can be reached at P O Box 14426, NAIROBI; or on Tel/Fax +254 (2) 442371.



Control: Nearby area of grassland that was not burned in July 1998.

high nitrogen content of fresh green shoots, for instance, kills the symbionts that wild animals use to digest cellulose aerobically. The animals begin to suffer from a sort of invisible malnutrition. They become prone to diseases. Ticks are a common sight on them.

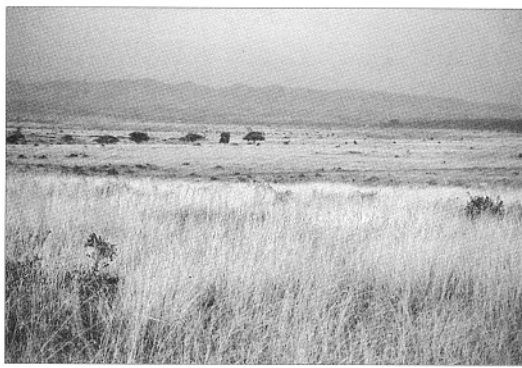
A phosphorus deficiency, stemming from the absence of *mycorrhiza* fungi from the root systems of fire-impacted grasses, is a far more serious long-term health hazard for wild animals, however.

A phosphorus-deficient diet leads to depressed feeding intake, lethargy, poor growth, weight loss, reproductive inefficiency, and early deaths among newborns. Typically, the coats of such animals become visibly dull and (sometimes, literally) off-colour. In domestic animals, this condition can be avoided through recourse to mineral-rich dietary supplements. But afflicted wild animals are, more often than not, simply left to die.

Fire and climate change

Gaseous compounds released by fires and carried far and wide by the wind have a considerable impact on the atmosphere. Carbon dioxide is perhaps the best known example.

Contrary to the oft-repeated theory, carbon dioxide emissions *cannot* be wholly reabsorbed by plant growth within a matter



© INGEBURG BURCHARD

of years. Quantities of this gas not sequestered in re-growth add to the build-up of greenhouse gases, while there remains – permanently in the atmosphere – a pall of carbon dioxide resulting from incessant burning around the world.

Other gaseous products of biomass burning include methane and methyl bromide, which both threaten the earth's ozone layer. While livestock animals release large amounts of methane, an especially aggressive greenhouse gas, wild animals produce hardly any methane.

The gaseous fall-out of biomass burning is fairly well researched. But scant attention has been paid to the accompanying biospheric interactions. Only recently have scientists become aware, for example, of the extent to which the soot particles in smoke are impacting on global climate and the hydrological cycle.

In February this year, climatologists sounded an alarm when they declared that soot particles from biomass burning were reducing cloud cover. 'Cloud burn-off' was occurring, they said, as solar radiation was being absorbed by black-grey soot particles in clouds. This was heating the water vapour load, causing it to evaporate into the upper atmosphere instead of falling as rain.

'Cloud burn-off' is responsible for suppressing rainfall over thousands of kilometres in all wind directions. Biomass burning in India, for instance, may lead to 'cloud burn-off' over the Indian Ocean. Rain-bearing clouds bound for eastern Africa on the monsoon winds may vanish before they reach the continent. A total rainfall shut-off induced by a forest fire in the DR Congo has been documented.

'Cloud burn-off' is also hastening glacial retreat, while causing rises in sea surface temperatures and aggravating atmospheric warming generally.

In thunderstorms, smoke has the effect of reversing the electrical polarities, so actively sparking additional cloud-to-ground lightning strikes, flashes that can ignite yet more fires on the ground. With the exception of fires caused by erupting volcanoes, humankind can create – and probably has done all along – the conditions for even supposedly 'naturally occurring' fires! ❦

The Lewa 'fire experiments'

The use of fire as a management tool was evaluated in a series of experiments conducted between 1992 and 1998 on the Lewa Wildlife Conservancy, a private fenced ranch north of Mount Kenya.

The ranch is famous as a rhino sanctuary and is grazed by both livestock and wildlife. The Lewa experiments were performed by a scientific team led by Prof Winston Trollope, the acclaimed 'fire guru of Africa'. The aim was to achieve, through controlled burns, 'increased utilisation of the open grassy plains, thereby attracting grazing ungulates away from the rocky kopjes, broken hillsides and steep river valleys, so decreasing the overgrazing [there].'

To this end, the team set out to 'improve conditions' on the grassy plains by decreasing the proportions of the two dominant 'increaser' grass species, *Pennisetum stramineum* and *P. mezianum* (bamboo grass), while increasing the proportion of

'Decreaser' species such as *Themeda triandra* (red oat grass).

The team's findings were published in 1998, in a report entitled *Assessment of Range Condition and Fire Ecology of the Savanna Vegetation on the Lewa Wildlife Conservancy in Kenya*. Its conclusions:

'None of the areas burnt on the Conservancy since 1993 recovered to the original condition represented by the standing crop of grass in the adjacent unburnt areas. All the burnt areas were found to have significantly lower standing crops of grass than the unburnt areas, indicating that a significant grazing intensity was being maintained on the burnt areas even after a period of three years since the last burn.'

The reported recovery rates were: 36.2 % one year after the burn; 69.3 % after two years; and 58.7 % after three years, relative to a standing crop of 5,124 kg/ha on adjacent unburned areas. Disappointingly, it was noted that there had been no increase in *T. triandra* at the expense of either *P. stramineum* or

P. mezianum. Even so, it was assumed (by visual assessment) that the rocky kopjes had shown improvements in their standing crops of grass.

The report recommends that only rangelands dominated by certain grass species, and having grass fuel loads exceeding 5,000 kg/ha, should be considered for burning. The report cites the conclusion of a study done in South Africa's Kruger National Park, which found that 'Burning once every eight years is too frequent and is resulting in a decrease in the species diversity of the grass sward.'

'It is proposed,' the Lewa report adds, 'that a maximum of 10 % of the total grazing area be considered for annual controlled burning. [This amounts to] a maximum burning frequency of once every ten years.' The burns at Lewa in 1997 were also monitored by satellite, to measure the atmospheric impact of the biomass burning. No evaluation of the satellite data has yet been published, however.

– Ingeburg Burchard

John Musina on the highlights of Kenya's 2001 World Birdwatch weekend ...

Global birdwatching's latest extravaganza has come and gone. The World Birdwatch weekend, a biennial event marked simultaneously (albeit in many different ways) all over the world, takes the form in Kenya of a countrywide bird-spotting contest – with a large and enthusiastic following.

World Birdwatch 2001 – held over the weekend of 6-7 October – was no exception. It attracted more than 200 people, grouped into 60-odd teams that, together, combed scores of birding sites in Kenya (including 30 important bird areas or IBAs) over the designated 48 hours.

The lists of sightings returned by the teams have since been undergoing ratification – by the event's local organisers, Nature Kenya and the Ornithology Department of the National Museums of Kenya – prior to collation of a final list of all the species seen.

To date, 653 of the bird species spotted over the 48-hour period have been confirmed. The jury is still out, however, on a further 79 of the species claimed. The final tally is expected to pan out at about 700 species – roughly the same as the number chalked up during Kenya's last Birdwatch weekend in 1999. This would represent close to 65 % of the 1,090-odd bird species on record for Kenya.

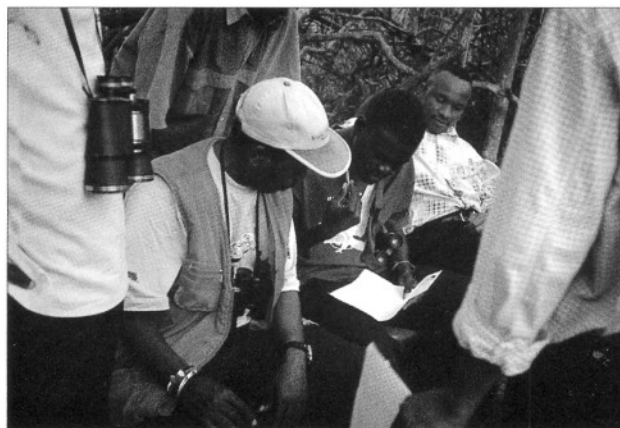
The exercise yielded its usual rich and fascinating crop of observations. Kenya's coastal areas were especially well covered, producing sightings of the white-backed night heron; the African pygmy goose; the white-fronted plover; the broad-billed sandpiper; the southern banded snake-eagle; the brown noddy; Bohm's spinetail – and all the Arabuko-Sokoke 'specials' except the spotted ground thrush.

A very rare migrant, the red-necked stint, spotted at Sabaki River mouth near Malindi, could not be included, as the specimen was seen just before the official 48 hours of

competition. A spotted thicknee seen at Nguuni could, if verified, be a first for the Mombasa area.

The Shaba team, described as having some 'serious twitching talent' on board, was the only team to hit the jackpot for vultures, seeing all the Kenyan species. These included a palm-nut vulture, normally a coastal species, seen on the Ewaso Nyirur River off the Samburu-Shaba circuit. Other triumphs included that splendid palaeartic migrant, the barred warbler, and a Pringle's puffback. The team then went off in search of the rare Williams's lark, an endemic that qualifies the area as an IBA, and – incredibly – they found one.

Britain's outgoing High Commissioner, Sir Jeffrey James, who had earlier – on 3



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October – hosted the official launch in Kenya of World Birdwatch 2001 – proved himself to be no slacker during the event proper. His 'twitching duo' with Chris Hill was instrumental in finding some notoriously difficult species, including Baillon's crane (at Peponi Dam, north of Nairobi), and both the grey-olive greenbul and the purple-crested turaco (on the Blue Posts Hotel grounds in Thika).

Two of the most challenging species for twitchers in Africa – the African finfoot (also seen near Thika) and the African pitta (at Arabuko-Sokoke) – were added to the list, in what count as 'mega ticks' for the proud spotting teams concerned. All but one of Kenya's turaco species (the black-billed) were seen over the weekend.

In western Kenya, a team on the Marich Pass was able to add Heuglin's courser to the list, along with the western violet-backed

sunbird, the lead-coloured flycatcher and the Boran cisticola. The highly localised yellow-billed shrike was another 'good tick' from the Sirikwa team.

The African broadbill, seen by the coast team at Mida Creek and at Roka Swamp, was a worthy addition. Only one member (the red-chested) of the flufftails, a genus always difficult to find, was reported. A Gambaga flycatcher was recorded for the first time in the Mwea National Reserve.


Central Kenya's Mukurweini Valleys yielded the weekend's only sighting of a Hinde's babbler, a globally threatened species endemic to Kenya. The Friends of the Kinangop Plateau, meanwhile, obligingly found their IBA's defining species, the Sharpe's longclaw – another Kenyan endemic.

In all, seven of Kenya's ten or so endemic species were seen. The bird-spotting teams missed out only on the Kulal white-eye and the Aberdare cisticola, both very localised but hard to find, and of course nobody has seen the Tana River cisticola for years. Other Kenyan endemics that were seen include the Taita thrush, the Taita apalis and Clarke's weaver.

From the South Nandi Forest came records of Waller's starling and Viellot's black weaver. And from the Crater Lake Sanctuary, a Naivasha team added the grey-crested helmet shrike (recently confirmed to be breeding there) to the 2001 list.

Members of the 'Munchpile' team concentrated on the 'beautiful big ones', notably the bush-shrikes – rosy-patched, grey-headed, and sulphur-breasted. But they, like many of the other teams, were not so good at ticking their cisticolas and larks.

Kenya's papyrus swamps, important as bird habitats, were sadly not very well covered this time. Perhaps Kenya's birders are getting too soft when it comes to having to put up with mosquitoes! From these habitats, then, we ended up with just the one representative – the northern brown-throated weaver.

Other interesting Birdwatch sightings included: the tree pipit, the sprosser, the tiny greenbul, the grey-winged robin, the eastern nicator, the mountain illadopsis, the chiffchaff, the wood warbler, the common whitethroat, the mouse-coloured penduline tit, the blue-mantled crested flycatcher, the marsh tchagra, the lesser blue-eared starling, and the rosy-breasted longclaw. 

John Musina is a research scientist with the Ornithology Department at the National Museums of Kenya.

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Rara avis

So shy a bird is the African pitta, *Pitta angolensis*, that many leading ornithologists – including some who have spent their whole lives in Africa – have never even seen one alive.

Such are the bird's demure charms, moreover, that getting to see at least one, over the course of a lifetime, has become an obsession for some of these ornithologists.

So, when – on 14 June this year – Moses Sairowa and John Keshe, working at the Mara Hyaena Project's Fisi Camp in the Talek area of Kenya's Maasai Mara National Reserve, found that they had an African pitta in their midst, they were both understandably overjoyed.

Sairowa and Keshe duly alerted Project researchers Stephanie Dloniak and Sofi Wahaj, who in consultation with Dave Simpson, of Royal African Safaris, who was then visiting the camp, were able to corroborate the identification.

The verification process was not overly taxing, as there is no other bird species that looks quite like a pitta, a genus that – not inappropriately – takes its

name from a Malaysian word meaning 'pretty one'. Plump and almost tailless, African pittas have unmistakable streaks of iridescent cobalt blue on their shoulders and rumps, along with bright red underbellies and under-tail coverts. They put their long legs to good use, hopping about very secretively among shadows on the ground, sifting the leaf litter for insect grubs and molluscs.

As it turned out, the Mara pitta was in no particular hurry to move on. "So we were fortunate," says Steph Dloniak, "in being able to observe the bird closely on six consecutive days, from 14 to 19 June, as it foraged around the camp." Dloniak was even successful – on the afternoon of 17 June – in taking several clear photographs of the pitta (including the one reproduced here).

Both researchers were surprised to learn, again from Sairowa and Keshe, that there had also been an African pitta at Fisi Camp in June 2000 – exactly one year earlier – and that it too had spent about six days foraging in and around the camp. This is an astonishing revelation in that

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Young albino

Researchers based at Fisi Camp, near Talek in Kenya's Maasai Mara National Reserve, have – between African pitta visits – also been following the progress of a young albino olive baboon.

The youngster was a baby still, clinging to its mother's belly, when Stephanie Dloniak and Jaime Tanner, of the Mara Hyaena Project, which runs the camp, first came across it – on 17 January this year – roughly half a kilometre from the camp.

Dloniak and others have since encountered the young albino on another five occasions – once in February, twice in March, and twice in June. All

the sightings have been within a three-kilometre radius of Fisi Camp. Dloniak's photograph (right) of the pink-faced but otherwise blindingly white



© CHRYSSEE MARTIN

Demure charms: the African pitta that came to the Maasai Mara.



© STEPHANIE DLONIAK

it would seem to imply that the visiting pitta, on *both* occasions, was one and the same bird.

Intra-continental migrants, African pittas are known to move northward from Mozambique and other southern African countries between the months of April and October. In Kenya the African pitta is primarily a species of coastal forests. As such, it has been spotted as far north as Watamu and Gedi and – most

recently (during the 2001 World Birdwatch weekend, see p.11) – in the Arabuko-Sokoke Forest. Since the early 1980s, however, sightings in Kenya have become ever more infrequent.

Over the years, individual birds have occasionally turned up far inland and in some very unlikely places, including southwestern Uganda and Tanzania's Ngorongoro Crater. In Kenya, sightings have been


reported from locations as far apart as Nairobi; Timau, near Mount Kenya – and even Kongolai, on the Suam River north of Mount Elgon. The majority of these birds have been exhausted or dead vagrants, way out of their normal range and doomed as a result.

Inland records for Kenya of stray African pittas are so widely scattered – over time, as well as geographically – as to be almost

arbitrary, explains Dr Leon Bennun, Head of the Ornithology Department at the National Museums of Kenya. "So the chances," he argues, "of your having two different specimens appear at exactly the same spot, and at the exact same time of year for two years' running, must – surely – be pretty remote."

Migrating pittas, heading northward, are believed to fly at night, navigating by the stars. They are, according to this theory, sometimes thrown off course by the distracting influence of artificial lights. "The two Fisi Camp sightings, if these were indeed of the same bird (although, of course, we can't

be certain)," says Dr Bennun, "could be a significant record, showing that not all stray pittas necessarily come to grief."

Has Dr Bennun himself ever seen a live African pitta in the wild? – "Not *yet*," he confesses, with more than just a twinkle of optimism. 

— reported by Gordon Boy

youngster riding on its mother's back, was taken on the afternoon of 13 March.

Albinism is not a common condition among baboons. Perhaps the best known recent case was that of a six-year-old albino male brought to the Nairobi Animal Orphanage in 1987. Singh, as that white baboon was called (after the Nyeri-based sawmiller who captured him in a forest on the lower eastern slopes of Kenya's Aberdare Mountains), went on to live for many years at the Orphanage, where he was seen by thousands of people. – GB

Flashback: 'Singh' (left), pictured at the Nairobi Animal Orphanage in 1994, was perhaps the world's best known albino baboon



© STEPHANIE DLONIAK



In Madagascar:
A young female
mongoose lemur.

©GERALD CUBITT/EMILIS

Lemur Dilemma

Some fossils unearthed in Pakistan are causing a bit of a stir in scientific circles. **Brijal P Trivedi** has the story ...

Scientists have discovered what they believe are the oldest known lemur fossils in the Bugti Hills of central Pakistan. The finding is controversial in that, if authenticated, it would suggest that lemurs originated in Asia, and not in Africa as commonly believed.

The fossil remains consist of a collection of tiny teeth resembling the teeth of Madagascar's modern dwarf lemur, *Cheirogaleus*. The 30-million-year-old fossils

pre-date all lemur fossils found in Africa. Scientist Laurent Mariveux, of Université Montpellier in France, whose team discovered the fossils, has described the find as "totally unexpected."

The team dubbed the new lemur *Bugtilemur mathisoni*. Its findings are published in the 19 October 2001 issue of the journal *Science*.

Today lemurs live primarily on Madagascar and on some nearby islands.


They are thought to have migrated to these islands on 'rafts' of floating vegetation. The question now is where did the migration begin?

Geological evidence shows that Madagascar separated from India about 88-million years ago, long before the origin of lemurs roughly 62-million years ago, making Asia an unlikely place of origin. Mariveux admits that a solution to this enigma still lies ahead. "But it is time," he argues, "to give the Asian scenario more serious attention."

Some scientists, however, have more fundamental doubts about Mariveux's work. They question whether these teeth really do belong to a lemur. One trademark feature of a lemur – a tooth 'comb', jutting out from the lower jaw – was not among the fossils discovered by the team.

"There simply isn't enough evidence to determine whether this is, or is not, a lemur," says William Hylander, director of the Duke University Primate Center in Durham, North Carolina.

A more likely explanation, says palaeontologist Richard Kay, also of Duke University, is that the fossil teeth came from a family of now-extinct Eurasian primates – *Sivaladapis* – that lived in India about 13-million years ago. *Sivaladapis* species have teeth similar to those of lorises, which are close relatives of the lemurs.

Mariveux's deductions depart radically from mainstream opinion, which doesn't mean that they are wrong, says Kay, only that they need more support. Suggesting that the fossilised teeth belong to a lemur is an "extraordinary claim," he adds, "and, as such, it demands extraordinary evidence." 

A River Prinia?

Birds have a way of sitting still for nobody. Just as advance copies of the comprehensive new *Stevenson/Fanshawe Field Guide to the Birds of East Africa* (reviewed on p. 57) were being rushed to Nairobi, a case was already being made for the presence in Kenya of a bird species entirely new to the region (and therefore not in the book).

The bird in question is a prinia – possibly the **river prinia**, *P. Fluvialis*. A pair of the birds was observed for two hours on 8 August this year in some dense scrub lining the Loprin lugga, rising in the Songot massif and meandering across the Lokitipi Plain near Lokichoggio in north-western

Kenya, near the country's border with the Sudan.

If confirmed, the sighting will go down as a first for Kenya, and indeed for East Africa. For river prinias are a Sahelian species, hitherto known only from a rather fragmented distribution across a narrow band of terrain extending eastward from Lake Chad into the west of the Sudan.

The observers – Britain's outgoing High Commissioner to Kenya, Sir Jeffrey James, and ornithologist Brian Finch – are no slouches when it comes to identifying birds. Both men point to marked differences between this prinia and the **pale prinia**, *P. somalica*, which is common in the thorn scrub around

Lokichoggio – although not along the area's seasonal watercourses.

Explains Sir Jeffrey: "The crown, nape and upper back were brownish, not grey. The supercilium was thinner, brighter, extending well beyond the eye, with the black face line thinner and stronger and running through the eye. The tail was perhaps 50 % longer [than that of a pale prinia]."

The bird's voice, richer and more varied than a pale prinia's, was singled out as another obvious difference. Sample calls were recorded by Brian Finch, for incorporation into his eagerly awaited CD on East African bird calls, due out in May next year.

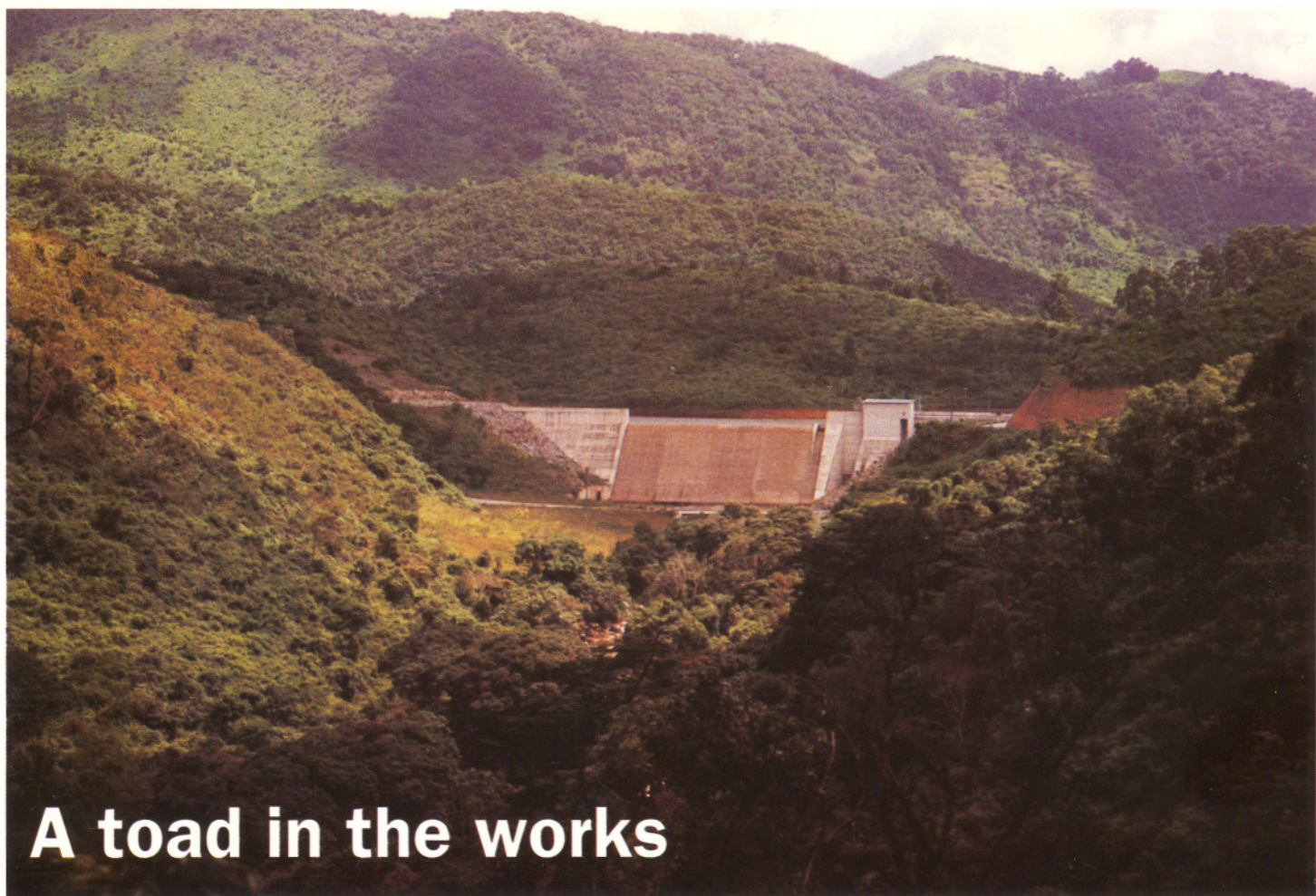
– GB



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A toad in the works

Continuing efforts to rescue a tiny species of toad in a bit of a hole are keeping the brakes on much-needed additional energy output from Tanzania's newest hydro plant. Fred Nelson reports.

Seldom has so much environmental controversy and global attention come to revolve around so obscure and unheralded a subject. Rarely, in the wildlife conservation field, have rhinos, tigers, mountain gorillas, and elephants all been unseated from the headlines by so lowly a creature.

The creature in the news is the Kihansi spray toad, *Nectophrynoides asperginis*, a little-known amphibian that – at barely one inch long – is no bigger than the size of a person's thumb.

Found only in the moist, shaded crevices of the Kihansi Gorge in the Udzungwa Mountains near Iringa, in south-central Tanzania, this diminutive toad has shot to prominence at a time, and in an episode, that has both captured international publicity and raised difficult conservation issues.

Spray from a waterfall tumbling over the Kihansi escarpment creates a scattered mist that allows these toads to move about, without fear of desiccation, over what

amounts to a highly specialised micro habitat. Hidden in this single locality, the Kihansi spray toad remained undiscovered until as recently 1996. Today, the species' entire population – put at roughly 12,000 – is thought to have a total range of little more than two square kilometres.

Precious little is known yet about this tiny toad. But it is reputed, unusually, to give birth to live young, rather than to lay eggs.



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Tanzania's ancient Eastern Arc mountains, which encompass the Udzungwa range, are noted global biodiversity hotspots. They support many endemic life forms that – like the Kihansi spray toad – occur nowhere else on earth. As rich biologically as they are physically remote, these areas may yet be found to host other species still unknown to science.

The toad depends for its continued survival on the preservation of its exceedingly limited habitat. The controversy it has sparked in Tanzania stems from the fact that the river feeding its waterfall home also feeds the Kihansi power plant, a major hydro scheme providing Tanzania with essential energy supplies. This plant has a maximum generating capacity of about

The 25-metre Kihansi Dam in Tanzania's Udzungwa Mountains (top left) has put paid to the unique, spray-dependent habitats of the spectacular Kihansi Gorge (top right). For the Kihansi spray toad (left), this means almost certain extinction. Right: Sprinklers, in place over what little remains of the threatened toad's habitat, are being used in a bid to mimic the effects of the waterfalls.

180 MW – in a country whose national grid boasts an overall capacity of little more than 400 MW.

Since the plant's commissioning early last year, water has been specially diverted to prevent the toad's waterfall habitat from drying up as the result of reduced water flows, an eventuality that would spell certain extinction for the species.

During last year's protracted drought, when hydroelectric energy was in desperately short supply and rationing and electricity blackouts plagued both Tanzania and Kenya, a flow of water of two cubic meters per second – enough to generate about 15 MW of energy – was being diverted into a temporary spray mechanism designed to provide the toads with adequate moisture.

Some international environmental agencies have since determined that this level of diverted flow is insufficient. The minimum flow needed to ensure the spray toad's survival, they say, is seven cubic meters per second. This would entail a sacrifice of 52 MW – more than a quarter – of the plant's generating capacity. But such an option has been ruled out on the grounds that it would render the plant's operations economically unviable.

The situation is complicated by the fact that the US\$ 272-million Kihansi plant was constructed with funding from the World Bank and European bilateral agencies, as part of ongoing efforts to bridge the critical shortfall in Tanzania's energy supply capacity. If prevented from operating at its full capacity, this project will have been an enormous waste of money, leaving Tanzanians no better off than they were before.

The international donors, for their part, are conscious of the need to be seen to be upholding biodiversity values by mitigating any environmental consequences of the projects they support. The World Bank has, after all, been upbraided often enough in the past for its part in funding environmentally dodgy, or destructive, developments. Such, at times, has been the barrage of criticism levelled at the Bank, that its officials are understandably anxious to avoid provoking controversy or exposing the agency to further opprobrium.



By funding the construction of a plant that may be the direct cause of extinctions of species such as the Kihansi spray toad, the World Bank could find itself in the political firing line, irrespective of what long-term economic benefits such a project might hold in store for a developing country like Tanzania. Yet, because the Tanzanian government is so heavily dependent on the likes of the World Bank and other donor agencies, it has little option but to heed the outcome of deliberations between the donors



and the international environmental community on the toad's eventual fate.

The Tanzanian government thus finds itself caught between a rock and a hard place; its public needs the electricity from the Kihansi plant, yet external pressures and the need to maintain good relations with donors dictate that due priority should be given to ensuring the toad's survival.

Tensions have abated somewhat with the ending of the drought and onset of the rains. Long-term prospects for the Kihansi spray toad remain uncertain, however. Water retention by the new plant is believed to have reduced down-river water levels by 75 %. International conservation watchdog bodies have rallied in search of a solution that will preserve this species. To this end, hundreds of toads have been collected and shipped to zoos in the US for captive breeding.

Relocation of the toad to other similar habitats in Tanzania is seen as the most promising option for conserving the species. Several prospective sites are now under investigation. But it is by no means clear whether such a highly localised species will survive in any other environment. There is undoubtedly a reason why this toad exists nowhere else but in this one small area.

Captive breeding and relocation programmes are seen as necessary contingencies. Continuing to divert water away from the Kihansi plant for the artificial sprayer at the waterfall is not a sustainable long-term option. The dilemma over the Kihansi spray toad is emblematic of the challenges facing biodiversity conservation in modern Africa in cases where the survival of a single species comes into direct conflict with a country's basic economic needs.

Tanzania's capacity to supply electricity to its citizens is limited even at the best of times. The additional capacity afforded by the Kihansi plant is potentially a major boon, given the general havoc caused by reduced hydroelectric output during last year's drought. Clearly, then, Tanzania needs this hydroelectric facility to operate at close to maximum capacity.

Not surprisingly, there is very little public sympathy for the obscure toad in Tanzania itself. For, as one Tanzania Electric Company (Tanesco) official has put it: "How can you tell a Tanzanian that a one-inch toad is preventing Tanesco from generating adequate power? Nobody will accept that as an excuse for the problem."

Tanzanian government officials, though, have publicly acknowledged that the country is obliged, under the Convention on Biological Diversity, to do what it can to prevent the extinction of the Kihansi toad. Yet, even as this toad's plight was attracting global media attention, virtually nothing was known about it in its native Tanzania – until, that is, *The East African* newspaper broke the story regionally in October last year.

It seems unreasonable, however, for the global community to expect a people as destitute as the majority of Tanzanians are today to make economic sacrifices on behalf of a minuscule and little-known *chura*, even if options like relocation and captive breeding fail.

The Kihansi spray toad's predicament is

reminiscent of one of the most famous conservation debates in American environmental history: a debate triggered by a near-identical conflict of interests between developmental progress and the preservation of an endangered species.

Construction in 1977 of Tennessee's Tellico Dam in was halted owing to the presence of a small fish called the snail darter which at the time was not known to exist anywhere else. This fish was clearly endangered by the project. After many years of controversy and heated argument between advocates and opponents of the dam, the US Congress invoked a special exemption set out in the Endangered Species Act to authorise the dam's construction. Compromise provisions saw the snail darters relocated to another area.

That was a watershed event in US conservation history, pitting the interests of a tiny, seemingly insignificant fish against a major industrial project. But it should be noted that, while provisions were made for relocating the snail darters to ensure their continued survival, the US government was at no stage prepared to forsake the Tellico Dam simply on account of this fish's presence.

Just as many Americans in 1977 found it difficult to justify suspension of a key infrastructure project because of the snail darter, so many Tanzanians today cannot fathom how generation of energy at Kihansi could possibly be suspended on account of a small toad.

A similar compromise, in the case of the Kihansi toad, may yet form the basis of a solution that balances a society's economic needs with the desire to preserve its biological diversity. If captive breeding in foreign zoos proves successful, then this should – in a worst case scenario – prevent the species' extinction. If a suitable relocation site in Tanzania can also be found, the chances of the toad's survival in a natural environment as well may be greatly enhanced.

Tanzanians will get their much-needed extra energy supplies, while at the same time a unique species will be preserved. The pressure off, the Kihansi spray toad may then be free to return to the state of obscurity and anonymity in which it has, until now, always lived.



Pictures: © ANNE OUTWATER



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KENYA, TANZANIA & UGANDA SAFARIS

No Show

Paul Kirui on the 'failure' of this year's wildebeest migration ...

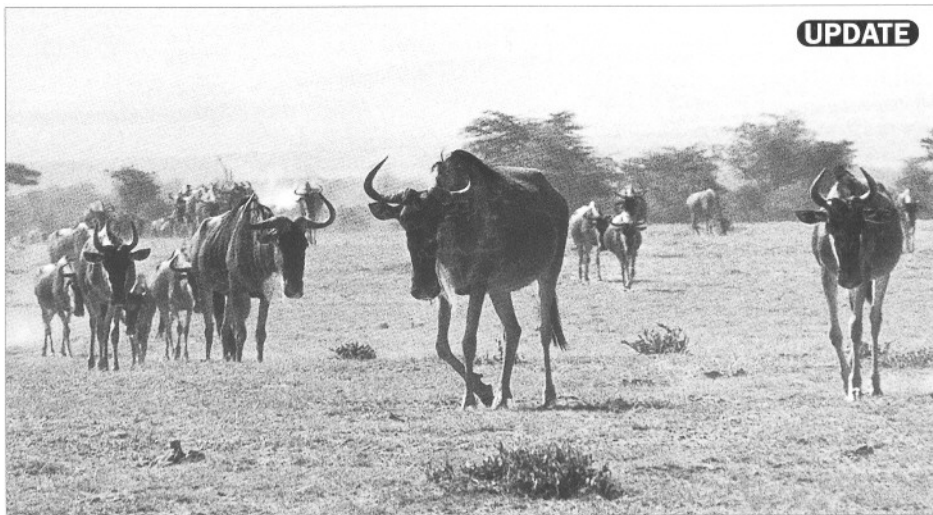
It has been called the greatest wildlife spectacle on earth, an annual marvel that must be witnessed at least once in a lifetime. And as such, it brings people from all over the world flocking to East Africa, year after year. But this year it didn't happen.

The event in question is of course the annual wildebeest migration, which sees hundreds of thousands of wildebeest (along with zebras and other herbivores) move northward *en masse* from the Serengeti plains in Tanzania to Kenya's Maasai Mara National Reserve and environs.

The advancing animals – sometimes up to 1.5-million-strong – stop at nothing, and it is their dramatic river-crossings that provide the undisputed highlight of such a migration, which usually occurs between late June and early August, with the onset in the Mara of the short rains.

The fact that that the Mara and the Serengeti get their rains at different times of the year has always been a driving force behind these annual migrations, as the animals instinctively move back and forth between the two areas in their never-ending quest for pastures new.

The scale of the migration varies widely from year to year, in response to fluctuating rainfall patterns. Indeed, the truly 'great' migrations people remember may occur only three, or four, times in a decade. But there



is, even so, generally a migration every year at least worthy of the name. This year's migration, however, was described by even some of most seasoned of Mara watchers as "perhaps the most disappointing in living memory."

A normal migration appeared to be on track in late June, when the 20,000-strong Loita wildebeest population (which generally precedes the main herds from the Serengeti) advanced across the Mara from the east, crossing the Mara River and entering the Mara Triangle.

The main migration from the south never materialised, however. And instead, all we could see were the same, relatively meagre Loita herds moving back and forth, although these animals *were* apparently joined – in early September – by a trickle of incoming wildebeest from the south. The huge Serengeti herds simply stayed away this year.

This 'no show' has been attributed to a decline in rainfall on the Kenyan (Mara) side

of the Serengeti-Mara ecosystem, and to a corresponding increase in the frequency of short, unseasonal showers on the Tanzanian (Serengeti) side. Indeed, almost *uniform* rainfall patterns have – most unusually, over the past two years – been reported on either side of the border.

Some, though, are quick to point out that, even during (and after) the *El Niño* floods of 1997/98, there were normal migrations. Indeed, there was even an extra migration in November–December 1998. So, perhaps there may be other factors – such as the customary June–July burning of northern Serengeti's grasslands – to consider. But that of course is not exactly a new phenomenon.

Whatever the reason for this year's mass stayaway, the effects – for the Mara's predators for whom the usual 'season of plenty' never came; or for the antelope species targeted by these predators as stand-in prey – are nothing if not alarming. 🐾

A carp of truth

Lake Naivasha's takeover by an almost entirely exotic ichthyofauna took a new turn earlier this year, with the discovery – on Crescent Island – of yet another species of alien invader.

On 12 March, a fish-eagle was seen struggling to bring ashore what, clearly, was a rather large fish, which with difficulty it began to eat. The observer, **Akira Gaymer**, was so intrigued by this that – as soon as the eagle had done with its meal – she went over to investigate.

What she found, according to a report in the July 2001 issue of *LNRA News*, the monthly bulletin of the Lake Naivasha Riparian Association, was the picked carcass of a fish measuring almost 70 cm from head to tail and weighing about six kilos, but of a kind altogether unfamiliar to her.

She took several photographs of what remained of the fish and has since shown these to various authorities. The initial verdict, published in *LNRA News*, was that the strange fish was a grass carp, *Ctenopharyngodon idellus* –

an introduced species raised on fish farms in Nyandarua and elsewhere in Kenya.

Other authorities, however, have since disputed this identification. Examining photographs of the partially eaten – and so rather badly damaged – fish, they have declared it to be a common carp, *Cyprinus carpio*. A flat, extended dorsal fin, quite unlike that of a grass carp (which is short and pointed), is said to be the betraying feature.

Either way, carps had not previously been listed among Naivasha's exotic mix of

resident fish species, which include the voracious large-mouth black bass from North America, tilapia of at least two different types, guppies, rainbow trout, killifishes (for mosquito control), and several other introduced species.

It now seems that the only indigenous fish species left in the lake is the straightfin barb, *Barbus paluolinosus*. Lake Naivasha's other, once common indigenous species, *Aplocheilichthys*, has long since vanished.

– GB

SIGHTINGS

Snow cover on Alexandra, second highest of the Rwenzori peaks (here seen from neighbouring Margherita), has thinned quite markedly even since this photograph was taken in 1985.

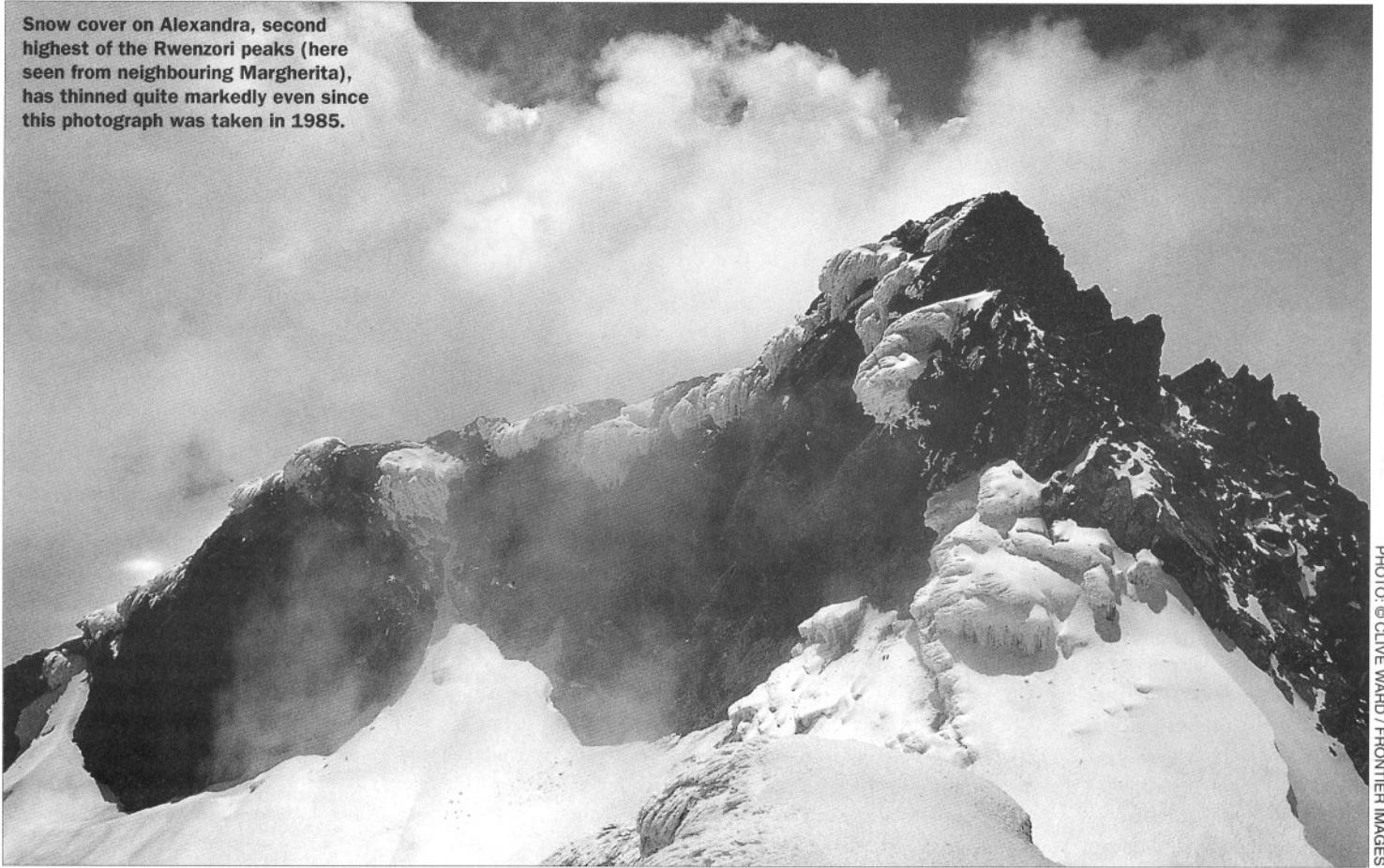
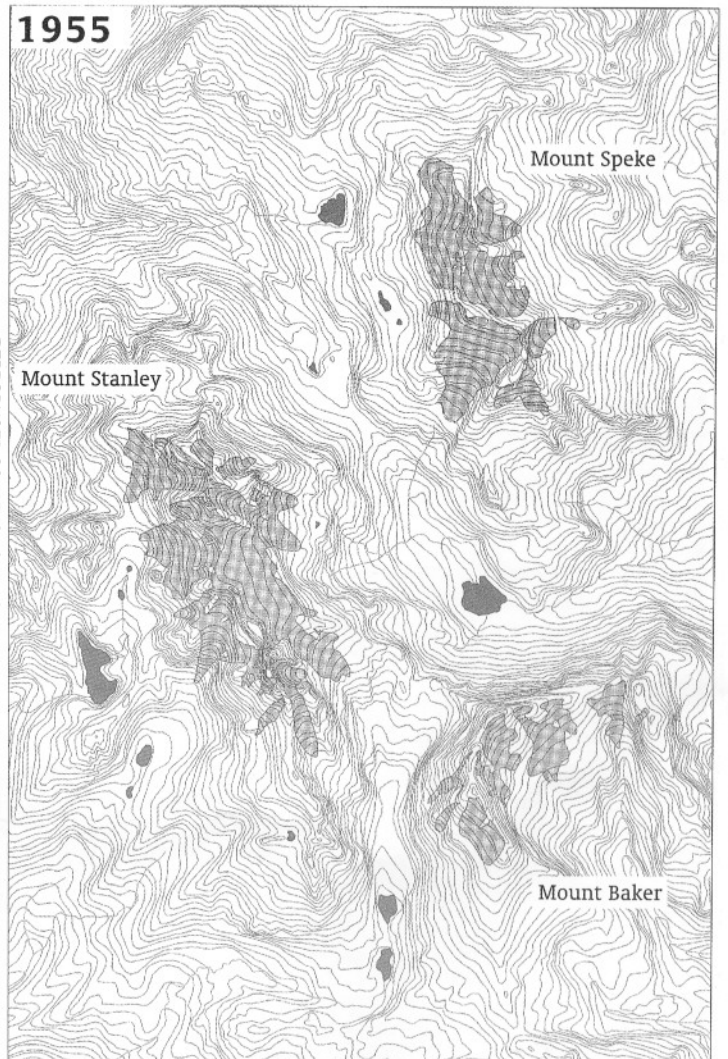
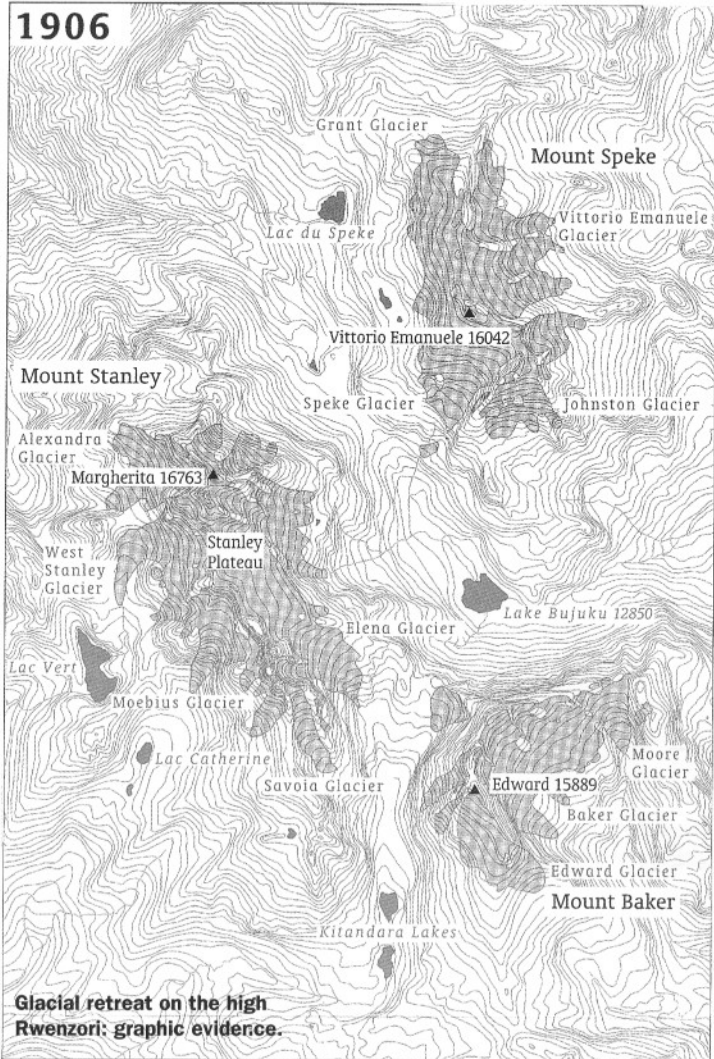


PHOTO: © CLIVE WARD / FRONTIER IMAGES



REPRODUCED COURTESY OF ELISABETH GARTNER / CHRISTIAN GEORGES CARTOGRAPHY.

Then and Now

New data, presented jointly by **Henry Osmaston** and **Georg Kaser**, chart the alarming rate at which the remaining glaciers on the high Rwenzori are receding – and disappearing.

Mais où sont les neiges d'antan?
(But where are the snows of yesteryear?)

– François Villon (1431-c.1465),
Ballade des Dames du Temps Jadis

‘Within another twenty years, we expect the entire ice-cap to have disappeared,’ was the startling verdict of some of the scientists attending this year’s International Conference on Climate Change in Marrakech, Morocco.

The climatologists were referring to Africa’s highest mountain, Kilimanjaro. But, on the evidence graphically set out in another recent study, entitled *Rwenzori Mountains National Park: Glaciers and Glaciations*, they might just as well have been referring to the Rwenzori Mountains – and to the fabled ‘snows that feed the Nile.’

The Rwenzori range, straddling the Uganda-DR Congo border at the heart of equatorial Africa, is roughly 120 km long by 50 km broad. It rises to a central mass of six great mountains – Mount Stanley, Speke, Baker, Emin, Gessi, and Luigi di Savoia – which, collectively, boast a total of 24 major peaks that are higher than 4,600 metres (15,092 feet) above sea level.

The highest peak is Margherita, on Mount Stanley, which at 5,108 metres (16,759 feet) makes the Rwenzori Africa’s third highest massif, surpassed only by Kilimanjaro and Mount Kenya. Two of the Rwenzori’s other peaks – Alexandra, at 5,090 metres, and Albert (5,086

metres), to either side of Margherita on Mount Stanley – also rise above the 5,000-metre (16,400-foot) altitude mark.

The peaks on all six major Rwenzori summits, when these were first documented by the Duke of the Abruzzi expedition of 1906, were found to bear substantial – and apparently permanent – glaciers. By 2001, however, the glaciers on all but the three highest mountains – Stanley, Speke, and Baker – had completely melted away. Today, even the relatively few remaining glaciers on these higher summits cover barely a quarter of the area they occupied in 1906. And there are no glaciers at all on Mounts Emin, Gessi, or Luigi di Savoia.

The full extent – and shocking rate – of glacial retreat on the high Rwenzori is forcibly brought home in a striking series of maps and photographs that provide the mainstay of the *Glaciers and Glaciations* survey, compiled jointly by Henry Osmaston, of the University of Bristol in the UK, and Georg Kaser, of Austria’s University of Innsbruck. Indeed, the survey – published earlier this year – takes the form of a large, fold-out map of the Rwenzori (A1 size, scale 1:100,000) with the explanatory monograph on the reverse, together with several inset maps and photographs showing individual glaciers, as they appeared in 1906, 1955, and 1990.

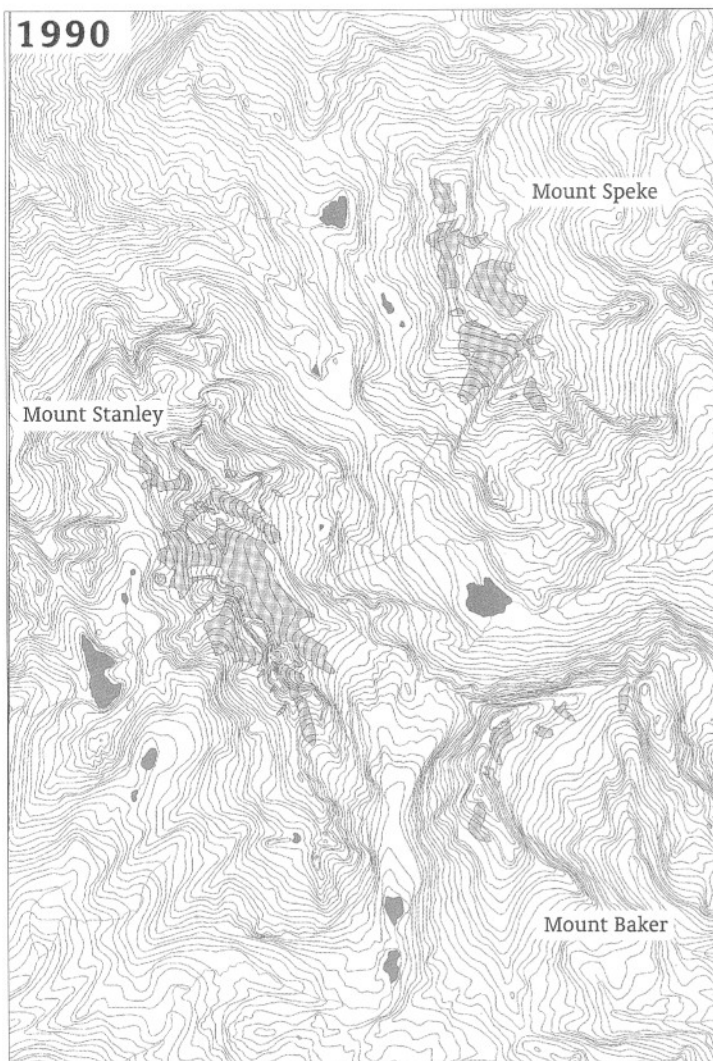
The survey’s most alarming revelation is the evident acceleration of glacial retreat on the Rwenzori over the past 40 years, relative to the period 1906 to 1955. Osmaston and Kaser attribute this to a combination of factors: decreased rime formation and fewer snow falls owing to diminished cloud cover and so greater exposure to sunlight; the higher temperatures associated with global warming, and increased deposition of airborne charcoal and ash from bush fires on the surrounding plains.

When the Duke of the Abruzzi and his party made their historic ascent of Mount Stanley in 1906, they had to hack a near-vertical passage through huge, bulging cornices of icy rime in order to get to the then-thickly snow-covered summits of Margherita and Alexandra. Even as recently as 1960, this direct ascent was classed by mountaineers as ‘Grade III to impossible, according to cornices.’ Today, say Osmaston and Kaser, such cornices “scarcely form at all,” while the peaks themselves are “just bare rock.”

Mount Speke’s once truly spectacular Speke Glacier, they add, has thinned out to the point of being almost unrecognisable from what it was when Vittorio Sella famously photographed it while with the Duke of the Abruzzi expedition. In 1906, this glacier terminated in a sheer ice-cliff more than 30 metres high. “But this terminus,” Osmaston and Kaser write, “has since retreated by 250 metres and been reduced to just a thin tapering tongue.

“If retreat continues at the present rate, then within a few decades,” conclude Kaser and Osmaston, “there are going to be no glaciers left on the Rwenzori.”

– GB



Copies of *Rwenzori Mountains National Park: Glaciers and Glaciations* are available, at a cost of UK£ 7.00 (US\$ 10.50) exclusive of postage, from Stanfords, 12-14 Long Acre, Covent Garden, London WC2E 9LP, UK; or from < sales@stanfords.co.uk >. A Kaser/Osmaston companion volume, *Tropical Glaciers*, is now also available – from Britain’s Cambridge University Press. All enquiries within East Africa can be directed to the Makerere University Institute of Environment and Natural Resources (MUIENR), at P O Box 7298, KAMPALA, Uganda; or < muienr@imul.com >.

Forest rescue plan

The Worldwide Fund for Nature (WWF) and the Uganda government have signed an agreement on a project to conserve forests in the west of the country.

The project marks the beginning of an ambitious region-wide campaign intended to safeguard the biodiversity of the Albertine Rift, the western arm of Africa's Great Rift Valley.

The project's initial, Ugandan phase will last for a year, with UNDP/GEF funding of US\$ 335,000. Implementation will be by the WWF, in collaboration with Uganda's Ministry of Water, Lands and Environment and other local stakeholders.

The Albertine Rift is not only a great natural barrier; it is, over its entire length, also a major political frontier between countries, separating Uganda from the Democratic Republic of Congo in the north, and Tanzania from Rwanda, Burundi, DR Congo, and Zambia in the south.



© TOM BUTYNSKI

Many of the Albertine Rift forests, because they straddle this often war-ravaged frontier zone, have been very difficult to monitor, let alone preserve. The result is that precious little is known about a range of habitats ranked among the most biologically diverse on earth.

The importance of these habitats is stressed by leading naturalist Jonathan Kingdon, who is Honorary President of the Albertine Rift Conservation Society. "The volcanic origins, rapid contrasts in altitude, fertile

soils, heavy rainfall, and central position within Africa all conspire," Kingdon says, "to make the Albertine Rift one of the richest, most 'biodiverse' areas in the world for animals and plants."

Some of the Albertine Rift forests – such as Uganda's Bwindi-Impenetrable – are known primarily as haunts of the imperilled mountain gorilla. But these forests are noted too for their many endemic bird species, including some species – like the Itombwe (or Congo bay) owl –

with surprising, and little understood, Asian affinities.

The Albertine Rift forests have – like forests elsewhere – become increasingly fragmented in the wake of unchecked encroachment and habitat clearance for settlement. These human pressures are especially intense in an area where population densities – exceeding 1,000 people/km² in places – are among the highest in the world.

"In the face of such pressures, it is essential," says Dr Sam Kantyambwa, of the WWF's Eastern African Regional Office, "that action is taken now to save the area's remaining forests from degradation – and destruction."

Until now, he adds, there has been no conservation education in the area and very little dialogue, or collaboration involving conservationists, politicians and local populations. By joining forces with the Uganda government, the WWF is hoping to change all this. 🐼

– reported by Curtis Abraham

'Dream Sanctuary'

Realisation of the conservation dream that is Kenya's **Ngong Forest Sanctuary**, spanning some 600 hectares of remnant forest just outside Nairobi, looks to be drawing ever closer.

The ambitious fund-raising and public awareness campaigns set out in a business plan unveiled in March this year, are already bearing some fruit. The immediate aim is to raise the KSh 40-million (about US\$ 500,000) needed to implement Phase One of the sanctuary's development.

Initial developments are to include the construction of a perimeter fence complete with gates and supporting infrastructure and personnel, and the setting up of basic amenities, including reception areas and picnic and camp sites.

The overriding objective is to preserve this tract of natural forest and its wildlife, while providing for a variety of public activities and services of benefit

to all. The goal is for the sanctuary to be fully self-supporting within five years.

The Ngong Forest extends east (to Kibera) from where the Ngong Road thoroughfare skirts the Nairobi Racecourse. About 80 % of the forest is indigenous; the rest is disused plantation forest, made up mainly of old Eucalyptus (gum) trees. The forest's indigenous flora is surprisingly rich and diverse. Indeed, botanists have so far identified 316 plant taxa – more than double the count from nearby Ololua Forest. More than 120 bird species have been found to occur in the forest.

Once established, the sanctuary will offer a convenient location for nature walks, pony treks and other recreational activities, while providing a prime spot for environmental education outings by city schools. The former plantation zones are to be replanted, with a view to being able to make inexpensive forest products, such as building poles and firewood, available to local communities.

The project is the brainchild of the Ngong Road Forest Sanctuary Trust, a registered charitable body founded in 1993. The Trust's fund-raising events and appeals have, in total, so far elicited about KSh 7-million (the equivalent of roughly US\$ 90,000). Major institutional donors include the US-based Ford Foundation and the Estate of the late George Drew.

The latter has advanced KSh 2.5-million (US\$ 31,500) towards the construction of the perimeter fence, which alone is expected to cost KSh 14-million (US\$ 175,000). The Estate has reportedly pledged a further KSh 7.5-million (US\$ 100,000) towards this fence, on condition that the Trust is first able – itself – to match this sum.

– reported by Melanie Richards

Enquiries can be directed to the Ngong Road Forest Sanctuary Trust at < ngong@rugkenya.com >.



Male sitatunga in Saiwa Swamp National Park.

Sitatunga outpost

The veil is being lifted on a second Kenyan population of the retiring sitatunga antelope. **Jack Situma** explains.

It is among the shiest of all antelopes. And, after the water chevrotain of Central and West Africa, it is also one of the most aquatic. In Kenya, its range – east of the papyrus fringes and reed beds of Lake Victoria – was long thought to be confined to the tiny (three square-kilometre) Saiwa Swamp National Park near Kitale, which was promulgated in 1974 expressly for its protection.

It is of course the sitatunga, *Tragelaphus spekii*, renowned for its swimming prowess and for the elongated, splayed hooves that enable it to walk about on the surface of its marshy habitat.

Reported sightings, earlier this year, of sitatungas in another isolated Kenyan swamp, located in Nandi District more than 80 kilometres south of Saiwa, were greeted initially with disbelief. The location in question is the Kingwal Swamp between the Nandi Hills and the grounds of Baraton University, off the C39 main road about half-way between Eldoret and Kapsabet.

The swamp itself is a long, narrow strip of inaccessible, marshy terrain in an otherwise intensively farmed and settled area. It is, in most places, only about a kilometre across, while extending over a length of roughly 17 kilometres. The presence in this swamp of a “strange kind of antelope” was first reported to the Kenya Wildlife Service

(KWS)’s regional office by one of the Kingwal area’s long-time residents, Matthew Kipkel Maiyo.

A team of KWS field researchers – led by Robert Ndetei, and including Richard Odongo, Maurice Onyino and Kenneth Esau – then visited the swamp in October. They were soon able to ascertain that the “strange antelope” was indeed none other than a sitatunga. The team then set about trying to arrive at an estimate as to how many sitatungas there might be in this habitat.

Concentrating on a ‘study area’ covering a seven- by one-kilometre stretch towards the middle of the swamp, the researchers spent several weeks staked out between 6:00 a.m. and 9:00 a.m. and, again, between 5:00 p.m. and 7:00 p.m. at many different ‘watchtower’ observation hides. For it is only at these times that the shy, retiring antelopes emerge from the near-impenetrable cover of their reedy retreats. Over the greater part of each day, the researchers scouted around the outer edges of the swamp, looking for and counting the tracks left by night-grazing sitatungas.

Over the initial study period, the researchers at Kingwal saw only 21 sitatungas: five males, 14 females, and two juveniles. Then, applying census methods pioneered by Leslie Brown in 1969 to arrive at an estimate for a then new-found

Ethiopian sitatunga population, the team was able to conclude that there are “at least 30, and possibly even as many as 40,” sitatungas in the Kingwal Swamp. At Saiwa, by comparison, there are (or were, until recently) thought to be more than 80 sitatungas.

Robert Ndetei is careful to stress, however, that this is simply a preliminary estimate, and that more work needs to be done. “Young sitatungas are known,” he says, “to spend all their time hidden deep within their home swamps, not venturing out until they are quite big. So, while the Brown method of extrapolating a population’s size from limited sightings in difficult terrain is certainly helpful, the actual situation on the ground may yet turn out to be very different.”

The ‘Brown method’ takes into account, among other things, overlaps (important in that many of the antelopes seen on different days will, almost certainly, be the same animals), and assumes – once such overlaps have been corrected – that the number of individual sitatungas so identified represents only 10 % of the total population present. The method also puts forward formulae for correlating daily track counts with the likely size of a localised sitatunga population.

However many of the antelopes there are, the sitatunga’s confirmed presence at Kingwal has been welcomed by conservationists as lending important added scope to efforts to protect and manage the species in Kenya. But these antelopes, like sitatungas elsewhere in Africa, are already under threat – both from hunting gangs using snares and from the inexorable clearance and draining of their watery habitat, as cultivation to feed the burgeoning human population around the swamp continues to expand.

The Kingwal Swamp lies on government trust land. But some private landowners have erected permanent structures near the swamp, and already there are signs of unsustainable land use of the kind that – sadly – will jeopardise the continued survival of the sitatungas.

The KWS team, meanwhile, is working with the local Kingwal community and with officials at both the County Council and the national levels of government on a series of recommendations aimed at preserving the Kingwal sitatungas.

Kenya's first coelacanth

DISCOVERY

The 'living fossil' captured earlier this year off Malindi on the Kenya coast greatly extends the known range of this most unusual and special of fishes. **Gordon Boy** reports.

An extremely rare and unusual marine fish species has, for the first time, been found to occur off the Kenyan coast. The fish in question is a coelacanth, the living embodiment of a lineage of fishes that has endured, virtually unchanged, for hundreds of millions of years, surviving even the mass extinction of the dinosaurs roughly 80-million years ago.

One of these prehistoric fishes was captured earlier this year in the nets of a commercial fishing trawler operating off the Kenyan coastal resort town of Malindi. The trawler, the *MV Venture II*, owned by Alessandro Basta, with its captain, Suleiman Fahli, and his 28-strong crew, was seven nautical miles from shore when the fish was captured – at a depth of 185 metres.

No coelacanth (pronounced *see-la-kanth*) had ever before been recorded in East African waters.

The dead coelacanth, 1.7 metres long and weighing 77 kilogrammes, was in September handed over to the Department of Ichthyology at the National Museums of Kenya (NMK) in Nairobi. For nearly four months prior to this, it had been kept frozen – and in virtual obscurity – in the cold storage depot of the Mombasa-based fishery company, Wananchi Marine Products Limited, for whom the trawler had been working when the fish was netted – at noon exactly on April 26.

The bizarre-looking catch escaped wider public notice until late August, when – at the suggestion of Kenya Fisheries' Department Assistant Director (Coast), Charles Oduol – it was placed among the exhibits on the Wananchi Marine Products stand at the annual Mombasa Show. There, it was brought to the attention of – among others – Kenya's

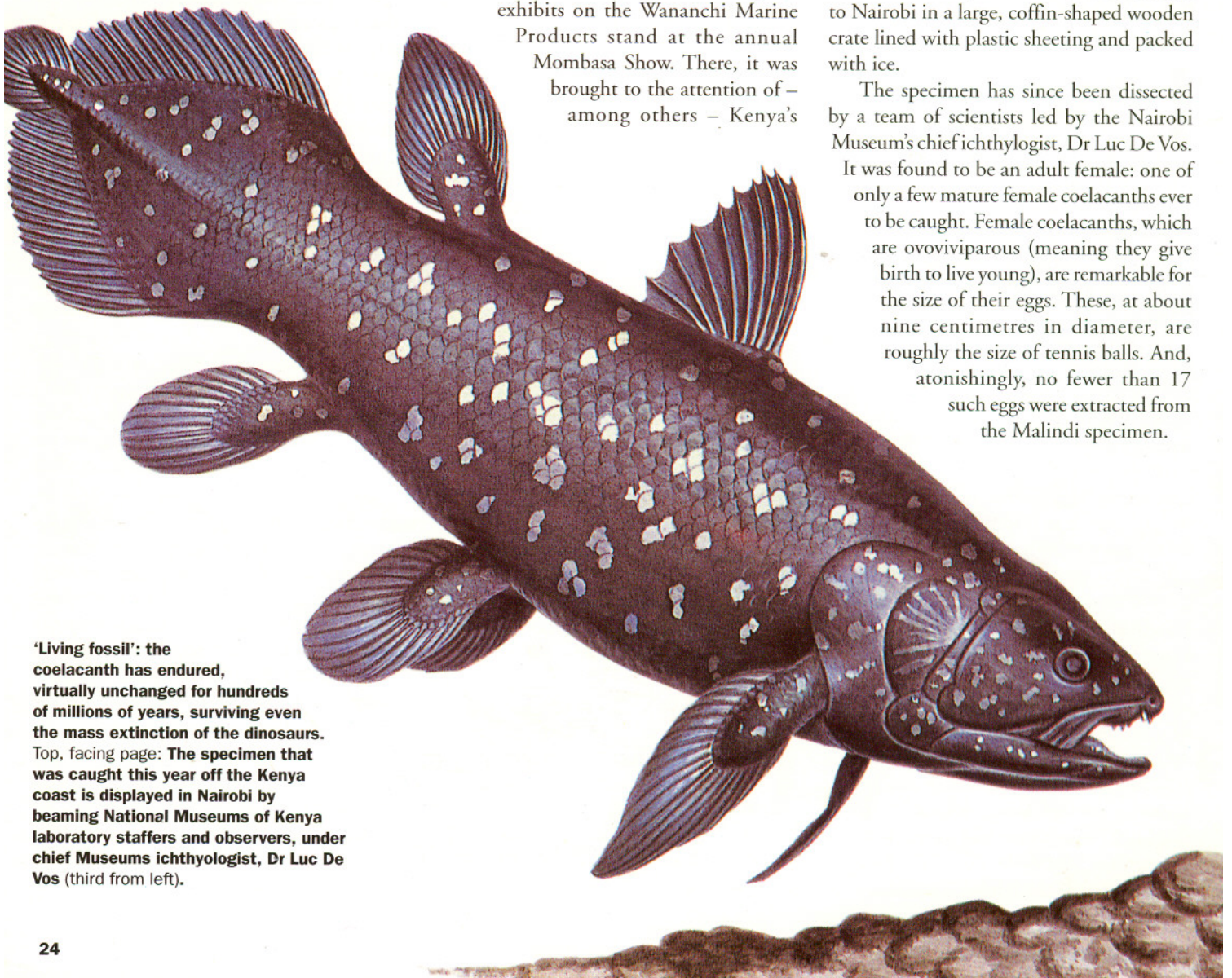
President Daniel arap Moi, who was touring the showgrounds after officiating at the event's opening ceremony.

The Kenyan President duly issued a directive to the effect that this fish was a natural asset to the country and should be preserved. So the specimen's existence was reported to Mombasa's Fort Jesus Museum. That museum, in consultation with the Kenya Fisheries' Department, contacted Dalmas Oyugi, a research scientist with the NMK Ichthyology Department in Nairobi, as Fort Jesus does not house natural history collections.

Oyugi then arranged for an NMK vehicle to take him and two of his Departmental colleagues, Michael Mburu and Joseph Gathua, down to Mombasa to collect the specimen. The trio took delivery of the coelacanth on September 12, transporting it to Nairobi in a large, coffin-shaped wooden crate lined with plastic sheeting and packed with ice.

The specimen has since been dissected by a team of scientists led by the Nairobi Museum's chief ichthyologist, Dr Luc De Vos.

It was found to be an adult female: one of only a few mature female coelacanths ever to be caught. Female coelacanths, which are ovoviviparous (meaning they give birth to live young), are remarkable for the size of their eggs. These, at about nine centimetres in diameter, are roughly the size of tennis balls. And, astonishingly, no fewer than 17 such eggs were extracted from the Malindi specimen.



'Living fossil': the coelacanth has endured, virtually unchanged for hundreds of millions of years, surviving even the mass extinction of the dinosaurs.

Top, facing page: The specimen that was caught this year off the Kenya coast is displayed in Nairobi by beaming National Museums of Kenya laboratory staffers and observers, under chief Museums ichthyologist, Dr Luc De Vos (third from left).



Photos: © Department of Ichthyology / NATIONAL MUSEUMS OF KENYA

Tissue samples taken from the fish are now undergoing DNA tests, to determine whether this fish is related genetically to the coelacanths that occur around the Comoros Islands, near Madagascar off the southern African coast. “The DNA sequences will tell us,” says De Vos, “whether this fish was simply a stray from the south, as we suspect; or whether there could be a more localised coelacanth population distributed between the East African coastline and, say, the Seychelles.”

The answer to this intriguing question is expected fairly soon, he says. Either way, the Kenyan find effectively extends the known range of coelacanths by more than 1,000 kilometres.

Until as recently as 1938, coelacanths were known only from ancient fossils – some dating back 400-million years. Their sudden disappearance from the fossil record about 80-million years ago suggested that coelacanths had become extinct at the same time as the dinosaurs.

The first living coelacanth was discovered off the eastern coast of South Africa, at the mouth of the Chalumna River near East London, in December 1938. That original type specimen was caught in a shark gill net by Captain Hendrik Goosen and his trawling crew

at a depth of 40 fathoms (nearly 75 metres). Neither Goosen, nor his crew, had any idea at the time of the immense significance of the “strange one” among their catch.

Fortunately, however, the odd-looking specimen was noticed by the then inquisitive young curator of the East London Museum, Marjorie Courtenay-Latimer, who was in the habit of sifting through the assorted hauls – of sharks and other fishes – brought in by Goosen’s trawler, the *Nerine*. On having the fish carried by taxi to her museum, Courtenay-Latimer alerted South Africa’s leading fish biologist, Prof James L B Smith, then based at Rhodes University in Grahamstown.

Smith went on to describe the fish – which he named *Latimeria chalumnae*, after

the young East London curator and the river mouth of origin, respectively – and to introduce the coelacanth to an astonished wider world. Indeed, the coelacanth’s discovery is still widely considered to be one of the most amazing zoological finds of the twentieth century.

Described as ‘living fossils,’ coelacanths have changed little anatomically over the past 400-million years. As such, they may provide scientists with answers to some intriguing evolutionary questions. They differ markedly from all other living fishes in having fleshy appendages, or lobes, at the bases of their paired fins, which move like arms and legs.

The coelacanth takes its common name from the Greek for ‘having a hollow spine’, a reference to its incompletely developed vertebral column. Coelacanths also have distinctive three-lobed tails, and are the only living creatures with a fully functional intercranial joint separating the ear and brain from the nasal organs and eyes, allowing the front part of the head to be lifted while the fish, which is a predator, is feeding.

Single coelacanths have occasionally been caught off both Mozambique and Madagascar, as well as off South Africa. Until 1998, however, the only known sizeable coelacanth population was that



occurring around the remote Comoros Islands, where typically they inhabit rocky reefs at depths of between 150 metres and 600 metres.

Coelacanths are usually steely blue in colour, but are flecked with white body markings from which individual fish can be identified and monitored. Adult coelacanths measuring two metres from head to tail and weighing as much as 98 kilogrammes have been recorded.

In July 1998, a second coelacanth population was discovered off the island of Manado Tua, near Sulawesi in eastern Indonesia, some 10,000 kilometres east of the Comoros archipelago. After a lengthy dispute among scientists, this second population was declared to be a separate species and was given the scientific name *Latimeria menadoensis*. The coelacanth turns out, not surprisingly, to have been familiar to generations of Sulawesi fishermen, who call it simply *raja laut*, or 'king of the sea.'

The coelacanth's 80-million-year absence from the fossil record has been ascribed to changes in the fish's habitat. Prehistoric coelacanths, at their most abundant 240-million years ago, were evidently much more widespread and appear to have lived in environments conducive to fossilisation.

Modern coelacanths, by contrast, are found predominantly in, and around, deep-living caves and rocky overhangs in vertical marine reefs skirting relatively newly formed volcanic islands, which are comparatively poor environments for fossilisation.

Further information on Kenya's first coelacanth can be obtained from Dr Luc de Vos at the National Museums of Kenya Ichthyology Department, e-mail: <nmk@museums.or.ke>.



© Department of Ichthyology / NATIONAL MUSEUMS OF KENYA

Even so, the Kenyan discovery may indicate that coelacanths are still more widely distributed today than has previously been supposed.

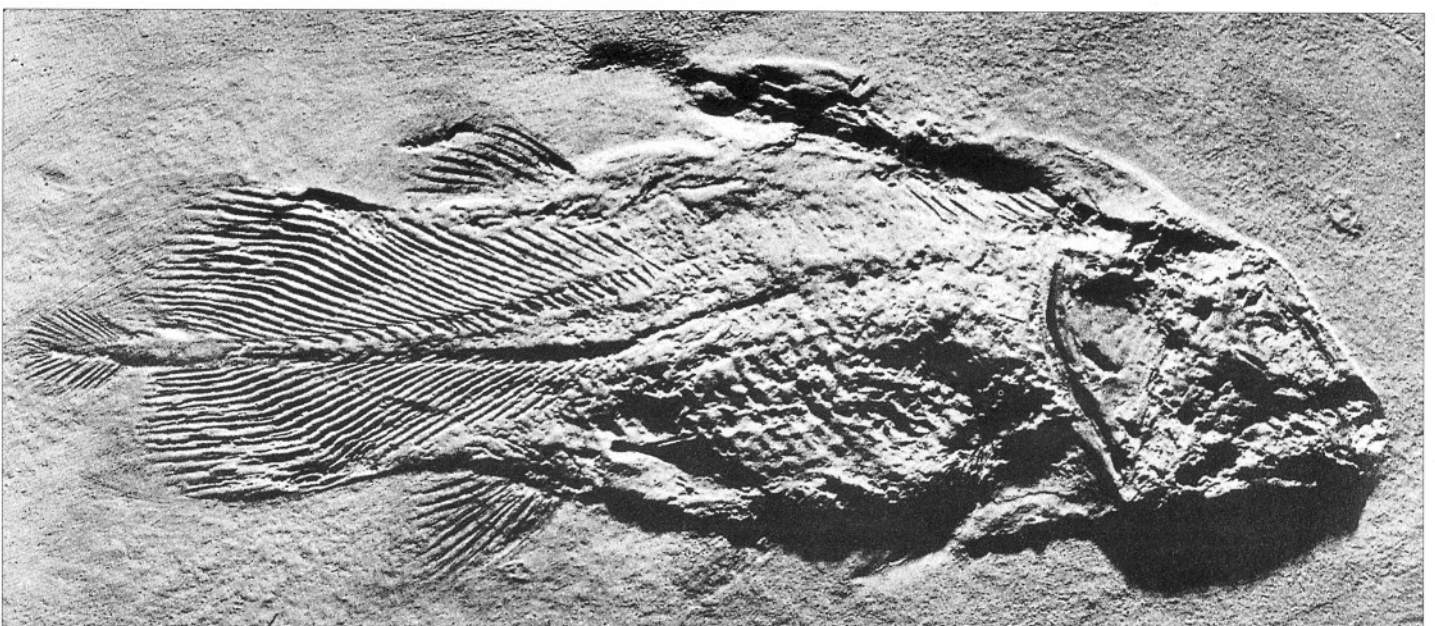
If the experience of other museums around the world is anything to go by, then Kenya's very own coelacanth, properly mounted and displayed, could become a major attraction for tourists, school parties and members of the public alike. For coelacanths are so very seldom captured that only a few museums around the world can boast of having one among their permanent exhibits.

The National Museums of Kenya (NMK) is therefore anxious, as soon as possible, to be able to put the Kenyan coelacanth – or at least a good casting of it (since the actual fish is rather badly damaged)

On the slab: Kenya's coelacanth (top right), one of remarkably few adult females ever caught, was found to be carrying no fewer than 17 well-developed, tennis-ball-sized eggs. Below: Coelacanth fossil dating from 200-million years ago, shows how little this 'dinosaur' fish species has changed over the ages.

– on public display in one of its main exhibition halls in Nairobi.

A special display case for the fish – lit up by spotlights and flanked by illustrated supplementary information panels and other educational aids and materials – is envisaged, along with additional castings for display at Fort Jesus in Mombasa and possibly at other educational establishments in Kenya.





Ocean-going hippo

© GLENN MATHEWS

The sight of a hippo lolling about among the waves out at sea always seems a trifle incongruous. So says **Glenn Mathews**, who – over the course of two successive mornings in August – watched a hippo doing precisely this off the Sabaki River

Delta, about six kilometres north of the Kenyan coastal resort town of Malindi.

At the time, local fishermen told Mathews that *three* hippos had ventured out into the sea. “But I saw only the one,” he points out, adding that an ocean-

going hippo is “no easy thing” to keep an eye on, least of all from the shore.

“This particular hippo was visible for only ten seconds or so at a time,” he explains, “while surfacing for breath at intervals of roughly three minutes. Many

of these brief appearances, though, were hidden from our view by the waves. So we tried bringing a vehicle down to the water’s edge to stand on for some much-needed extra elevation. But, even so, we had a real job keeping tabs on him.”

Photographing the hippo under these conditions proved especially difficult. Indeed, Mathews had to be content in the end with what he describes as some long-distance ‘record’ shots (one of which he has since been persuaded to let SWARA reproduce here).

This was not Mathews’ first sighting of an ocean-going hippo. “In 1994,” he says, “I saw another hippo out at sea – again off the Sabaki Delta. And since then, I have occasionally come across hippo tracks on the beach north of Malindi between the Sindbad and the Eden Roc hotels.”

– GB

New Tana ‘squeaker’

A previously unknown species of catfish, of the genus *Synodontis*, often called the ‘squeakers’, has been found to occur in the lower reaches of Kenya’s Tana River.

The new species, described from six type specimens collected in 1999, was earlier this year recognised officially – as *Synodontis manni*, otherwise known as the **feather-barbelled squeaker**.

Discovery of the new species – by scientists from the Ichthyology Department of the National Museums of Kenya (NMK) – brings to three the number of squeaker species known to exist in the Tana River. The river’s other squeaker species, *S. serpentis* and *S. zanzibaricus*, being less specialised in their habitat preferences, are both present in far greater numbers.

© LUC DE VOS / NMK Ichthyology Department



New to science: the feather-barbelled squeaker, *Synodontis manni*, is almost certainly endemic to Kenya’s lower Tana River.

Adult feather-barbelled squeakers may reach lengths of 30 cm from head to tail. Typically, they stick to deeper water near the middle of the river, where they congregate under floating logs and other stranded tree debris. NMK ichthyologists believe that the new-found species is

endemic to the lower Tana. Squeakers get their name, as any local fisherman will know, from the distinctive squeaking sounds they emit on being caught or when in distress. This sound is the result of the friction that occurs when the fish move their retractable spines against their pectoral girdles.

Squeaks have been detected under water, however, from fish that are not in distress, suggesting that the sounds may be used, not just as a defence mechanism, but also in regular communication.

The new squeaker species came to light during the recently completed World Bank GEF (Global Environment Facility)-sponsored survey of the fish composition and diversity of riverine habitats within Kenya’s Tana River Primate National Reserve.

– GB



Photos © SIMON THOMSETT

Elusive raptor

After more than thirty years of trying, **Simon Thomsett** finally gets to grips with a Cassin's hawk-eagle.

'So little is known about this eagle, we must leave it and pass on.' With these words, published in 1970, Leslie Brown – until his death in 1981 Africa's foremost raptor authority – concluded the entry for Cassin's hawk-eagle, *Spizaëtus africanus*, in his book, *African Birds of Prey*.

'Its nest has never been found,' Brown lamented, 'and I cannot even find a good description of its habits. Like many forest raptors, it seems both rare and difficult to observe. But it may be fairly common in suitable haunts, although the nest is likely to prove very difficult to find in tall primary forest – unless the birds give it away by uttering their (as yet undescribed) call.'

This was hardly the most helpful of pointers. But over the years I became ever more determined to find, and to learn something about, these mysterious eagles that were said to skulk in the depths of the impenetrable rain forests of Central and West Africa.

My hopes received a boost when, later that same year (1970), the nest of a Cassin's hawk-eagle, located in Gabon, was described for the first time. Another nest was found in the early 1980s – in southwest Uganda. Very little was recorded of the behaviour and breeding biology of these birds, however. So the species remained alluringly vague.

Then, during 1992's Pan African

Ornithological Congress in Burundi, I participated in a search for the elusive eagle in a forlorn patch of forest on a hill standing some 1,800 metres above Bujumbura, where there had been reported sightings of Cassin's hawk-eagles.

With one other delegate, I entered this denuded forest, searching every likely tree for an active nest. We came across chimpanzee nests perched, improbably, in gum trees. But we could find no sign of the eagle's presence. So we returned, exhausted, to where the rest of the ornithological party had spent the day: seated on a grassy hillside at the forest's edge.

These sedentary experts had, we learned, been fortunate enough to see a Cassin's hawk-eagle, flying overhead. Not all the raptor specialists in the group were entirely convinced. But there seemed to be enough of a consensus to verify the sighting. This came as a surprise to me, as I had not



expected the eagle's habitat to extend to such isolated fragments of relatively dry highland forest.

Three years later, in 1995, I urged two students from Denmark's University of Copenhagen to go to southwest Uganda to study one of the few Cassin's hawk-eagle nests then on record. But this nest was found to have been taken over by black sparrowhawks. The students spent several months in the vicinity, without catching so much as a glimpse of the hawk-eagle. Both had to leave eventually, after suffering infestations of mango worms.

In 1998, Bill Clark – a prolific author of papers and books on raptors – chanced upon a remarkable discovery. Rummaging through an old museum collection in Europe, he unearthed a single specimen of a Cassin's hawk-eagle, taken on – of all places – Mount Elgon in western Kenya.

In the library of the East African Natural History Society at the National Museums in Nairobi, I then found – in *The Ornithology of Western Kenya Colony* – an account of an expedition in the 1920s by Dr Hugo Granvik. This had notes referring to the specimen Clark had just located.

Dr Granvik was then working for the Swedish Biological Station, financed by the Swedish African Fund and based on the northeast slopes of Mount Kenya. The specimen, collected on 17 April 1926, was described – erroneously – as a juvenile male booted eagle.

The collector does admit, however, to being "unsure about the identification, because of differences between it and other specimens in the British Museum." He goes on to record the bird's wing, tail and tarsus measurements, all of which



Rara avis: Cassin's hawk-eagle (facing page, top and bottom) is Africa's only representative of the raptor genus, *Spizaëtus*. This Cassin's nest (above), almost 40 metres off the ground (top left) in the Ivory Coast's Tai Forest in West Africa, is one of only a few such nests ever to be found.

confirm the specimen to be a Cassin's hawk-eagle.

Interestingly, the National Museums of Kenya Ornithology Department still lists Cassin's hawk-eagle among the country's raptors, "albeit now certainly extinct." The question – of how we can be so sure of this species' extinction in Kenya – is an obvious, if intriguing, one.

In March 2000, I found myself in more likely Cassin's hawk-eagle territory. I had been asked by the Peregrine Fund, the US-based raptor conservation body for which I work, to assist Susanne Shultz, a research scientist who for the past three years has been studying an uncommonly dense population of crowned eagles, *Stephanoaëtus coronatus*, in the Ivory Coast's Tai Forest. My task was to capture and to radio-tag individual crowned eagles.

While familiar with Kenya's forests (what little remains of them), I was wholly unprepared for the giant trees of Tai, West Africa's largest protected block of rain forest. From neighbouring Liberia, across the border a few kilometres away, we could hear the rattle of sporadic gunfire each day from deep within a forest crawling with arboreal monkeys of an amazing variety of species.

It is little wonder, then, that the monkeys' major predator – the formidable crowned eagle – should also be abundant here.

Susanne, though, as a primatologist, understandably views the eagles from a perspective quite different from mine. Her pioneering study, on how crowned eagles have influenced the evolution of monkeys, perhaps even initiating human evolution, impressed me deeply.

Tai itself was full of wonders: glimpses of pygmy hippos; shrieking chimpanzees ambling through the camp; giant flying squirrels leaping at dusk and sailing down from the upper canopy; sightings of the long-tailed hawk. And at night, despite the ferocious lightning storms and the sound of crashing trees, the deep and edifying call of the virtually unknown Shelley's eagle-owl would penetrate my less-than-waterproof tent.

Only twice, though, did I get to see a Cassin's hawk-eagle: not surprising, perhaps, in a forest where visibility extends to just 30 metres, at most. I did find one rock shelf, however, from which I could see the sky. And here I set up camp for a few days. My reward was the sight of an adult Cassin's hawk-eagle flying, straight and low, directly overhead. My other sighting, again in flight, was from the nest of one of the crowned eagles I was attempting to catch.

On returning to Tai in March 2001, Susanne told me of her suspicion that a nest located close to the nearby Station du Recheché en Ecologie Tropicale could belong to a Cassin's hawk-eagle. This nest, when first reported by Susanne's Ivorian assistants in October 2000, was in use. The occupants, the assistants had stated, were definitely not crowned eagles.

This left only three realistic candidates: Congo serpent eagles, Ayres' hawk-eagles –

or Cassin's hawk-eagles. Any one of these species would have delighted us. The nest itself was nearly 40 metres off the ground. On reaching the nest tree, we got our first glimpse of the eagle – perched high in a neighbouring tree. There was no question. It was a Cassin's: the realisation of a boyhood dream.

The eagle did not disappoint. Powerful and stocky with a long tail and a small crest, it granted us a few minutes' clear viewing before taking off and vanishing over the treetops. In April we returned to the site and – on 6 April, after climbing the tree – we caught a fledged young male on the nest. We kept this bird in captivity for four days, during which time he became almost tame.

We then tried to catch the adult birds as well. From the nest, we got several good views of the pair displaying. Significantly, we also got to know their voice. But we were unable to trap either adult. So, on 10 April, we restored the youngster to the nest, and the next day we packed up and left Tai.

In this short time, we learned quite a lot about Cassin's hawk-eagles. Animal remains found in the nest showed the eagles here to live primarily on arboreal squirrels and hornbills. These are not easy animals to kill and may explain this eagle's very strong feet, which resemble – in miniature – those of crowned eagles. A remarkably wide tarsus gave our captive bird an unusually powerful grip for a raptor of this size.

Another striking feature was the size of the eyes, their exceptional dimensions suggesting that large eyes may be an essential attribute in the dark forest understorey.

Knowing the bird's call proved decisive in enabling us to find yet other Cassin's hawk-eagles. And, just as Leslie Brown had predicted back in 1970, this species turned out to be far less elusive than I – for one – had assumed before I got to know its voice. Voice detection led us to the vicinity of another nest, barely 14 km away from the first one, deep in the forest. We were able to pinpoint this second nest, eventually, after stumbling on a single eagle feather on the forest floor below.

Tai Forest would be an easy place to study Cassin's hawk-eagles, and Susanne Shultz is trying to raise funds to enable an Ivorian student to study the species. In the meantime, it may also be worth investigating whether there are any Cassin's hawk-eagles left in Kenya – on Mount Elgon, perhaps, or in the Kakamega Forest.



Nicety – or Necessity?

Nearly one-tenth of the world's known bat species are represented in Kenya. Yet until now, their importance – both ecological and economic – has been largely overlooked, says **Peter John Taylor**.

The sun is setting over the Maasai Mara's distant horizon. Most tourists are already gratefully sipping their sundowners. But, for one party, 14-strong, it is time to get to work. Frantically, they are erecting fine mist nets in a variety of pre-selected spots around the Mara River Camp.

The group members then don headlamps and point electronic gadgets expectantly up at the night sky. Bat detectors in hand, they are waiting for the coming of the nocturnal 'flying squad'.

Brittle clicks from the instruments signal the arrival of the night's first bats. "Got one," somebody cries out only minutes later. The group crowds around. A small furry bat squeals as it is plucked deftly from the net. Its soft fur is olive-coloured above, a bright yellow underneath. It has a pug-like face.

"What is it?"

"Yellow house bat."

"Of which sex?"

"Male – in reproductive state."

"The exact time? Forearm length? Ear measurements? Mass?" Other questions follow, in rapid-fire staccato. The answers, barked back, are just as clipped and precise.

"*Omigosh*," splutter several bemused bystanders.

The bat, its identity and vital statistics logged, is then released, with a luminescent light tag attached. The green light circles eerily overhead; a few turns, then the bat is gone, off downstream along the Mara River.

The bat detectors, meanwhile, click busily as they convert the bat's ultrasonic sonar – or echolocation – calls into a humanly audible frequency. A laptop computer connected up to one of the devices displays the calls directly as 'sonograms'.

So began an intriguing ten-day bat safari taking in both Kenya's Maasai Mara National Reserve and various locations in the biologically rich but little known Taita-Kasigau Wildlife Corridor between the Tsavo East and Tsavo West National Parks. The

survey involved bat biologists and avid conservationists from Bat Conservation International (BCI), South Africa's Durban Natural Science Museum (DNSM), and the National Museums of Kenya (NMK) Mammalogy Section.

Operated jointly by World Discovery Safaris and by East African Ornithological Safaris, the tour – led by BCI's Cullen Geiselman and the DNSM's Peter Taylor – yielded valuable insights into the diversity, biology, and sophisticated sonar systems of 24 of Kenya's 90-plus bat species. It also provided exciting, hands-on training experience for 'greenhorns' in the group and for local Kenyan guides and Museum scientists and technicians.

Gregarious migrant: The straw-coloured flying fox, *Eidolon heloum*, seen in portrait (top left) and feeding on a guava (above), gathers in tall, leafy trees in noisy day-time roosts many thousands-strong.



Photos: Merlin D Tuttle / Bat Conservation International

In all, 96 individual bats were caught, measured and released. Pivotal to the tour's success was the participation of the now-legendary Kenyan trapper-turned-naturalist-cum-ethnobotanist, Paul Kibochi (see *Separate Story*, p. 32). Paul it was who laid on all the field studio sets for *National Geographic's* 1986 feature on Africa's flying foxes (or fruit bats). He has also had a hand in several of the BBC's natural history documentaries.

Paul's great cunning and knowledge of bats and their habitats enabled our group to ferret out roost after roost – in old houses and rocky crevices and overhangs – and pointed us unerringly to perfect night-time netting sites.

His ingenuity proved decisive in allowing us to come to grips with one species of high-flying bat that had been the cause of no end of frustration. This species, clearly audible on our detectors, was overflying our camp near the Taita Discovery Centre, but at such

a height above the treetops as to be well beyond the reach of our conventional nets.

Paul and his fellow guides were not to be denied. Using long sisal poles lashed together with sisal rope, they erected several towering 'rugby poles', and devised an ingenious system for hoisting, and lowering, the nets to and from new and ever greater heights.

All this effort was amply rewarded. For, on night one: Bingo! We were able to catch and to lower one of these elusive bats for our inspection. It turned out to be none other than a giant African free-tailed bat, *Tadarida ventralis*, a rare and little known species that is named on the *Red Data List* of the World Conservation Union (IUCN).

Kenya's bat fauna, extending to 95 described species, is spectacularly diverse by world standards. By comparison, the whole of Europe boasts just 32 bat species, while Canada possesses only eight.

Globally, the Order Chiroptera (Greek for 'hand-wing') embodies close to 1,000 known species. This makes Kenya home to a staggering one-tenth, or so, of all bat species. And bats, astonishingly, account for fully one-quarter of all mammalian species! So Kenya represents a very considerable array of the many and varied ecological niches occupied by the world's bats.

Bats are classified in two major groups. There are the Old World fruit bats, or flying foxes, of the suborder Megachiroptera, which have dog-like faces, large eyes, and two claws on the wing, and which eat flowers, nectar and fruit. And there are the predominantly insect-eating Microchiroptera.

The latter, while somewhat smaller in size, have less prominent eyes and a single claw only on the wing. They may eat insects, fish, frogs, small mammals, fruit and nectar – and blood. Only three species of vampire bats, all restricted to Central and South America, specialise in drinking blood.



© DINO J MARTINS

Bat Man

Legendary cunning; Kenya's bat-catcher extraordinary, Paul Kibochi.

In the blazing Tsavo heat, high on a remote inselberg, a lone figure – lean, helmeted – clings precariously to the rock's almost sheer face. He is edging his way across to where a dark fissure splits the burnished gneiss. Once there, he pauses to adjust his helmet. Then, extracting a cloth bag, he waves down to us – and slithers into the crevice's narrow mouth.

Re-emerging eventually, he waves again and in half an hour he is back on level ground. "They're here," he says, "– those bats we've been looking for." Then, as if to dispel any doubt, he gently plucks a (surprisingly compliant) specimen from the bag, 'talking' to it as he does so. The bat, a female, duly has its vital statistics logged by the team of visiting scientists. Come nightfall, it will be released.

Feats like this have earned Paul Kabochi, Kenyan bat-catcher extraordinary, near legendary status among wildlife biologists and film-makers. Kabochi's knack extends well beyond bats, however. Indeed, he has travelled Africa, catching and taming animals for the likes of David Attenborough and Jonathan Kingdon, to name but two of his admirers. He has himself been the subject of a 30-minute documentary, *Der Tiermagier* (Animal Magician), made last year by Sam and Armin Dhillon for German Television.

Now aged 59, Kabochi has since 1992 been based at Sangare Safari Camp near Nyeri, where – between stints as a trapper and handler (often of venomous snakes and other dangerous creatures) on film sets – he works as a guide for East African Ornithological Safaris. That he is also a proficient ethnobotanist was brought home to his employer, Steve Turner, by a visiting party

of US Food and Drug Administration experts who, says Turner, were "amazed by the soundness, and breadth, of his knowledge of medicinal plants."

Paul Githinji Kabochi was born on Kenya's Aberdare Mountains in 1942, of mixed Ogiek and Kikuyu parentage. His first job, in 1961, was as a tracker on 'leopard control' duty for colonial cattle ranchers in what is now the Nakuru National Park. This was risky work, and Kabochi lost a chunk of one of his buttocks in a fight with a leopard. In an ironic twist, he was arrested in 1963 for possessing the pelt of one of the leopards he had been paid to kill. But, instead of being jailed, he was drafted into the Kenya Armed Forces and sent to the then Northern Frontier District to help track down 'shifta' bandits.

On leaving the army in 1966, he became a collector and skinner of specimens for the National Museums of Kenya, accompanying ornithologist John G Williams and other eminent naturalists on field trips all over East and Central Africa. During the 1970s, while still with the Museums, he prepared casts for the conservationist and sculptor of wildlife bronzes, Rob Glen. Under Glen, he was able to hone his taxidermy skills. And this work led to associations with – among others – Jonathan Kingdon and Alistair Fothergill, of the BBC Natural History Unit.

The surge of interest in wildlife filmmaking since the 1980s has placed ever greater demands on Kabochi's unique skills. A wild serval he can have eating out of his hand in just three weeks. "But a caracal," he says, "is much harder, and may take up to a year to tame."

– GB, with reporting by Dino J Martins

Kenya's eleven species of flying foxes vary considerably in size and appearance. There are giants such as the hammer-headed bat (known from the Kakamega Forest), whose mature males possess grotesquely inflated noses and call out loudly to attract females. And there is the migratory straw-coloured flying fox, which gathers in tall, leafy trees in noisy day-time roosts many thousands-strong. Then, at the other end of the scale, there are the very much smaller African dwarf epauletted fruit bats.

Research on different species of epauletted fruit bats, undertaken in Kenya by Merlin Tuttle, has shown that these bats serve as vital pollinators of baobabs and many other trees and agricultural crop plants. Tuttle also found that these bats act as important seed dispersal agents for a host of tree species, encouraging primary re-vegetation of cleared forests from the seeds dropped in their faeces.

Tuttle's work has further demonstrated that, contrary to popular misconceptions, fruit bats have only minimal negative impacts on mango harvests in Kenya's coastal areas. For, like humans, the bats prefer ripe fruit to under-ripe fruit, and most of the fruit harvested for human consumption is picked under-ripe.

Some of Kenya's insectivorous bats – such as the yellow-winged, Welwitsch's hairy bat and the butterfly bats – are attractively coloured or patterned. An astonishing variety in terms of body size; wing, tail and ear shape; echolocation design, and facial marking and ornamentation reflects the adaptive radiation of bats into a variety of distinct feeding niches.

Aerial feeders like the free-tailed bats fly at rapid speeds in open spaces. Often, they simply scoop their prey out of the air in their swallow-like wings or tail membranes, aided by their long-range, low-frequency sonar calls.

Other species, such as the various horseshoe bats, rely on high-frequency echolocation calls, elaborate nose leafs – which, like megaphones, help to 'focus' their sonar – and wide, rounded wings with which to navigate slowly in areas where there is dense vegetation. Such echolocation systems can, by using the 'Doppler effect', detect even the minute frequency differences caused by the flutter of an insect's wings.

Species such as the yellow-winged and slit-faced bats have greatly elongated ears that enable them to pick up the footfalls, or mating calls, of insects moving on the ground or among branches. A 'stealth bomber'-type

Peter John Taylor is Curator of Mammals at South Africa's Durban Natural Science Museum.



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Under threat: the pug-faced giant African mastiff bat, *Otomops martiensseni* (left) is restricted in its Kenyan range to a few large caves, notably on Mount Suswa. Right: An epauletted fruit bat, *Etomophorus wahlbergi*, in Kenya's Maasai Mara National Reserve.



© PETER DAVEY ARPS

echolocation call allows these species to approach and to snatch insects from the ground or off branches without being heard by their prey. (Many insects have, of course, developed very sensitive hearing to the echolocation calls of bats!).

Several of the plain-faced bats (family Vespertilionidae) that feed along woodland verges boast remarkably flexible sonar designs, which can be varied depending on the level of 'clutter'.

Recorded bat detector signals of echolocation calls are instructive in betraying the behaviour of bats. So, for example, a feeding bat will produce a sharp buzz – 'zzzzt' – just prior to capture. But these signals can also assist in identifying species on the wing.

Once a good 'library' of calls has been gathered from bats of known species – that is, bats captured in nets, or caught while resting in day-time roosts, and then recorded on release – it is sometimes possible, by matching recordings of their calls, to identify unknown bats flying about at night.

This opens the way for possible future 'acoustic surveys' of bat populations. Such surveys could be very helpful, given the enormous practical difficulties – and effort – involved in mist-netting bats, and the fact that many bat species are just too smart ever to get caught in a net!

As major predators of night-flying insects, including many agricultural pests, insectivorous bats play a vital economic and ecological role. Recent research in the US and elsewhere has revealed just how indispensable bats are in this respect.

The estimated 20-million Mexican free-tailed bats that emerge nightly from Texas's Bracken Caves consume around 200 tonnes of insects nightly, and these same bats have been shown to intercept and feed on migrating swarms of pest insects at altitudes of up to 3000 metres.

There is every reason to believe that Kenya's bats play a broadly similar role. But research data to quantify this fully is urgently needed. The giant African mastiff bat, *Otomops martiensseni*, emerges from larva tubes on Mount Suswa in 'clouds' numbering several hundreds of thousands of individuals, each weighing up to 40 grammes.

As a high-flying moth specialist, it would be useful to determine what role, if any, this species – or any similar species – plays in controlling the large swarms of insects that migrate with the movements of the inter-tropical convergence zone over Africa.

As it is, the giant African mastiff bat is already cited as Vulnerable on the IUCN's *Red Data List*. It is known to inhabit only a few very large caves in Kenya. Just one act of vandalism, or any escalation of what, in places, are already unacceptably high levels of human disturbance, could wipe out a significant proportion of this species' overall population, opening the way to a potentially dramatic increase in pest damage to crops.

Whereas Britain has 90-odd bat clubs – some with 2,000, or more, members – to monitor its 16 bat species, Kenya's 95 described species still have virtually nobody dedicated to enhancing their research and conservation.

In South Africa, significant progress was achieved in the 1990s, with the formation of three bat interest groups. These are active in recruiting and training interested amateurs and in heightening public awareness concerning the vital roles played by bats.

This approach has noticeably boosted the knowledge of South African bats and has raised their profile in the conservation stakes. Two more bat species have been added to the country list in recent years.

Such a grassroots approach could also work in Kenya, where – fortunately – a focus on bat research and conservation is already developing within the National Museums of Kenya's Mammalogy Section. The three NMK staffers who participated in the Taita-Kasigau Wildlife Corridor bat survey are certainly keen to galvanise a broader public interest in Kenya's bats.

The Mammalogy Section is currently supervising a survey of bats in Meru National Park. It is also collaborating on a project aimed at genetically comparing isolated populations in both Kenya and South Africa of the rare giant African mastiff bat. 🦇

Anyone wanting further information on bats, or on forming a bat group, or those with questions relating to humane evictions of 'problem bats' from houses, can contact Risky at the National Museums of Kenya, on Tel + 254 (2) 742131/4 ext 244, or by e-mail at < risky@avu.org >.



PHOTOS: © PAUL KIRUI

Quite some mouthful!

Paul Kirui is gob-smacked by the sight of some giraffes with a taste for takeaways.

I had heard reports of this kind of behaviour before: of herbivores chewing on bones to supplement their dietary mineral intakes. I had even seen cases described in SWARA. But what I saw in October last year struck me as an altogether *extreme* manifestation.

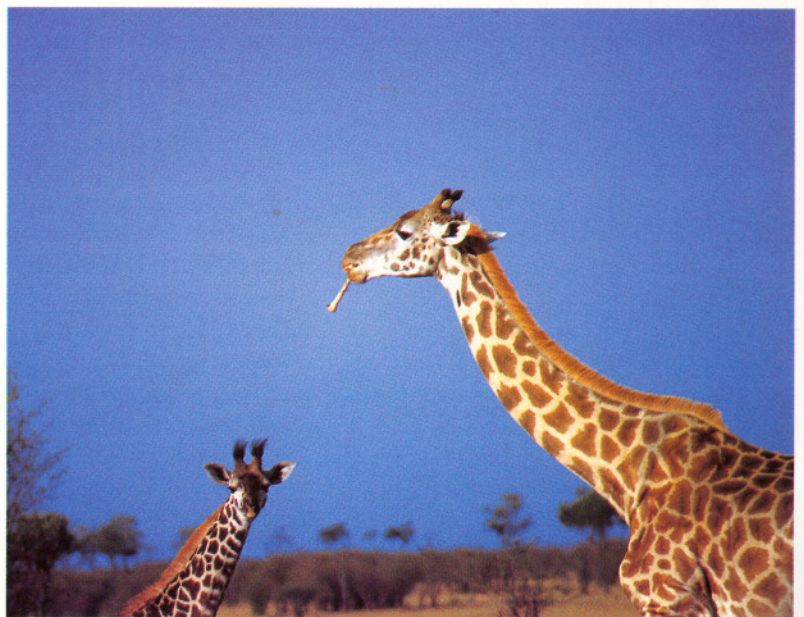
At around 11:15 a.m., while out on a game drive in Kenya's Maasai Mara National Reserve, we came upon a herd of giraffes feeding – we thought – on some 'magic *gwarri*' (euclea) bushes near the area known as *Uwanja wa Mchezo* ('Playground') not far from the Oloololo Gate.

Three of these giraffes, we noticed, were bent down over something on the ground,

which they appeared to be licking. We drove up closer to investigate. The giraffes straightened up at our approach. They seemed agitated and were about to lope off, when – to our astonishment – all three, hurriedly

stooping again, contrived to pick up and to carry away pieces of their hitherto hidden object of fascination: an old, dry wildebeest carcass.

One made off with the entire rib cage in its mouth; another with a large piece of the desiccated hide, and the third with a single large bone, which it was sucking like a lollipop.

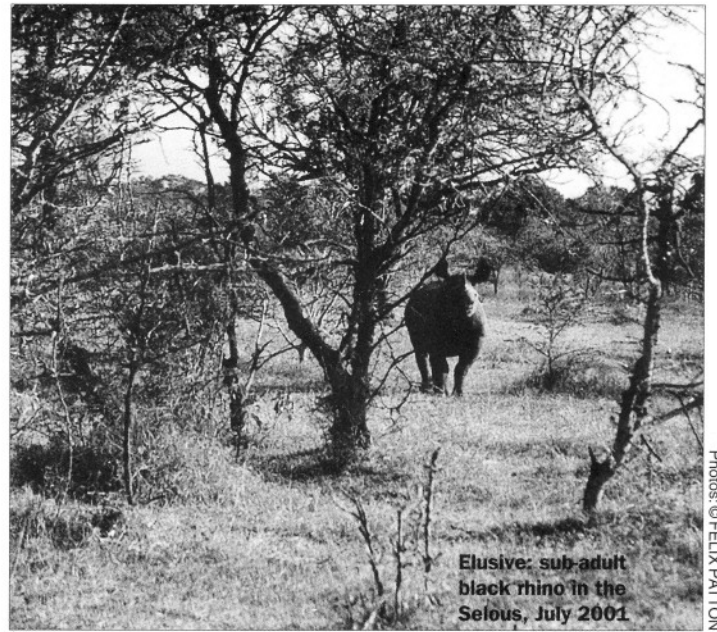


The sight of this trio, making off across the plain with their ungainly takeaways borne aloft, was bizarre, to say the least. I was lucky to have my camera with me at the time, and I thought SWARA readers might be interested in seeing some of the resulting photographs.

I have – in August this year – since watched other giraffes

milling around, and licking, the scattered remains of another wildebeest. But, on this occasion, they appeared to be content with a regular stand-up snack – for there were no takeaways.

Paul Kirui is a guide for the Intrepids safari company.



Rhino patrol

*Finding, let alone photographing, free-ranging rhinos in Tanzania can be a tricky business, finds **Felix Patton**.*

Over much of Africa, the chances of getting to see a black rhinoceros outside the confines of a closely guarded sanctuary are slim. But there is one place where – astonishingly – free ranging black rhinos *are* still holding out in some numbers.

That place is the remote northern sector of Tanzania's vast Selous Game Reserve, itself home to most of that country's remaining rhinos. So shy are these animals, however, that nobody has yet been able to determine precisely how many of these free ranging rhinos there are.

To manage and protect any threatened animal population – however thin on the ground – it is necessary first to determine its head count and distribution. But in the Selous this is no easy task, given that circumstances have long since forced the rhinos to lie-up in dense thickets and to flee at the slightest whiff of approaching people, even to the extent of moving home ranges where overly bothered by human traffic. And the Selous, spanning an area of more than 44,000 km², is bigger than some entire European countries – Denmark, for example, or Switzerland.

The challenge – of tracing, identifying, and keeping tabs on rhinos in the northern Selous – has become the focus of a monitoring programme, originally set up by the Sand River Rhino Project but since formalised by Tanzania's National Rhino Conservation Co-ordinator, Matthew Maiges, with backing from the Selous Rhino Trust and a 759,000-Euro (about US\$ 843,000) grant from the European Union.

The priority now, according to the programme's Technical Co-ordinator Friedrich Alpers, is to gather two main banks of data: ID photographs and DNA profiles (derived from faecal samples) for each animal. Locations are GPS-recorded for distribution mapping. "Only when all the DNA analyses are done," says Alpers, "can we hope to compile an accurate picture of these rhinos, and their respective ranges."

In the meantime, Alpers' eight-strong team, deployed daily in small patrols, walks hundreds of kilometres each week in search of the vital signs – footprints, dung, browse, and trails – that may lead to the animals. Tracking here is difficult, on hard ground where footprints are indistinct, if discernible at all. The dense bush also makes for poor visibility. The rhinos move about mainly at night, browsing and visiting waterholes, and are usually well hidden by daybreak.

Photographing the elusive beasts is almost impossible. Indeed, it is five years since a full-frame profile of a Selous rhino was captured on film, and that shot was the result of a chance encounter by a tourist couple. Alpers, though, as a Namibian who grew up with rhinos, has a real knack for finding them – as I discovered in July, this year, while out patrolling with him and five of his colleagues.

Four of us entered a patch of riverine forest, while the other three headed off across an adjacent expanse of dry grassland. Rhino activity had been reported here before. Within minutes, Alpers found fresh

footprints – one large set, one small – of a female and her calf. But the tracks were confusing, heading first one way, then another.

Alpers deduced that the pair must have followed a trail down to the water and then moved back, zigzag fashion, out on to the plain. The team fanned out and headed in the likely direction. And, within half an hour, among a herd of grazing buffalo, we were surprised to pick out the shape, not of an adult female with a calf, but of a single sub-adult black rhino.

The hard part was getting close enough to take good ID photographs with a standard 50 mm lens. The wind, blowing into our faces, was favourable. So Alpers, carrying only his camera, began the stalk, inching forward silently, freezing when he sensed the oxpeckers might betray his presence.

Finally, daring to wait no longer, he stood up, camera poised, and walked boldly up to the rhino, clicking away. The tactic paid off handsomely. For this young rhino, taken completely by surprise, stood rooted to the spot for valuable seconds before turning tail and running off. The pictures turned out to be among the best taken in years – ample recompense for months of toil.

Not surprisingly, given the difficulty of getting ID shots in this way, other ideas – including camera trapping and night vision equipment – are under consideration. If all goes well, Alpers and his team may yet amass a priceless record of this little known rhino population.

Felix Patton is researching rhino identification for an MSc in Conservation Biology at Manchester Metropolitan University in the UK. He has been studying rhino conservation for 15 years.



Photos: © ESMOND MARTIN

Forgotten Isle

*Soqatra, one of the Indian Ocean's most mysterious and least visited islands, is a real gem of a place, discover **Lucy Vigne** and **Esmond Martin***

The island of Soqatra, part of the Republic of Yemen, is one of the world's most remote and inaccessible places. Relative to other islands, it has been little affected by human activities. Few outsiders have visited it in recent decades, owing to the difficulties of obtaining official permission. It lies 240 km east of the Horn of Africa, at the eastern end of the Gulf of Aden, and is – along with the smaller islands of Abdalkuri, Samah and Darsa, to the southwest – part of the Soqotran archipelago (*Map, p. 38*).

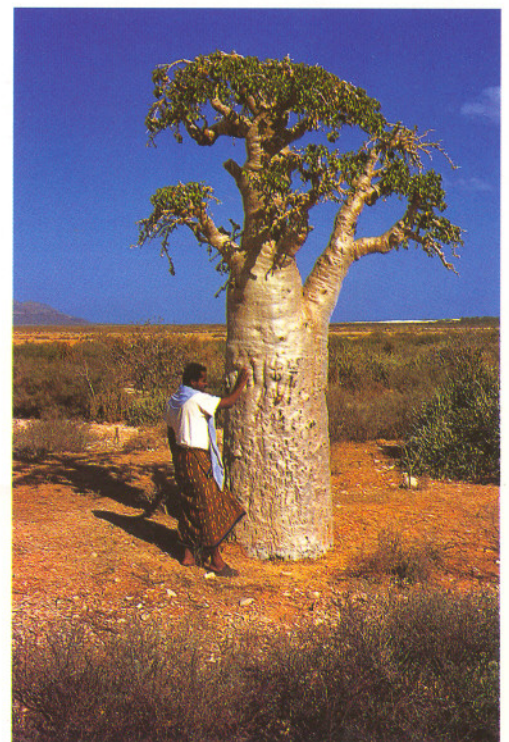
Soqatra may be one of the most isolated landmasses on earth, having separated as part of a fault block at least ten million years ago. Of unique biogeographic and evolutionary interest, it is a World Heritage Site, a Man and Biosphere Reserve under UNESCO, and a Special Protected Area under the Yemeni government. Aloes, frankincense, myrrh and other resins lured traders to Soqatra in ancient times, but the island's unusual biodiversity has latterly been attracting the attention of scientists as well.

The archipelago is separated from the African and Arabian mainlands by a deep trench. Soqatra itself is about 130 km by 40 km, covering an area of more than 3,600 km² aligned roughly west to east. It consists of a basement complex of indigenous and metamorphic rocks of pre-Cambrian age overlaid with sedimentary rocks, principally limestone and sandstone. The island's three main topographical zones are: the alluvial coastal plains of varying sizes, a central limestone plateau of 300 m to 700 m in altitude with deep valleys and escarpments, and the Haghier Mountains, whose granite pinnacles rise to 1,519 m.

The uniqueness of the vegetation is due, not only to the island's long isolation, but also to the widely varying topography, substrate and climate. For, despite being situated in an arid zone, Soqatra boasts mountainous forests and a plentiful supply of fresh water.

The flora consists of many endemics, including a variety of relic species

separated from related species elsewhere in the world. Of the 850 species of recorded flowering plants and ferns found so far on the Soqotran archipelago, 273 are endemic, including almost all of the common trees and shrubs. Some are spectacular in appearance. Drought, heat stress and salinity have led to some extraordinary xeromorphic adaptations and many of the plants are succulents. More than 200 vascular species are endemic to





Soqatra. Endemics are found in all vegetation types throughout the islands; Soqatra has one of the richest island floras in the world. For example, there are seven endemic species of frankincense tree (*Boswellia* spp.), a higher concentration than anywhere else.

There are no indigenous mammals (the only mammals are livestock, civets, mice, rats, shrews and bats), but Soqatra is famous for its birds. So far 112 bird species have been

recorded, of which 31 are known to breed on Soqatra. Eleven subspecies and six species are endemic. These are the Soqatra sunbird, the Soqatra warbler, the Soqatra sparrow, the Soqatra starling, the Soqatra cisticola and the Soqatra bunting; the latter three are globally threatened.

Soqatra is recognised by BirdLife International as one of 221 globally important Endemic Bird Areas. It is also home to significant world populations of species such as the Egyptian vulture, of which there are about 1,000 breeding pairs, the largest number in the Middle East.

Some parts of the coast are exceptionally productive in terms of bird food, attracting a great number of migrant bird species. The coastal waters are also a haven for cetaceans; 16 species of whales and dolphins occur in the region. There are also green turtles and hawksbill turtles and a great variety of fish and marine invertebrates such as spiny rock lobsters, abalones, pearl oysters and giant clams.

In that famous shipping manual, *The Periplus of the Erythraean Sea*, written in the second century AD, Soqatra – known then as Dioscorida – is described as “very large, but desert and marshy, having rivers in it and crocodiles and many snakes and great lizards of which the flesh is eaten and the fat melted and used instead of olive oil. The island yields no fruit, neither

A spectacular flora: this frankincense tree (top left) is one of seven *Boswellia* species endemic to Soqatra. Desert roses (above) are ubiquitous on the island, where they are known as bottle trees. The cucumber tree (bottom left) is the only tree species belonging to the cucumber family. Bottom right: Soqotran dragon’s blood trees were traditionally prized for their red sap, which was used in dyes and as a disinfectant.

vine nor grain. The inhabitants are few and they live on the coast towards the north, which from the side faces the continent. They are foreigners, a mixture of Arabs, Indians and Greeks who have emigrated to carry on trade there. The island produces the true sea-tortoise, and the land-tortoise and the white-tortoise, which is very numerous and preferred for its large shells, and the mountain tortoise...”

The larger reptiles cited no longer exist on the island, casualties no doubt of human activities over the past 2,000 years. There are, however, 24 terrestrial reptiles (more than half are geckoes), and of these as many as 21 are considered to be endemic. Snakes are represented by five endemic species, including two species of colubrid. Although harmless, the colubrids are frequently killed by the Bedouins, who subscribe to a myth that the snakes suckle their livestock for milk and poison the animals.

No amphibians have yet been discovered on Soqatra; it is possible that extreme droughts in the past may have wiped them



out. Whether there were ever any freshwater fish species on the island is a moot point. The predatory *Aphanius dispar*, introduced a few years ago to reduce malaria, has since formed stable populations. The invertebrates are represented mainly by arthropods and molluscs. There are some colourful butterflies, such as *Charaxes velox*, *C. balfourii* and *Papilio benetti*.

About 80 % of the land is used for grazing and 2 % for settlement, including some date palm groves and very small vegetable gardens in the lowlands. The remaining 18 % is semi-natural bushland. On the coast, fishing is the main livelihood. Sharks, killed with spears and harpoons, are salted and dried and then sold on the mainland. The government of Yemen, with the help of GEF/UNDP funding of US\$5 million, has been surveying the island's unique biodiversity in order to protect it. For there are government plans to develop the island's infrastructure, both to help the very poor human population of around 50,000 and to encourage tourism. For this reason, in January 2001, the Prime Minister of Yemen, Dr Abdul Karim al-Iryani, asked us to visit the still isolated island and to give our opinions on its development and tourism prospects.

Flights to Soqatra leave from the Yemen mainland only twice a week. Before unity of North and South Yemen in 1990, there were virtually no flights for civilians to Soqatra, only military ones. It was striking to come across the island in the vast ocean with its high mountains rising from the waves and bordered by a narrow golden coastal strip. We landed in the central plains of the north coast and were greeted by crowds of islanders dressed like South Yemenis in sarongs known as futahs in Yemen. Many people were collecting



Photos: © ESMOND MARTIN

One of Soqatra's many beautiful tropical lagoons. At times, the majestic backdrop of mountains incongruously resembles the highlands of Scotland.

provisions and a few letters, as nearly all food and supplies have to come from the mainland and there is no post office on Soqatra.

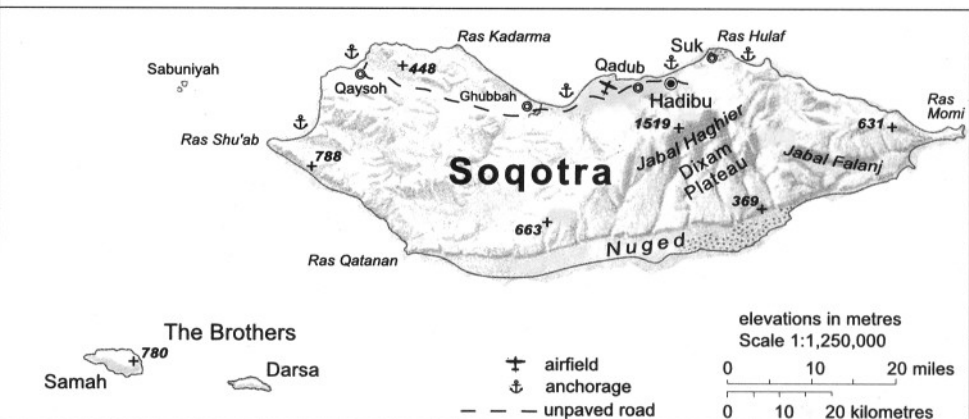
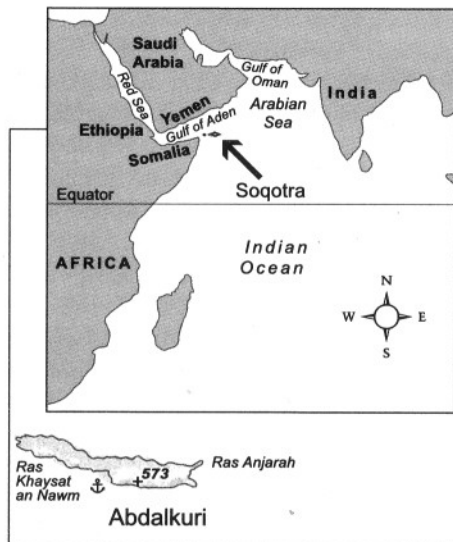
We were met as we descended from the plane (there is no airport building yet) by the manager of the Summer Land Hotel, as arranged for us by Universal Tours, the main tour company in Sanaa. We drove eastward along a stretch of tarmac for about a kilometre (so far the only tarmac on the island), and then continued along a murram coast road to the capital Hadibu, situated below the Haghier Mountains.

Hadibu is a dusty settlement of oblong, single-storey stone buildings, plainly constructed, and mostly empty dirt roads. Goats wander about sniffing at plastic bags to eat. As something of a new concept on Soqatra, litter in Hadibu is simply thrown out in the streets. But fortunately, because so few goods are imported, rubbish is still minimal. The few small shops in evidence stock only the most basic groceries.

Our hotel consisted of eight, simply furnished concrete bedrooms, but with adequate mosquito nets and shared cold showers. The island is very secure. Quite

unlike most places in the world, you can safely leave your money belt on your bed with the door unlocked. Crime is almost non-existent. Food at the hotel is simple, but repetitive, usually chicken and rice imported from the mainland. There is another hotel – the al-Gazera, with five rooms – in central Hadibu, a short stroll away, but food is not provided there. We hired a vehicle and driver and, that first afternoon, visited the village of Suk, further east along the coast, passing beautiful lagoons and palm trees.

Suk was the old capital, but is today just a cluster of square stone huts with thatched roofs and shy people. The women had painted their faces and arms with a mixture of turmeric powder and water, and looked a mysterious golden colour. Although Moslem, they do not object as much to showing their hands and sometimes their faces as on the mainland. Above Suk is the remnant of a Portuguese fort perched atop the mountain,



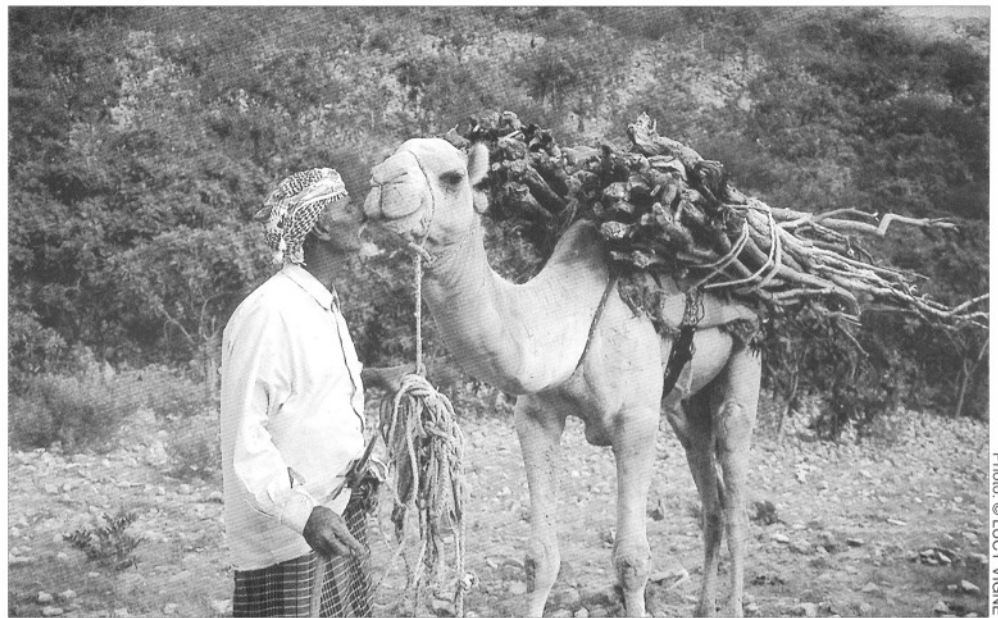


Photo: © LUCY VIGNE

and slightly further along is a jetty where a modern port is to be constructed once Soqatra's infrastructure develops. A canning factory for fish is also being planned.

We met an English road engineer who was surveying the bumpy roads and who is keen to widen and tarmac them if funds become available. But health and education standards are far behind the mainland, and perhaps these should receive a higher priority than improving the roads. Extremely few Soqotrans presently need a car, and on our drive to the south coast the next day, a rough journey of three hours up and down hills and along stony luggas covering 80 km, we saw only one other vehicle. Most people, apart from the fishermen on the coast, are

Soqotran firestarter (above) on the Dixam Plateau, and (below) the exterior of a typical Plateau-top stone dwelling.



pastoralists living simple lives in the mountains with their goats and sheep, as their families have done for centuries.

On our drive south, we were lucky to meet Professor Vitali Naumkin, the world authority on Soqotra who, with a colleague from Russia, is writing down the unique Soqotran language. It is an ancient Semitic language, mostly related to the Jibali language in southwest Oman. Naumkin has been visiting Soqotra since 1972, and when we met him he was investigating a pre-Islamic burial site at Rookeb. The tombs are about 2,000 years old, although Islam did not reach Soqotra until about the 15th century.

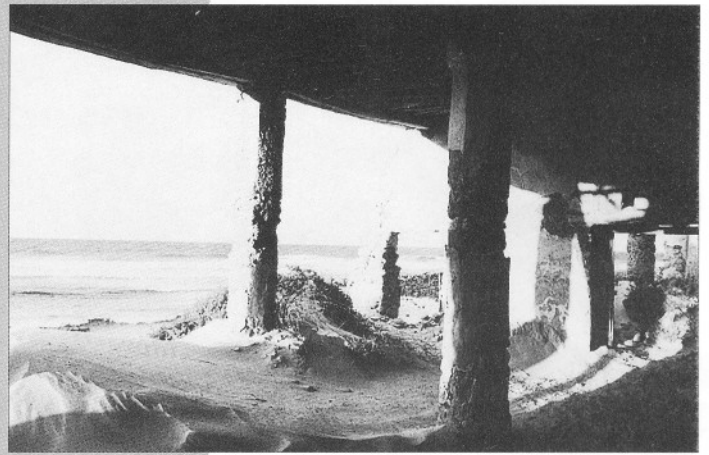
When Naumkin first came to the island, there was no hotel and just five or so cars. Hadibu was then a village with small traditional houses and no cement for building and not a single shop. In around

Three-hour descent: This camel is carrying bundles of firewood, made up of desert rose branches, down to the plains from the mountains.

1967, trade gradually expanded. Local products – ghee, dates, honey, tree resins and dried shark and other fish meat – were exchanged for basic goods from the mainland. Although these traditional exports continue, some Soqotrans now work in the Gulf and with their earnings bring back a little gold, clothes and money to the island.

Since the union of North and South Yemen in 1990, Soqatra's economy has changed quite significantly; a few administrators and merchants have arrived from northern Yemen, and basic tourism started in around 1998. There is electricity, but only in Hadibu, from 4 p.m. to midnight each day. Even qat, the plant consumed daily as a stimulant by most northern Yemeni men, is flown in twice a week from Sanaa. There have been changes to how women dress; they now wear the scarf to cover their heads and noses in the highlands. The men have always been peaceful, so do not choose to wear jambiyas as on the mainland. Some wear a straight knife with a goat's horn handle at the front of their waists for practical use, not as a weapon.

A little further, on our journey to the village of Nuged in the south, we were fortunate to see two pairs of the rare Soqotra bunting in the scrub vegetation. Apart from scattered date palms, we saw no agriculture at all. Only at Suk did we see some vegetables being grown beside the houses. Grain crops are rarely cultivated anywhere on the island today. Most of the hills are covered in desert roses (*Adenium obesum*), cucumber trees (*Dendrosicyos socotrana*), myrrh, frankincense,



A long history of neglect

Travellers and traders have been visiting Soqatra, known as 'the land of bliss,' for more than 2,000 years. They have been attracted partly by the island's aloes, frankincense and dragon's blood. Alexander the Great stopped off on Soqatra and, on the advice of Aristotle, encouraged some of his men to settle on the island. Later, more Greeks arrived along with some Christian Ethiopians.

By the seventh century, most of Soqatra's inhabitants were Christians, although according to Marco Polo many of the people still practised sorcery and witchcraft. When St Francis Xavier visited the island in 1542, he commented on the presence of many churches and on the devoutness of the people. He also stated that the people were illiterate, that the island was "poor and barren" and that Soqotrans survived on dates (from which a type of bread was made), milk and meat.

From the tenth century the island was ruled by Sultans from al-Mahra, now a backward region in southeastern Yemen, but foreigners continued to come and some even occupied the island. The Portuguese arrived in 1507, but left a few years later. The puritanical Wahabis from the Arabian mainland attacked Soqatra in 1800 and destroyed tombs, churches and graveyards.

Christianity was then already in decline and most Soqotrans were at least nominally Muslims. In 1876, the British signed a treaty with the Sultan and ten years later the island was made a British Protectorate. The British, however, let the Sultan go on governing the island with little outside interference. For many years there was no British officer nor businessman stationed on the island. The British simply avoided the place, with the result that there was very little develop-

ment. The British chose instead to build up the superior port of Aden, which became one of the largest and most efficient ports in the Indian Ocean.

In the 1950s the people of Soqatra were still living a very traditional lifestyle. Douglas Botting, who led the Oxford University scientific expedition to the island in 1956, wrote about a typical rural Soqotran: "He enjoys his meals but has no coffee or tea round which he can build a little ritual of entertainment... He plays nothing that can be recognised as a game; he never dances; he cannot draw, paint, carve or make anything beautiful... Culturally he is still in the Stone Age – he has no knowledge of metal-making, agriculture, navigation or the potter's wheel."

Michael Gwynne, also on the expedition, found that in 1956 sharia law was still in evidence. In Hadibu the local policeman would point proudly to his collection of bottles of pickled hands as testimony to his law enforcement prowess. At that time, there were no cars on the island and to move anywhere you either walked or rode a camel or donkey. During World War Two the RAF had a base on Soqatra that did have vehicles, but these were taken away when the base closed at the end of the war.

The Soqotran Sultanate ended in 1967 when the British pulled out of southern Arabia. It was replaced by a Marxist government based in Aden, which continued a policy of neglect towards Soqatra. The Marxist government did not allow many foreigners to visit the island. So rumours grew that the island had become a Russian military base. In 1990, when South and North Yemen joined to form one democratic country, Soqatra was integrated into a larger Yemen ruled from Sanaa and became more exposed to the outside world.

emta trees (*Euphorbia arbuscula*), and aloes (*Aloe perryi*, among others). This was a beautiful drive, finally descending to the plains and towards a magnificent stretch of sandy beach and warm aquamarine sea with gently breaking waves. Not a house or a person was in sight, just a few crabs quietly scuttling across the sand. It was paradise indeed.

On our next day, we headed west from Hadibu and then southward on a recently bulldozed track, climbing up into the central highlands, a rolling limestone plateau dissected by steep-sided wadis. It was exciting to spot both the Soqatra sunbird and the Soqatra starling among the rare, endemic flora. We reached the Dixam plateau, famous for its dragon's blood trees (*Dracaena cinnabari*), silhouetted against the sky like giant umbrellas. The tree is actually a member of the Lily family, and its shape is an adaptation to the dry climate; the leaves are in fact short shoots borne at the ends of the youngest branches.

The Dixam region is where most of the island's humpless dwarf cattle are reared, along with other livestock. Although the rangeland still looks healthy, young dragon's blood trees are not growing up to replace the old trees because of livestock grazing and browsing, and the species could become extinct without protection. Since antiquity these trees have been famous for their red sap, called *cinnabari* by Pliny. He reported that the sap was the blood of a dragon that had been pressed to death by a dying elephant (alluding to an old Hindu myth).

In ancient times, the dragon's blood was used as a medicine, particularly a disinfectant.

'Giant umbrellas': Soqatra's famous dragon's blood trees (right) are considered to be at risk. Efforts are being made in Germany to propagate the trees from seeds.

In ruins: This old mosque on Soqatra's north coast (left, two views), one of only a few buildings on the island of real historical and architectural interest, has simply been abandoned to its fate. Right: The construction of new houses is the order of the day in Soqatra's small but growing capital, Hadibu.

Roman gladiators smeared their bodies with it for protection and to create a bloodied appearance. The people of Soqatra still use it as a red dye and a varnish for their pottery bowls and incense burners, but little is exported today.

On top of Dixam plateau, we met some rural people who showed us how they make fire by rubbing sticks together. They invited us to their small village of simple stone huts and cave dwellings to eat a mixture of rice, milk and ghee that was cooking over a hut-side fire. Some Egyptian vultures watched over us for scraps to eat. Of the 30 or so villagers, only one spoke Arabic, a man who had worked in Aden. All were barefooted despite the sharp limestone rocks. On our descent back to the north coast, we passed several camels, each carrying one household's weekly supply of wood to the village on the plain below. Camels are noted for their surefootedness in negotiating the rugged mountain passes of the interior.

The relatively small human population with its simple lifestyle still lives in harmony with this delicate environment; there is no sign of deforestation or serious overgrazing on the island. This balance could easily change, however. Economic assistance to the people must be very carefully considered so that the equilibrium with their environment is not destroyed and with it the people's livelihoods.



Photos: © ESMOND MARTIN

With the proposed improvements to the roads, for example, the already growing number of vehicles will increase further, carrying more imported food and building materials from the towns to the mountain villages, changing the lifestyle of the people.

Traditional knowledge could die and, with the accumulation of possessions, attitudes will change. Any introduction of browsing animals and new crop plants must be done extremely carefully. The present fragile equilibrium between vegetation, man and livestock could collapse if supplementary food and water were provided, disrupting patterns of rotational grazing and seasonal livestock movement. For example, the endemic cucumber tree could become extinct if not protected in the future from growing numbers of livestock, as it is palatable to goats and sheep.

The government hopes to increase the number of tourists to Soqatra once the

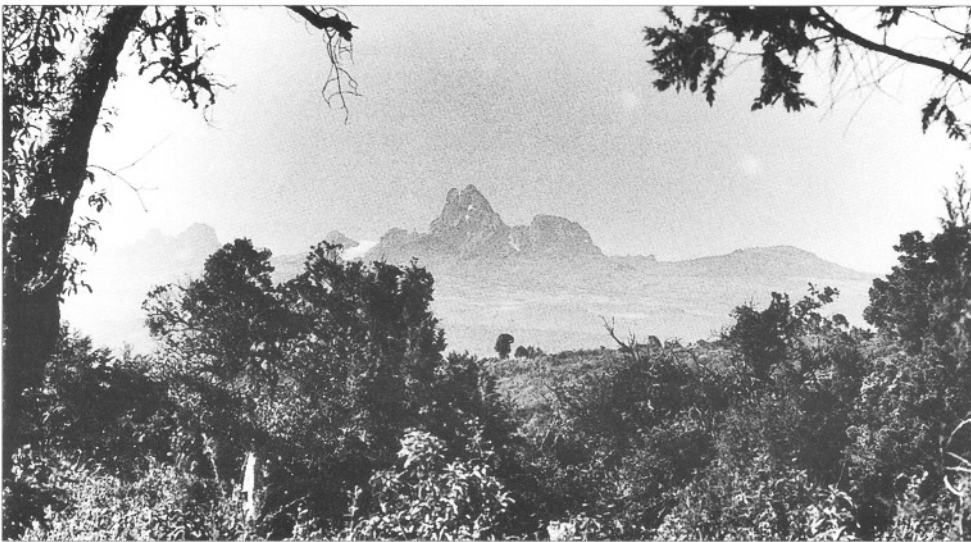
infrastructure is improved. Tourism has great potential, but needs to be limited in scale. Eco-tourism could flourish, for instance, with botanists and ornithologists walking and camping in the hills. Aqua tourism is fashionable today, and diving holidays are likely to become popular here, with an ocean of fascinating marine life and vast shoals of fish where the Red Sea and the Indian Ocean species meet and where plenty of old shipwrecks make diving that much more exciting.

In pre-radar days, ships were often wrecked on the rocks of this coast. Diving trips are already offered by Universal Tours, especially off the north-western tip of the island. The island has no historical buildings of interest to tourists, except for a mosque on the north coast that was built for the family of the Sultan who ruled Soqatra until 1967. It is now in a sad state of collapse, however, with sand blowing in through its pillars. It should urgently be restored and saved.

The island's climate is cooler and more temperate than on the adjacent mainlands. December to April is the best time to visit, as afterwards come the short rains, followed by harsh winds that blow across the island culminating in the main monsoon. Tourism, so far, has not amounted to much; there were fewer than 100 visitors in 2000. Now is the time, then, to visit this amazing island if you want to experience something unique and largely devoid of other tourists – but also lacking in all the usual tourist comforts.

Soqatra is a jewel in Yemen's crown: one of the best-preserved, semi-arid tropical islands in the world. The needs of the Soqotran people must be met. But, is rapid and unplanned modernisation the answer? Traditional culture in general deserves protection and support, and Soqatra deserves both urgently.





EAMIS File Picture

A reversal of roles

Poachers are themselves being recruited and employed – and to good effect, it seems – in the ongoing fight against poaching on Mount Kenya. Jessica Higginbottom reports ...

Deep in a hushed, shady forest on Mount Kenya, six men are moving along a narrow trail made by generations of elephants but also used by other animals to get up on to the moorlands above the forest. The men are watchful; their steps deliberate. They are walking with a purpose.

All the men know this part of the mountain very well. They are skilled in tracking animals: the elands and buffaloes, especially, that live on the moorlands. They have, with packs of dogs at their sides, hunted down animals here in the past, for meat.

They stop suddenly, finding a snare across the trail, set to catch an unsuspecting animal. They gather round the snare, dismantle it, and carry it away with them.

Not so long ago, these same men were wily poachers. Yet now, in an unusual project under way on Mount Kenya, it is they who are spearheading efforts to protect the wildlife they once killed.

In a novel twist, a Kenyan conservation body, the Bill Woodley Mount Kenya Trust, is actively recruiting – and employing – poachers, in a bid to stop the escalating slaughter, for meat, of the mountain's wild animals.

Over the past 10 years, it is estimated that numbers of 'meat' animals on Mount Kenya may have declined by as much as 60%. Most such animals have reportedly been killed by known poaching gangs operating mainly on the moorlands. It has not been possible, over such a vast area and with so few Kenya Wildlife Service (KWS) rangers, to patrol the

mountainous terrain effectively, with the result that the poachers have been able to operate with virtual impunity.

In March this year, security personnel from the Lewa Wildlife Conservancy were drafted in to help catch a poaching gang with more than 30 dogs that had killed a buffalo on the moorlands. Five of the gang members, instead of being arrested, were offered employment in the service of protecting wildlife.

The five men now routinely patrol that part of the mountain bounded by Rutundu, Kimbo, and Marania – an area historically rich in wildlife, having once been home to several black rhinos. While unarmed, the men turn out in uniform and communicate continually with KWS rangers stationed on the mountain. Their leader, Ribokmari, was for ten years a security officer at the Lewa Conservancy.

As ex-poachers, the new recruits have direct lines of communication with other poachers, along with inside information on other illegal activities taking place on the mountain. These activities include the logging of indigenous trees, charcoal production, livestock grazing, and the large-scale cultivation of marijuana.

This intelligence has – with support from the KWS – already been instrumental in apprehending several poaching gangs. The patrols have collected and destroyed hundreds of wire snares. They have even recovered some elephant tusks from one local village.


Their records of animal numbers and movements, too, are proving invaluable to the monitoring of wildlife populations on the mountain. Theirs is a highly motivated force and, since patrols began, buffaloes are again being seen regularly near the Rutundu Bandas, after several years' absence.

Such are the successes of this project that it may yet provide a model for combatting poaching elsewhere on Mount Kenya – and possibly even further afield. The Trust is being supported in this unusual initiative by several donors from abroad, notably the Liden Wildlife Trust and the African Safari and Conservation Club of Philadelphia in the US.

The Bill Woodley Mount Kenya Trust was itself set up in 1999 in memory of the inspirational conservationist Bill Woodley, who worked for the KWS – and for its predecessor, the National Parks of Kenya – for many years, including a 19-year stint as warden-in-chief of the country's Mountain Parks.

Funds raised through the Trust support a variety of conservation projects undertaken in close consultation with the KWS and aimed at preserving and protecting Mount Kenya's priceless wildlife and habitats. The Trust also co-ordinates independently funded projects, helping local communities, for example, to construct elephant-proof fencing around sections of the forest to prevent crop damage by elephants.

The Trust actively supports community-based reforestation schemes, and is underwriting the production costs of an ecology booklet on Mount Kenya for use in local village schools. A tree nursery is soon to be established, to replant areas denuded of their forest with indigenous trees. An elephant corridor from Mount Kenya to the Ngare Ndare Forest is now also being evaluated.

Mount Kenya's is the largest remaining forest in the country, and – quite apart from supporting many threatened wildlife species – serves as a critical water catchment in feeding Kenya's two largest rivers, the Tana and the Athi, on which millions of people depend. 

Further information on the Bill Woodley Mount Kenya Trust is posted on the Trust's website, < www.mountkenyatrust.com >.

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Siafu!

Few insects inspire such universal dread as safari ants, when they come raiding in their angry, red, broiling columns.

Dino J Martins takes up their story ...

Throaty grumbles of thunder add to the milling babble of excitement. The famous and the aspiring flash smiles at one another. Just out of sight, powerful engines rev in anticipation. The crowd surges forward. The massed ranks of cameramen jostle for position. A rally car, the names of its corporate sponsors emblazoned on every possible surface, speeds towards the podium. A hushed expectancy falls over the crowd.

The long-awaited moment has come: Kenya's premier sporting event, the Safari Rally, is about to be flagged off.

The first car sweeps on to the ramp. But the assembled crowd, instead of cheering, starts to twitch and peel away, amid shrieks of panic. The ground is littered with expensive hats, handbags, even cameras, as people – jumping about wildly – clutch and swat at themselves frenetically. Not even the television crews are spared; their live transmissions dance about wildly, showing scenes not of the rally cars but of flailing legs and arms instead.

The spectacle resembles one of mass hysteria. But, in reality, it marks the arrival of some uninvited guests – in the form of a swarm of *siafu*, otherwise known as safari ants.

On the march across the Kitengela: advancing legions of safari ants swarm over vast areas, leaving no recess in any rock, no fold of lichen, no hollowed twig uninvestigated in their relentless search for food.

Never given to making a quiet entrance, the ants quickly make their presence felt. Disappointed by the nutritive prospects of the rally's flagging-off ceremony, however, they soon scurry off in search of more promising hunting grounds.

Every East African schoolchild, housewife, birder, farmer, bushwhacker, or naturalist has a *siafu* story to tell. Few insect species are so broadly familiar as these ants. There are few insects, either, that inspire such dread and awe as a ravenous, rain-stirred swarm of safari ants.

Stories abound of helpless puppies, ducklings, even human babies left unattended and falling victim to voracious hordes of safari ants. Ask any gathering, and you will be regaled with tales of bravery, desperation, eviction, impromptu acts of striptease, even romance – all brought on by safari ants.

Sensation and legend aside, safari ants make up one of the most dynamic, most highly advanced, stratified and efficient living societies on earth. Also known as driver or legionary ants, *siafu* are classified broadly as army ants – predatory-*cum*-scavenging species that seek food in large swarms.

Army ants are represented by a number of genera distributed through both the New and the Old World. Governed solely by the needs of the colony, army ants shape and influence the character of every habitat they occupy – from the dense, humid forests of Amazonia to the dry, windswept plains of eastern Africa.

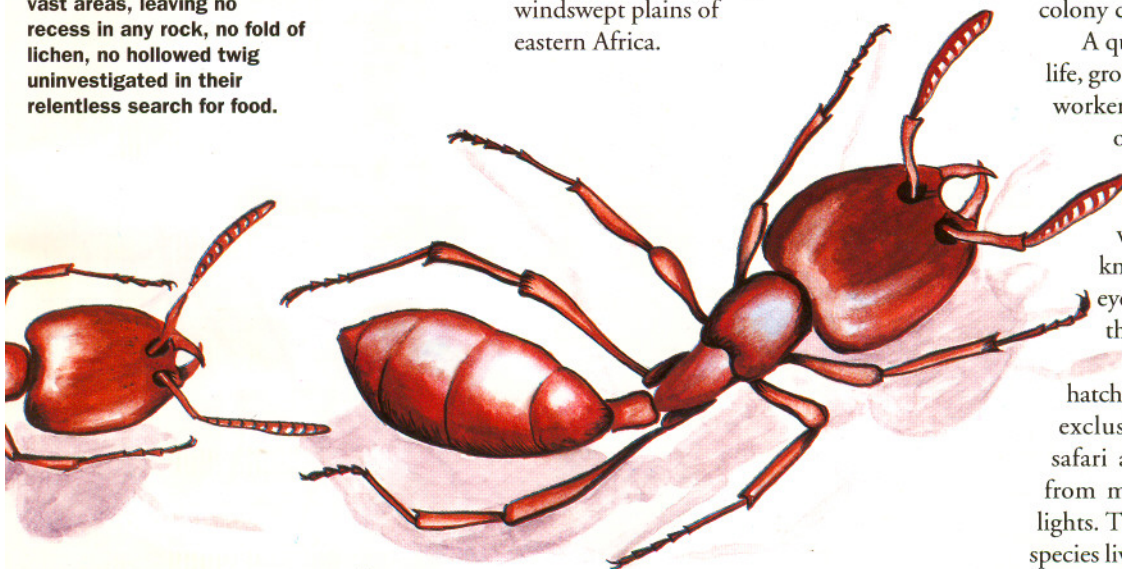
Safari ants are among the oldest nomads on earth. Their entire existence is divided between periods of intense foraging and high mobility and sedentary periods spent underground, secretively breeding and tending to the brood. The colony is all: the unit of survival, the essence of function. Think of a safari ant colony as a synthesis, a single functional entity, even as one sentient being, and their great differences – in function, shape, and size – will make perfect sense.

Taken as an organic whole, the colony's body cells and vital circuits and organs are the worker and the soldier castes. Voracious and seemingly insatiable, the workers are the colony's mouth, limbs and stomach. Numerous and indispensable, they toil selflessly and tirelessly throughout their lives. All worker and soldier safari ants are blind, sterile females. Their fate is inscribed in the colony's genetic master plan. This plan is revised continually to meet the demands of the environment.

When a colony moves, the queen and her brood are dragged along. For the safari ant queen, this dragging is quite literal, as she is many hundreds of times the size of the workers. Yet, amazingly, only a few safari ant queens have ever been seen. A lifelong egg-laying machine, the queen is the hub of the colony. Her safety is paramount in that without her constant replenishment of workers, the colony cannot function.

A queen is attended throughout her life, groomed and fed constantly by loyal workers. But queens cannot produce offspring without a mate; so the colony also produces males. Male safari ants are robust, winged creatures commonly known as 'sausage flies'. They have eyes and look more like wasps than the ant species they actually are.

The winged males generally hatch with the onset of the rains. Some exclusively subterranean species of safari ants have been described only from male specimens, which fly into lights. The workers and soldiers of these species live, feed, and die entirely beneath the ground.



Pictures: © Dino J Martins



Pictures: © DINO J MARTINS

Watching a raiding swarm of safari ants is an unforgettable experience. Along the Mbagathi, near the southern boundary of Nairobi National Park, I recently encountered such a swarm. In a stretch of acacias and croton trees, a hushed panic – spreading through the bush, and gathering intensity – is almost audible above the river’s murmur. The very earth seems to speak.

Criss-crossing the hoof-scored paths at my feet are the angry, red, broiling trails of foraging safari ants. The panic emanates not from them, but from the countless, desperate small creatures that are falling prey to the advancing legions. Merciless, indiscriminate, supremely efficient, the ants spare nothing, as they investigate – with methodical thoroughness – each crack in the rocks, each fold of lichen, every hollowed twig.

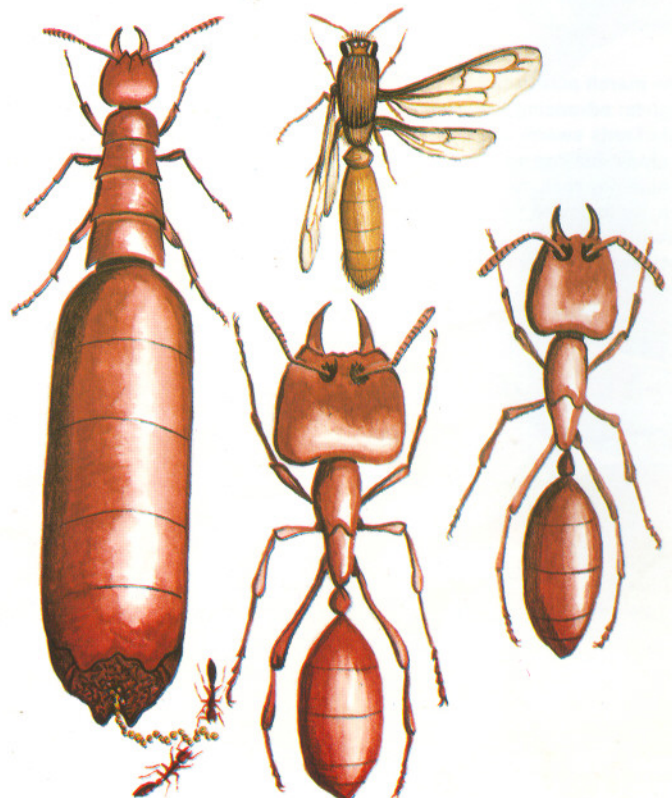
Every living thing they find is seized, disappearing under a mass of slicing mandibles. Nothing, once latched on to, is

allowed to get away. All along the river, crickets, locusts, roaches, even shrews and centipedes, are devoured piecemeal.

The tenacity of the safari ant’s grip is well known to many tribal cultures in both Africa and South America. For centuries, these ants

have been used to suture wounds. Visiting an Urueu-wau-wau family on their aggressively defended reserve in Brazil’s Rondonia State, I notice a young woman with rows of what appear initially to be black beads strung out along some healing gashes on her

Safari ants
(clockwise from left)
queen; male ‘sausage fly’; worker, and soldier ant.



Opportunists par excellence: A white-tailed ant-thrush (top) welcomes the feast of fleeing insects that are flushed out of their hiding places by advancing safari ants. A staphyloid beetle, meanwhile, coaxes a worker safari ant into regurgitating some food.

upper arms. On closer inspection, these turn out to be the heads of army ants, of the genus *Eciton*.

Spurred on by my curiosity, the local shaman eagerly demonstrates the technique. A cut, inflicted with a spiny *tucuma* palm on the leg of a not-so-willing friend, provides the required fresh wound. The flesh to either side of the cut is pinched together. An ant, its body held firmly between finger and thumb, obligingly opens its jaws. When pressed up against the wound, the jaws snap shut. The ant's body is then twisted off, leaving only its head and tightly locked mandibles in place over the wound – a perfect suture, neat and clean.

This extraordinary form of traditional first aid has been widely admired. In the Alex Haley classic *Roots* (1977), for instance, the protagonist, Kunta, is described as receiving this treatment from his aged grandmother in West Africa.

Back in the Brazilian reserve's pristine forests, I am introduced to the full scale of some foraging ant swarms. One day, while measuring the DBHs (Diameters at breast height) of rainforest trees, shrieks of pain come suddenly from within our group. At our feet, the ground is shimmering with army ants. We panic and run, but – wherever we seek refuge – the ants are all around us. We agree to split up and to run in different directions. The first to reach an ant-free zone will call out, so we can reassemble there.

So, off we go: crashing through the tangled undergrowth. After twenty strides I stop, but still the ground is teeming with the ants. Another twenty strides, then another – and another. Still, there is no getting away from these ants. And there is still no word, either, from any of my companions. A hundred metres away, at least, and we are still within the swarm, still running. But, at last, after a few more steps, the ants do – mercifully – begin to thin out. So I yell out to the others; then I tear off my clothes, astonished by where on my body I keep finding new attackers.

Later, after gathering our wits, we set about pacing out the swarm. Frightened insects, fleeing for their lives, keep flying into our faces, into our mouths and nostrils, as we skirt this massive swarm, which we find to be more than 300 metres across. Of

course, there is no way of knowing just how far back into the forest this swarm stretches. But some swarms, we do know, have been estimated to contain in excess of 20-million ants!

Casual observers of safari ant society might be forgiven for thinking that the ants' unremittingly fierce, unforgiving and regimented behaviour deserves little sympathy. Yet many people welcome safari ants into their homes for precisely these reasons. For they offer a free pest control service, rooting out and destroying not only other ant species but also rodents, roaches, and other creatures that, unchecked by safari ants, would prosper in our midst, assuming menacing proportions.

Yet, despite the ants' aggressive nature, many different creatures derive benefits from, or have co-evolved alongside, or even simply wheedled their way into, safari ant society. For, as we all know, any flourishing lifestyle very soon attracts whole legions of 'friends'.

In one of Kenya's precious Nandi Forests, nestled amid lush green tea plantations in the highlands west of the Rift Valley, I stumble on one amazing example of a niche provided by safari ants.

I watch this ancient forest stir at dawn, light seeping from a fractured sky in tones of lilac, saffron, and pale, pearly turquoise. The trees – trunks mottled with lichens, branches festooned with ferns and orchids – emerge from the dissipating mist. The kissing-calls of blue monkeys, along with the ascending raucous banter of crimson-winged turacos, pierce the air.

Columns of safari ants are on the march. Across the path they go and on into the leaf-strewn forest floor beyond. Forest roaches, beetles, earthworms, and wood-lice, flushed out of their hiding places, flee before the advancing ants. A movement in a pathside acanthus catches my eye. Then a flash of russet and white whirrs across the path.

It is a white-tailed ant-thrush, I notice, as it starts bobbing along over the damp ground, chattering and whistling excitedly. The bird lunges suddenly and seizes a confused mole cricket, before flitting back into the spiny tangle of acanthus. As egrets haunt buffalo herds, so ant-thrushes follow raiding columns of safari ants to feed on startled insects.

Later, as the clear blue sky begins to fill with puffy clouds, I notice – from the vantage point of a moss-cushioned log above a trail following a fern-lined stream – another 'guest' of the safari ants. The workers are streaming by in their thousands, some carrying food, others with empty mandibles, when – on one narrow trail through the decaying leaves – I notice a strange, non-member scurrying along amid the busy legions. Amazingly, the ants seem to tolerate this stranger, which eventually I manage to catch with some forceps without incurring the wrath of too many patrolling soldier ants.

A closer examination reveals this stranger to be a staphylinid beetle, just one of several species of myrmecophilous (or ant-loving) beetles. Set down again, this wriggling specimen jumps up, cocks its abdomen over its head and quickly starts scurrying forward again with the ants.

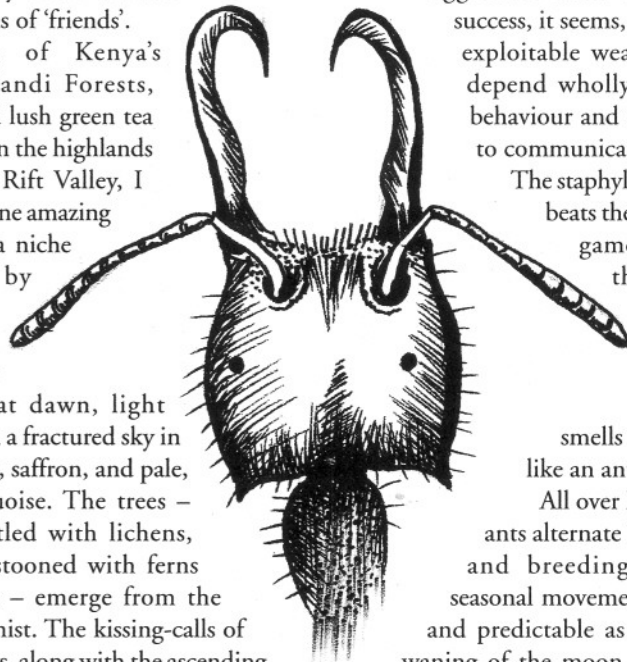
How are such parasites able to trick the aggressive ants? The ants' social success, it seems, is also their most exploitable weakness. The ants depend wholly on regimented behaviour and on chemical cues to communicate and to survive.

The staphylinid beetle simply beats the ants at their own game by mimicking their cues. Safari ants are blind; so to them, anything that acts like an ant, smells like an ant, feels like an ant, must *be* an ant!

All over East Africa, safari ants alternate between foraging and breeding cycles. Their seasonal movements are as certain and predictable as the waxing and waning of the moon. Their voracious travels were influencing earthly habitats long before early hominids started fashioning primitive tools from rocks. And, over all this time, the ants have barely changed at all.

The writer Aldous Huxley (1894–1963) imagined a futuristic society made up of regimented, wholly predictable roles, wherein every individual act was structured, assigned, accounted for. Yet, as with most things, nature got there first, with evolution's having aeons ago produced the perfectly efficient stratified society – with the likes of safari ants.

So, the next time safari ants invade your tents, houses, or farms, be sure – before you resort to pouring boiling water on their columns or sprinkling suffocating ash over their trails – to spare them a moment's thought. You may be a little nervous. But you will also be very impressed.



Above: An army ant's jaws clamp together so firmly when shut that these have been used in traditional first aid for centuries to suture wounds.

Whose website?

Glancing up while queueing at a phone booth off the Mombasa Road, I was startled by the sight of a large web. Intricately woven, it was about a metre across and strewn with woolly, powdery lumps. In it, I noticed a surprisingly tiny, pale spider. Could this have been the web's creator? How big do such spiders get? And how long does it take for them to weave such webs?

PAUL MWANIKI
NAIROBI

Arachnophile **Dino J Martins** writes:

The web in question belongs to an orb-weaver. Members of this large spider sub-family are known collectively as the Araneinae. It was one of these spiders that Little Miss Muffet once famously encountered while seated on a tuffet, eating her curds and whey.

Orb-weavers tend to descend rapidly on a single line when threatened. So it is no wonder that Little Miss Muffet took fright. Such spiders build webs of the familiar circular pattern, and are common in most parts of the world. Webs range in size from a few centimetres to many metres. The 'woolly lumps' are of trapped prey that has been bundled up in silk. This preserves a meal for later, when the spider becomes hungry again and when fresh prey may not be available.

It takes most spiders a few hours to construct their webs. A web is generally put up at dusk, in a series of steps: foundation and bridge lines, followed by the radial arms, then a dry-silk zone, and finally the viscid zone (sticky globule-coated silk). A dry trap-line is then added to allow the spider quick access to prey without getting caught in its own web!

The tiny spider you saw was probably a male. Female orb-weavers are very much bigger – sometimes up to a thousand times larger – than the males! Orb-weavers are harmless, useful creatures whose exquisite webs help us by keeping pesky flies and mosquitoes in check.



Picture: © DINO J MARTINS



Triple-header

The idea of a giraffe with three heads – a kind of Cerberus among giraffes (Fluffy, to Harry Potter fans) – is bizarre, to say the least. Yet such is the effect captured in some recent photographs taken in Kenya's Samburu National Reserve (including the one reproduced here).

The photographer, **Michael Nicolai**, out from Germany, was visiting Samburu with local tour firm **Sunworld Safaris**, when – as he puts it – “for just a few

seconds, three of the [reticulated] giraffes we had been watching moved into a position where their bodies, and most (if not all) of their legs, were so aligned as to give the impression of a single beast with three heads waving about on three sinuous long necks.

“I noticed this at the time,” Nicolai adds, “and was lucky enough, but in a few of frames only, to capture the odd result on film.”

– GB



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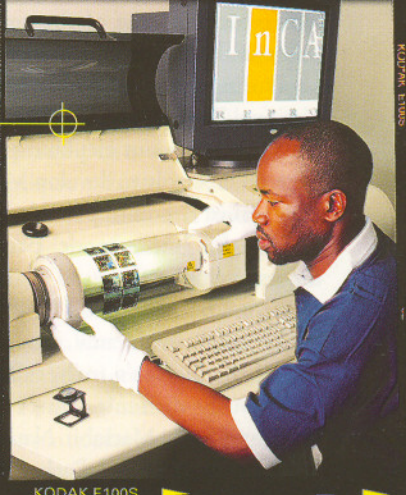
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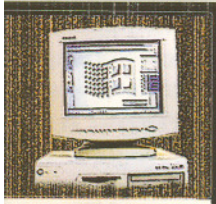


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A Man called 'Chuma'

PETER JENKINS (1930 - 2001)

Jack Barrah remembers one of Kenya's greatest ever game wardens.

Peter Robin Jenkins MBE, otherwise known as *Chuma* ('Iron') for his unwavering determination and tenacity, died in England on 17 September 2001, aged 71.

His career included an astonishing 43 years of continuous service as a game warden – a record that may never be surpassed. For his pioneering and dedicated service to Kenya's national parks, he will forever be remembered as one of the country's most influential wildlife conservationists.

During the 1950s, while based in Tsavo National Park, he was a leading figure in the effort to stamp out elephant poaching. He went on, not only to develop Meru National Park against almost impossible odds, but also to turn this into a model park, renowned for its exemplary ground plan and highly efficient administration.

He was instrumental, too, in developing some of Kenya's other remote and notoriously difficult conservation areas, including both Marsabit National Reserve and Sibiloi National Park off the north-eastern shores of Lake Turkana. And from the 1970s onwards, he was at the forefront of international efforts to save Africa's rhinos, white and black, from extinction.

Peter Jenkins was born in Kenya on 26 June 1930. A product of 'settler stock', he was brought up on his parents' farm at Gilgil with his sisters Sheila, Daphne, and Betty. He was educated at Greensteds School, Nakuru, and later at the Prince of Wales high school in Nairobi.

During the school holidays he was introduced, when aged just 12, to hunting and game control safaris. He took part, for instance, in the cropping of surplus wildlife in Maasailand's Kajiado and Narok Districts, where the animals were competing with domestic stock. This was a task assigned to his father during World War Two. The meat would be dried for the War Supplies Board to distribute as famine relief in Ukumbani and to feed Italian prisoners of war then being held in Kenya. The salted dry hides were exported to America to make belting for machines.

These youthful experiences in what were considered then to be remote areas stood him in good stead when he was appointed, amid stiff competition, to fill one of two keenly contested vacancies for junior wardens in the Royal National Parks in 1948. The other post went to Bill Woodley (1929-1995), then also renowned for exceptional bush savvy – gained while hunting elephants with 'Tiger' Marriott in Mozambique.

So began a close – and lifelong – friendship between Jenkins and Woodley, then aged just 17 and 18 respectively and competing with people more than twice their age. Their subsequent contributions to the development and running of Kenya's world-famous national parks, which continue to spearhead the country's tourism industry today, are legendary.

The teenage duo started out under Ron Stephens, then Warden in Charge of Tsavo National Park, based at Kamboyo (now the Tsavo West headquarters). From here, Peter was assigned to develop the park and to arrest poaching west of the Mombasa-Nairobi railway, while Bill was allotted similar duties to the north and east of the railway.

Their training included instruction, at the Gailey and Roberts' workshops in Nairobi, in the use of heavy duty earth-moving vehicles. To demonstrate their new-found skills, they had to grade the roads in Nairobi National Park, before returning to

Tsavo, where they were told simply to 'get on with it,' and to develop road networks, at their discretion, from rough bush camps.

The only stipulation at the time was that they should keep day-to-day diaries! Peter went on to keep such a diary for the rest of his life, so amassing a priceless record of the events of a bygone era.

1949 saw the respected wildlife figure David Sheldrick (1919-1977) opt out of professional hunting to become Warden for the Tsavo's Eastern Sector, based at Voi. There, he was assisted by Woodley, while Peter remained the Assistant Warden at Kamboyo. This effectively divided the park into the two separate entities – Tsavo East and Tsavo West – that exist today, to either side of the railway line.

Under Sheldrick, Peter again teamed up with Woodley in the Voi Anti-Poaching Force, known for its efficiency and its sound informer network during the 'elephant wars' of the late 1950s and early 1960s.

The Mau Mau Emergency, declared in 1952, disrupted Peter's career with conscription into the Kenya Regiment. He first had to complete six months of military training in what was then Rhodesia. Then, on returning to Kenya, he was seconded to the newly established Tracker Combat School, with instructions to convey his expertise to British Army soldiers who had little or no idea of how to go about tracking and other operations in Kenya's montane forest terrain. Again, then, he became a member of a small, elite and carefully selected Unit, where his hunting and anti-poaching skills were recognised as important attributes.

On completing his period of service as a Commissioned Officer, Peter returned to Tsavo in 1958. He was given the daunting task of building a sub-station at Ithumba in Tsavo East's remote 'Northern Area', an undeveloped tract of inaccessible *nyika* bush where increased elephant and rhino poaching was causing concern. Here, for the first time, he was free to develop an area independently. In this difficult challenge he excelled, setting up a new park headquarters with roads, airfields,



Redoubtable trio: Jenkins (left), with David Sheldrick (centre) and Bill Woodley at a wedding reception in 1974. This is one of only a few photographs in which all three pioneering conservationists appear together. Top, facing page: Teenage triumph. Peter Jenkins, aged 18, with a pair of tusks his unit had just recovered from Tsavo elephant poachers in 1948.

Photo: courtesy DAPHNE SHELDRICK

and radio networks – and an effective and well-disciplined Ranger Force.

Ten years later, in 1968, in recognition of his achievements in Tsavo, Peter was promoted and at the same time transferred to the then newly gazetted Meru National Park as Warden in Charge. The first of Kenya's African District Council Game Reserves (or County Council Game Reserves, as these came to be known after Kenya's Independence), Meru was gazetted – with commendable foresight – under the jurisdiction of the Meru African District Council.

This was an area with enormous potential. But Meru's development was hampered from the outset by a lack of funding. Its first Warden, an ex-Tsetse Department Officer named Larry Wateridge, was succeeded by Ted Goss, from the Forest Department, who did what he could to start developing the reserve with the limited Council funds. On handing over to Peter, Goss was himself made a National Parks Warden and posted to Tsavo West, where his accomplishments are well known.

In ten very successful years at Meru, Peter worked a miracle, creating a model park with an impressive infrastructure: an excellent road network, a well-appointed headquarters, proper staff lines, entrance gates, and so on. He recruited and trained a staff of efficient and highly motivated rangers, and set up a crack Anti-Poaching Unit.

He also developed several attractive campsites, supplied with firewood and with easy access to clear streams. These sites, in a unique and uncongested park blessed with large concentrations of elephants and buffaloes as well as various 'northern' species of fauna, flora and bird life, were highly prized by commercial safari operators and private visitors alike. Indeed, Meru at this time was widely championed as the best managed of all Kenya's national parks.

In recognition of his immense and tireless contributions to the wildlife cause, Peter was made a Member of the British Empire (MBE) in 1978.

In September that same year, he left Meru – briefly – to concentrate on upgrading other parks. But when, only months after his

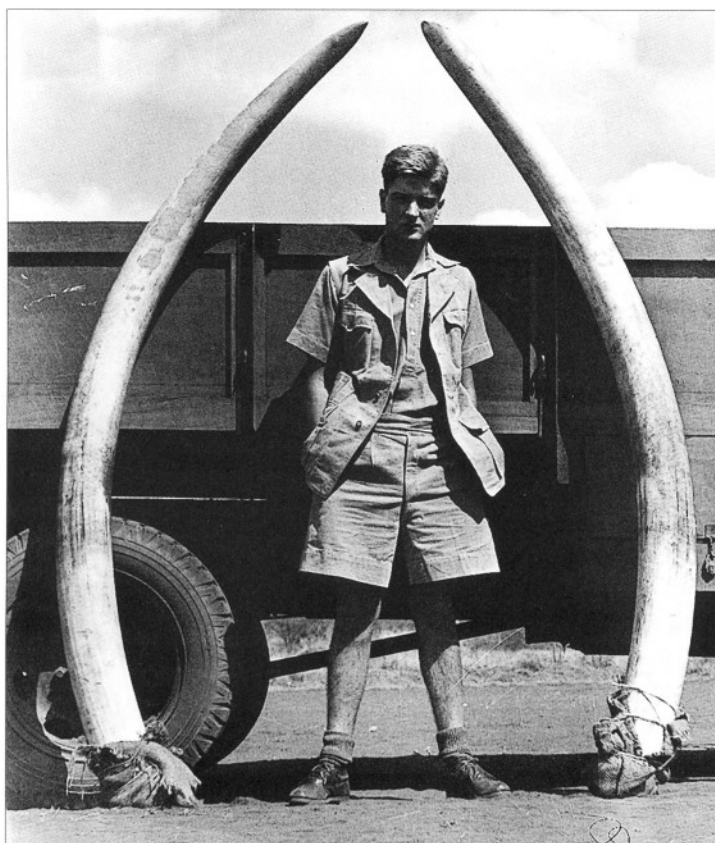


Photo: courtesy PETER JENKINS ARCHIVE

departure, 56 black rhinos were killed by poachers, he was ordered back by Kenyan President Daniel arap Moi. It was then that he began devising practical strategies for saving the rhino from extinction. His plans were later adopted as the basis for setting up the closely guarded sanctuaries on which most of Africa's rhinos survive today.

In 1981, Peter was appointed to head the National Parks' Research and Planning Unit, based in Mweiga, near the Aberdares National Park, where he took over from Bill Woodley, who was in turn posted back to Tsavo West. In this capacity, he was responsible for rehabilitating both the Marsabit and Sibiloi National Parks, and also for upgrading Lake Nakuru to its exalted present status as Kenya's most visited and profitable national park.

Although retired from Government Service in 1985, Peter Jenkins continued – under a specially funded British Overseas Aid (ODA) scheme – to serve as Wildlife Advisor to the Kenya Wildlife Service (KWS) until his retirement in 1991. From 1985 to 1989 he was also Rhino Co-Ordinator responsible for the development of sanctuaries. Through being instrumental in securing the ring fencing of the Nakuru Park, he effectively helped to create one of Kenya's most prolific breeding grounds for rhinos, white and black.

He returned to Meru in 1989, after being called upon – in his capacity as Advisor – by

the then KWS Director, Dr Richard Leakey, to help to restore the park to its former glory. What Jenkins discovered there greatly saddened him. Park security had collapsed. Poaching gangs had annihilated the park's black rhinos. All the white rhinos introduced by him had been slaughtered. Nevertheless, he set about repairing the damage, re-establishing basic security and rebuilding the road system. He put his son Mark in charge of a 'strike force' to combat poaching.

Even after his retirement – to Malindi, on the Kenya coast – in 1991, he continued to assist the Craigs, Ian and Jane, to set up Kenya's first private wildlife conservancy on their ranch, Lewa Downs, north of Nanyuki. Towards the end, while in remission from treatment in

London for a serious – and, as it would turn out, terminal – form of cancer, he was able to return briefly to Kenya. Fittingly, he spent much of his time back in Meru Park, run since 1999 by his son Mark. That Mark should be the Warden responsible for rehabilitating a park so dear to him was, for Peter, cause for particular pride.

Peter Jenkins was a perfectionist, possessed of great integrity, a strict sense of discipline, and a meticulous eye for detail in everything he did. As such, he commanded enormous respect among all who worked either with him or for him. He was also a modest man, never courting the limelight or seeking kudos for his achievements. His attitude towards those who feed off the accomplishments of others is borne out by an excerpt from his diary entry for 22 July 2001, less than two months before he died.

Headed "People Types," it reads: "There are two types of people in the world: those who do the work, and those who take the credit. Try to be in the first group. There is less competition."

Peter Jenkins leaves his wife of 38 years, Sarah (née Woodall), with whom he also had a daughter, Siana (Yewdall), who now resides in Devon, in the UK.

Jack Barrah OBE, Kenya-born, served with the Kenya Game Department and with its successor, the KWS, between 1955 and 1992. A close friend to Peter Jenkins, he now guides professional safaris.

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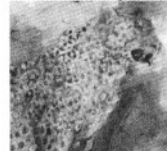


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Let me begin by extending our deepest sympathies to all our US members, together with our sincere condolences to anybody who may have been bereaved in the tragic events of 11 September 2001. May God be with you all.

In the course of settling down to the real work of running the Society's secretariat, I have come to realise the full extent of the daunting task ahead. Yet, at the same time, it has been a revelation to me just how passionately our many colleagues – or should I say, comrades-in-arms – regard the Society and yearn to see it flourish and once again lead them into battle.

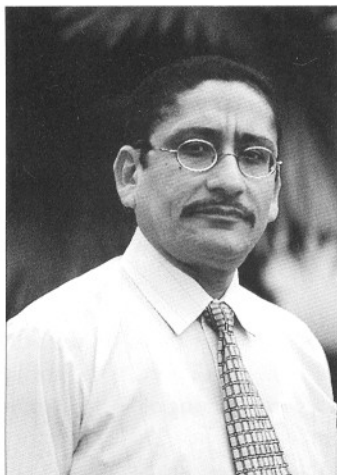
And a battle there certainly is afoot, if we are going to succeed in safeguarding what precious little remains of our priceless wildlife and habitats.

In October, for instance, Kenya's Environment and Natural Resources Minister made known in the official *Kenya Gazette* the government's intention to excise 67,725 hectares of mainly virgin forest cover. The excuse: that the targeted areas had already been settled by landless people, and that, in some of the areas, there was no longer any forest left! Both claims are factually incorrect.

This intention is of course nothing new. Indeed, the previous Environment Minister had made the same proposal back in February. The country went into shock then, and has since demonstrated its outrage in many ways: by lodging petitions, by going to court, and – in some cases – by going out and starting tree-planting schemes.

The EAWLS/Kenya Forests Working Group was, from the outset, among those who raised legal objections to the proposed excisions. These were met, sadly, with a deafening silence from the government. Then, to our relief, the Minister who made the initial announcement was replaced in June. The hope was

From the Director's Desk



that this might herald the start of a new, constructive dialogue. But our optimism – so far anyway – has proved ill founded.

Since October's repeat announcement from the new Minister, the EAWLS/KFWG team has embarked on a campaign that has ignited public involvement on a scale not seen in recent times. Protests have been made on many different fronts. A relentless media exposé on the potentially calamitous effects of the excisions has elicited amazing support from Kenyans everywhere.

A legal 'war', too, is brewing, and a syndicate of lawyers has volunteered *pro bono* counsel on any EAWLS case brought before a court. By acting as the focal point for such efforts, we remain optimistic that we may succeed in waking up somebody who can reverse this latest assault on our environment.

Meanwhile, back at the Society's Nairobi headquarters, our priority remains one of stabilising our finances. Faced with growing demands on many conservation fronts, this is proving to be no small challenge. And both Fauna and Flora International (FFI) in the UK and the Estate of the late Maria R Acolia have been lifesavers in this respect.

FFI has over the past two years steadfastly supported all our rebuilding efforts. The personal attention of FFI Executive Director, Mark Rose, and the expert counsel of Chris Huxley, have greatly facilitated this process. For their continuing assistance, we are especially grateful – just as we are grateful to all our members who have weighed in with invaluable extra support.

In particular, I should like to thank the African Safari Club, Kenya; British Airways, Nairobi; and FFI for agreeing to airfreight and to distribute SWARA to our overseas members. This gesture has significantly reduced our magazine circulation costs – and will allow us to concentrate on our more pressing conservation goals.

The Society is, I believe, holding true to its pledge to present an ever more visible public profile – whether in the media, through our regular lecture evenings, or at specially arranged events. There are now many opportunities for participation by members. But, so far, too many members have been a little shy in wanting to come forward to get involved. So, to them, let me say once again: come forward, volunteer your services – get involved!

In December, our Nairobi fund-raising committee laid on an exciting event involving schools and some of Kenya's top rally drivers. The idea of such an event – and there will be many others – is to heighten popular awareness about the threats facing our environment, while at the same time raising funds towards projects that address the specific threats concerned.

But the accent, always, is on giving conservation a 'fun side' as well. And the enthusiasm, in the run-up to December's GP Karting event outside Nairobi, was nothing short of incredible.

– Ali A Kaka

Karibuni

The East African Wild Life Society takes particular pleasure in welcoming the following new members to its large and fast expanding conservation family:

Joining us as corporate members are: **Across Africa Safaris, Private Wilderness, Chemical & Solvents (EA), Highlight Travel, ZDF German Television and Shades Of Africa Tours & Safaris**, all of Nairobi, Kenya.

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Tribal secrets

Two lovely large-format books on the Samburu exist already. So, why another? Author Rhodia Mann was made a Fellow of the Royal Geographical Society for her ethnographic study of the Samburu; and here, in her superbly produced limited edition *Talk to the Stars*, her explorations go well beyond the usual picturesque tribal trappings.

A childhood fascination with the Samburu and their culture drew her back in adulthood, on her return to Kenya after many years abroad. That her approach should differ markedly from any other was almost a foregone conclusion, given her upbringing by parents with an outstanding collection of ethnic artefacts from all over Africa.

By definition, whatever a nomad owns must be portable and functional. More conventional art forms cherished by the sedentary – such as paintings or sculptures – are unknown, being wholly irrelevant to the lifestyle. But items in daily use and, particularly, personal ornamentation, are another matter altogether, many having social or ceremonial significance. Like their cousins the Maasai, the Samburu are noted for their love of exuberant beadwork.

As something of an authority on beads and their history, Rhodia would have been especially fascinated by, for example, the appearance – in traditional Samburu marriage necklaces – of dark pink Venetian beads known to have been traded to West, not eastern, Africa during the 1830s. This interest may have served as an early bridge in establishing the mutual trust that would allow her to go on to form many long-standing friendships with Samburu families.

TALK TO THE STARS

by Rhodia Mann

Photographs by Clive Ward
Published by Desert Sands,
Nairobi (2001)

pp. 164; limited edition
KSh 6,900

Reviewed by Dee Raymer

Over a 20-year period, whenever time, finances, and other commitments allowed, Rhodia would head north, consolidating old friendships and making new ones. In 1990 she was invited to attend that year's circumcision ceremonies, marking the opening of a new age-set. This was a singular honour, and became the catalyst that drew her into the less-explored realms of tribal mysticism and magic, traditionally the preserve of the elders.


Age-sets or grades are rites of passage, formed usually at nine- to twelve-year intervals. They define clearly the social role of each male member of the tribe, who progresses from boyhood to warriorhood, before becoming a junior, then a firestick, and finally a senior elder.

It was the elders who shared with Rhodia their more esoteric traditions – relating to God, sacred sites, astrology, astronomy, herbalism and healing, divination, animal totems, curse-removals, the making of protective amulets, heaven, the afterlife, and reincarnation.

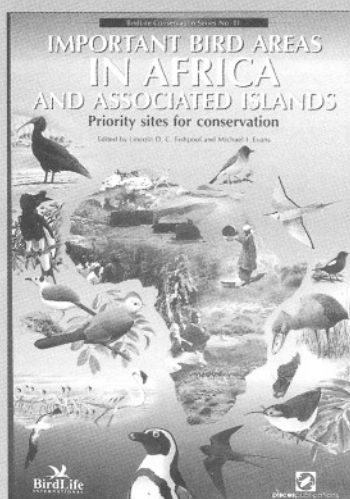
The tribe's origins are lost in an unwritten past. There are many similarities to the Maasai, along with influences from

other northern tribes such as the Boran and the Rendille. Also evident are some parallels with the Roman, Ancient Egyptian, and Hebrew cultures. All that may be deduced reliably, however, is that the Maa-speaking peoples came from somewhere further north; but, as Rhodia observes, "How far north is, alas, an unanswerable question."

The Samburu's own legend, which opens the book, has them coming to Earth from Venus on a long rope with which God (Ng'ai) has joined the two worlds. On another come their cattle. They live happily for many years – until the warriors conspire to challenge the elders' authority. In his rage, Ng'ai severs the rope, so the Samburu can never return home. The small metal star the women wear on their foreheads is a reminder of Venus, the tribe's mythical birthplace. And Venus is, of course, also the most important element in Samburu cosmology.

Beautifully photographed by Clive Ward and written both readably and well, *Talk to the Stars* is an unusually intimate account, tempered with affection and respect, of a proud people who "take no more than they need" from their surroundings. In a world where so-called 'development' all too often translates into a shoddy throwaway lifestyle, crumbling social hierarchies, sprawling slum settlements, and the need for hard-to-find salaried employment, it is hard to argue with Rhodia's feeling that the Samburu "fit into the environment in ways that we do not" and perhaps "hold secrets to a happier life that we have long since lost." 

Each copy of *Talk to the Stars* is signed by both author and photographer. Enquiries can be directed to < rhodia@wananchi.com >.



Bird alert

Nearly 10 % of Africa's 2,313 known bird species are described as globally threatened in a new continental survey published by Birdlife International, the world-wide affiliation of conservation bodies. Unchecked agricultural encroachment and habitat clearance are – not surprisingly – identified as the main threats.

The survey, entitled *Important Bird Areas in Africa and Associated Islands*, took eight years to complete and outlines no fewer than 1,228 important bird areas (or IBAs) in more than 50 countries. Encroachment on, and clearance, of habitat – exacerbated by "unsustainable development, often appalling poverty, civil conflict, and international debt" – are found in the survey to be seriously threatening 51 % of

all listed sites, placing the survival of 218 bird species in immediate danger.

The survey finds that 81 % of Africa's IBAs are accorded no protection under international laws such as the Ramsar Wetlands Convention, and that 44 % of these sites benefit from neither legal recognition nor official protection under national laws. By protecting just 7 % of Africa's land mass, many of the continent's imperilled bird species could still be saved, the survey concludes.

Important Bird Areas in Africa and Associated Islands runs to 1,024 pages and costs UK£ 55. Enquiries can be directed by e-mail to < piscas@naturebureau.co.uk >

Spoilt for choice

FIELD GUIDE TO THE BIRDS OF EAST AFRICA

Kenya, Tanzania, Uganda, Rwanda, Burundi

by **Terry Stevenson** and **John Fanshawe**

Illustrated by **Brian Small, John Gale,**
and **Norman Arlott**

Published by T & A D Poyser (London); 2001
UK£ 30

Reviewed by **Bernd de Bruijn**
and **Itai Shanni**

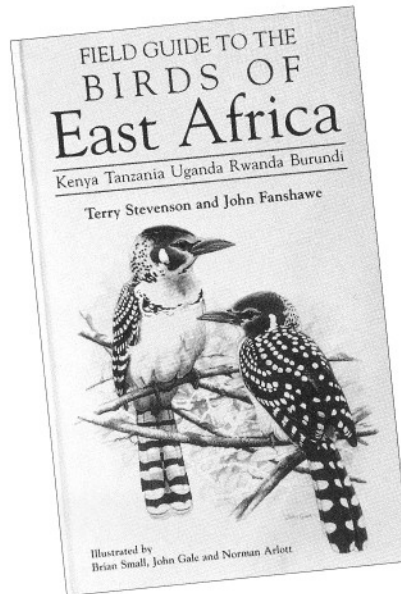
Of late, birdwatchers everywhere have been spoilt by the many excellent new guidebooks to the birds of different regions of the world – so spoilt that a phrase like ‘Birdwatching in (Wherever) will never be the same again’ has become almost banal.

And still the spoiling goes on, with the advent of yet another landmark guide to our region in the shape of ‘Stevenson and Fanshawe’ (as this book will no doubt come to be known). Their *Field Guide to the Birds of East Africa* takes in the 1,388 species of Kenya, Tanzania, Uganda, Rwanda, and Burundi, representing about 80 % of all sub-Saharan African bird species.

The new book contains a surprising amount of information, considering that its layouts show the text, the maps, and the plates in one view, yet still the book does not exceed the dimensions (22 x 14 x 4 cm) or weight (1,200 g) of a regular field guide.

There are good topographical maps, showing the region’s habitats and Important Bird Areas (IBAs) both in the introduction and on the inside covers, front and back. Given the recent launch of the *African Important Bird Areas Directory*, the IBA map is an excellent idea. It will help birdwatchers to find the hot spots, while emphasising the connection between conserving birds and safeguarding their habitats. A list of the various organisations specialising in bird conservation in all the countries covered is also provided.

The 1,388 species are presented in 286 plates, following the currently accepted taxonomic order. As most birdwatchers are used to this order, looking up birds should become easier and faster. The nomenclature is based on the official East African list published in 1980 by the East African Natural History Society (now Nature Kenya), with the alternative East and



Southern African common names given in brackets.

Having the plate and the corresponding description and map appear on facing pages for every species is a major advantage. The need for endless thumbing through a book, to find the page bearing the write-up on a pictured bird should, mercifully, now become a thing of the past.

Another good idea is the grouping (within larger families) of species that are similar in either appearance or habitat preference. So, for instance, in the case of Goshawks and Sparrowhawks (*Accipitridae*), the woodland species appear on one page, the open country species on another. Other examples are the Honeyguides (*Indicatoridae*) and the Sunbirds (*Nectariniidae*), both of which are grouped according to their appearance. These aspects make the guide easy to use and are a considerable help with the often complicated task of identifying birds in East Africa.

Of necessity, the descriptions are rather short, but these do always include details of the bird’s call, its habits, and habitat. Brian Finch’s notes on the sounds are especially helpful in the field. On some pages, however, there is plenty of blank space into which further details might have been inserted.

All the region’s species are depicted, including vagrants and some very recent additions to the country lists. Most species are shown in flight and in several plumages taking into account sex, age, and geographic variation. Particularly helpful are the pictures of juvenile Robins and Robin-chats and the various subspecies of Sparrows and Larks.

Illustrating birds is difficult at the best of times. Spoiled birdwatchers, though, are

very hard to please. Capturing a species’ likeness (or ‘jizz’, in birdwatchers’ parlance) is an exacting art of representing shape, colours, attitude. It is, in part, also a matter of taste, a balancing of art with science. Most of the plates in this book are extremely accurate and realistic, meeting – if not exceeding – modern standards for bird art. Indeed, many of the depicted birds look so alive, they seem poised to fly out off their plates.

This majority aside, there are a number of plates that do not properly do justice to their subjects. In some cases, the colours appear a shade too dark (Turacos, Cuckoo-shrikes, Kingfishers); while in others (Coucals, Shrikes), there is a tendency to give the birds heads that are rather too angular and bills that are too heavy. This is especially true of the Weavers, some of which – as a result – look quite different from the real thing. Overall, the migratory birds come over as generally better painted than some of the African species.

The most conspicuous shortcoming, however, stems from obvious discrepancies between plates, depending on the artist. For, while most are excellent, some are quite different, both in style and in quality. Examples are the Longclaws, Flycatchers and Batises; the Tits and the small finches (Waxbills, Twinspots and the like, with the exception only of Whydahs and Indigobirds). These illustrations seem overly simplified, and are disappointing when compared with the better plates. Most, though, are probably still adequate for identification purposes. But this, sadly, is not true of one notoriously difficult family: the Cisticolas.

These ‘little brown jobs’ are so hard to tell apart in the field that identifications are usually the combined result of appearance, voice, habitat, and locality – and, not least, experience. It is with the plates, however, that one generally begins. Additional knowledge gained recently has revealed much about these tiny birds, and it would have been good to see this knowledge better reflected in the plates. So, if you come across a Cisticola (and who doesn’t?) and you want to know which one it is (another question altogether!), then you might be better off consulting *Birds of Kenya and Northern Tanzania* (Zimmerman, Turner and Pearson, 1996), which, in our view, offers better pictures of these birds.

It is our conclusion that, a few disappointing plates notwithstanding, this guide will – alongside ‘Zimmerman’ – prove indispensable in helping us already spoilt birdwatchers to identify, and to revel further in, the many bird species found in East Africa’s extraordinarily diverse habitats. 🐦

In all its glory

A strange thing happened to Nigel Pavitt as he was flying over the searing hot salt flats of Lake Assal in Djibouti. He chanced to glance at the instrument panel just as the pilot was going into a tight turn so that he could take the striking photograph of a camel caravan that would become the frontispiece of this book.

The author noticed then that they were – amazingly – flying at an altitude of 300 feet (about 90 metres) below sea level. For here, in the Afar depression, is Africa's lowest-lying expanse of dry land, in places more than 150 metres below sea level.

This is just one of many extraordinary excesses to be found in the Great Rift Valley, where such superlatives abound. The longest such valley on earth, the Rift extends – over its African portion – from the Red Sea in the north to the mouth of the Zambezi in Mozambique, a distance of some 5,600 kilometres.

The Rift's dramatic western arm separates Uganda, Rwanda, Burundi, and Tanzania, to the east of it, from the Democratic Republic of Congo (DRC) and Zambia to the west, forming the cradle of Central Africa's picturesque 'Great Lakes Region.' The eastern rift cuts through Ethiopia, and both Kenya and Tanzania, before the two join to slice through Malawi and into Mozambique.

Lake Tanganyika, in the valley, is the longest freshwater lake in the world and almost the deepest. (Only Lake Baikal in Siberia is deeper.) Lake Malawi, almost as large, supports a fish population more diverse than any other lake and includes many cichlid species found nowhere else.

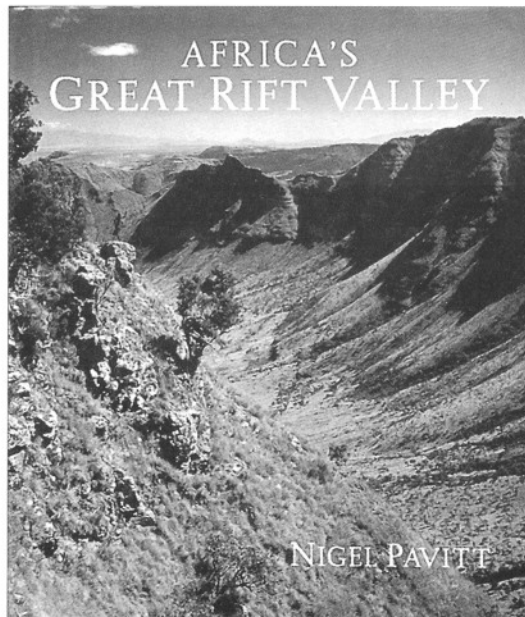
AFRICA'S GREAT RIFT VALLEY

by Nigel Pavitt

Published by Harry N Abrams Inc,
New York (2001)

pp. 208, 202 photographs
in colour, 4 maps
US\$ 49.50

Reviewed by **Bella Bowker**



The rubble of black lava boulders skirting Lake Turkana contrasts markedly with the serenely beautiful, fjord-like shores of Lake Kivu on the Rwanda/Democratic Republic of Congo border, and with the precipitous green escarpment of Malawi's Livingstone

Mountains, which plummet straight down into the lake for an astonishing 670 metres below the water's surface.

That most imperilled of the great apes, the mountain gorilla, inhabits the forests of the Virunga Volcanoes, straddling the valley, while some of the greatest concentrations of wild animals found anywhere roam the extensive grasslands of the valley floor. Many of the oldest known hominid fossils, too, have been found in the valley.

Tackling such a vast subject is a positively daunting undertaking. But Nigel Pavitt has managed to include, not just the region's geological history, but the human history as well, of the countries through which the valley passes. He describes the flora and fauna of both the valley floor and the ridges and mountains flanking the Rift. These include the dramatic highlands of Ethiopia and the majestic Rwenzori Mountains, whose snow-clad summits rise more than 5,000 metres above sea level.

The photographs, throughout, are outstanding. Magnificent views extend sharp and clear into the far distance, evoking a mood or a time of day – often both at once. Portraits of people in close-up are interspersed with scenes of markets, tribal and religious ceremonies, crafts such as weaving and basketry, and building styles – along with animals and birds, of course, and vegetation types.

Some of the pictures are especially memorable; for instance, the one on page 85 of a man, waist deep in a salt lake with a long pole in either hand, perfectly reflected in the still water; or that on page 151 (reproduced here, on the facing page) of a shoebill on the wing with, in the background, a goliath heron in soft focus to lend balance to the composition.

The pink and mulberry-red hues of Lakes Magadi and Natron, and the surreal effects

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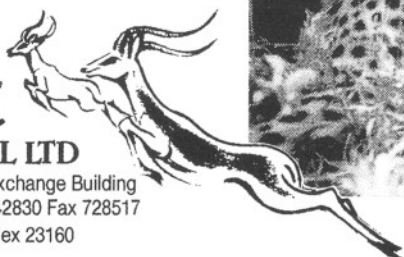


Photo: Bela Bell-Sharma



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Shoebill in flight: one of many stunning and unusual images in Africa's Great Rift Valley.

of swirling salt deposits and reflected sky, are superbly captured. And there are some unusual photographs, too, of Ol Doinyo Lengai in Tanzania. These show the volcanic cone with a snowy white mantle over it, following an eruption in 1966 of carbonite lavas, which turn white on exposure to the air.

The rusting hulk of the lake steamer, the *Robert Coryndon*, lying half-submerged at Butiaba on Lake Albert makes for another interesting, if sad, picture. Anyone who ever travelled on this, or any of East Africa's other great lake steamers, will have fond memories of the experience. How did she founder? – Surely not just because the lake level rose, as

the caption suggests. And why was she never refloated?

The maps used in the book are paintings by Chris Robitaille, skilfully executed to resemble old parchment, with fine shading and delicately drawn illustrations of people, animals, and birds to fill in the gaps. A nineteenth-century explorer would have been proud of such cartography. It is a pity, though, that some of the places described in the text – the Semliki River, for example, and Lakes George and Mutanda – are not marked. Lake Mutanda in southwest Uganda, in particular, is the subject of one of the book's most stunning landscape photographs, appearing at the beginning as the double-page title spread.

This text is packed with information. Indeed, every page is full of fascinating facts; and, while some may be familiar, others

appear new and interesting simply because they are presented from a refreshingly different point of view. It is risky, however, to take as literal truth (as the author seems to do) such apocryphal tales as that of explorer Samuel Baker's buying his wife Florence at an Ottoman slave market just as she was about to be sold into a middle-eastern harem.

Ann Baker, the wife of Samuel Baker's grandson, in her introduction to Florence Baker's diaries, *Morning Star* (1972), describes this as a sort of family joke. The story, she says, was put about by Baker himself, to explain how it was that he had unexpectedly cut short a hunting trip along the Danube with a friend and returned instead with a beautiful young Hungarian bride.

For those already familiar with Nigel Pavitt's earlier books (*The Early Explorers, Samburu, Turkana*), this one is by no means simply more of the same; it is, quite genuinely, excitingly different. In style, it is at once both visually impressive and reader-friendly. But it also has an endearing light touch, which should greatly add to its popular appeal.

If this book errs at all, it is in leaving you wanting to know more. But how could it be otherwise, on a topic so immense and all-encompassing? Nor is this a travelogue, although the author clearly travelled widely to collect the material. It is much more: a cornucopia of fascinating information, a blend of social and natural history, of stories from yesterday and today and – in the concluding chapter – a brief look at tomorrow as well.

A delightful souvenir for visitors, *Africa's Great Rift Valley* will doubtless also prove a welcome addition to the home libraries of many either living in, or fascinated by, any part – or aspect – of the wide geographical and social sweep that is portrayed. 🐾



Global Express, Logistics & Mail

Brush with a buffalo

Anthony Cheffings thanks his lucky stars, and learns a lesson he won't be forgetting in a hurry ...

The explosive snort came from about 20 paces out to my left, a terrifying and unwelcome sound to hear 30 metres from the safety of a vehicle when armed with nothing but a pair of binoculars.

I had left the Land-Rover, with my five guests safely inside, near the Mara River to see if I could find a suitable vantage point from which we could look out over the opposite bank where a zebra herd, several hundreds-strong, was drinking.

I had just found the ideal spot, safe – I thought – and accessible, while offering a good view of the drinking zebras. I was making my way, between croton bushes, back to the car to collect my guests when that terrible explosive sound snapped my head around.

Breaking out of some dense bush at the river's edge, and powering directly towards me, came a large buffalo bull, jet black but for a plastering of drying mud on his left flank. Just one look at him, and his intention was clear – to inflict serious bodily harm.

I bolted for the vehicle, trying – by angling my run – to put as much as possible of the croton thicket between me and the oncoming buffalo. There was 20 metres of bush and a further ten metres, or so, of open ground separating me from safety.

Several strides into my dash, I glanced back to see if



© ANTHONY CHEFFINGS

my rapid exit strategy had appeased the buffalo. No such joy: for, to my horror, I found I was still very much the focus of the oncoming beast – potentially a dispenser of debilitating injury, even death.

The buffalo now had a full head of steam and was coming straight for me, crashing through the spindly crotons. Adrenaline pumping, I ducked under branches, and over fallen sticks, in a desperate lunge for safety. Somebody was shouting from the Land-Rover.

I had just reached the last of the bushes when fate intervened. I stepped on a loose branch, which flicked up between my legs, sending me sprawling forward on my hands and knees. Over my right shoulder, I saw the buffalo's horns coming down over me, ready to toss me, gore me, trample me, dispatch me who knows whither.

A primitive survival instinct then took possession of me, for

I was past thinking by now. I ducked under the buffalo's right horn and continued the roll over to my right that my fall had set in motion. By some miracle, or perhaps even the intercession of a guardian angel, the buffalo's great forward momentum carried him over and past me, brushing me with one foot and gouging the ground with his horns, just inches from my prostrate form.

Struggling back on to my feet behind a slender croton, I then watched the buffalo crash into the side of the Land-Rover, just below the point where one of my guests had been shouting and gesticulating in an effort to distract the beast. The impact was massive. But afterwards, to everyone's relief, the beast carried on past the rear of the vehicle and out on to the open plains, leaving behind some very shaken individuals – and a large dent in the side of the vehicle.

Back in my tent now, writing this and trying to capture the full horror of the ordeal, I can hardly believe that any of this really happened. Could I be dreaming, perhaps? That first snort seems almost surreal now, as does the sight of those two tonnes of raw

muscle and sinew bearing down on me; the spectre of that awful head of horns that so nearly bored into me.

But this was no dream. Along the back of my thigh, I have the deep scratch from the branch that upended me. I have bloodied knees and scraped elbows to show for my fall – and then, of course, there are the double impact marks on the side of the Land-Rover. It happened, all right.

I attribute my survival, let alone my escape from serious injury, to three main factors. First, the branch that brought me down was undoubtedly a blessing, as – with hindsight – I know that I should never have made that last ten metres to the Land-Rover.

Secondly, the evasive instinct gained from 25 years of playing rugby, and of having to dodge the charges of overgrown prop-forwards, may have helped. And thirdly, I am indebted to the considerable distracting powers of Denis O'Rourke, from Houston, Texas, who stood yelling and waving in the rear hatch of the Land-Rover – and whom of course I shall never forget.

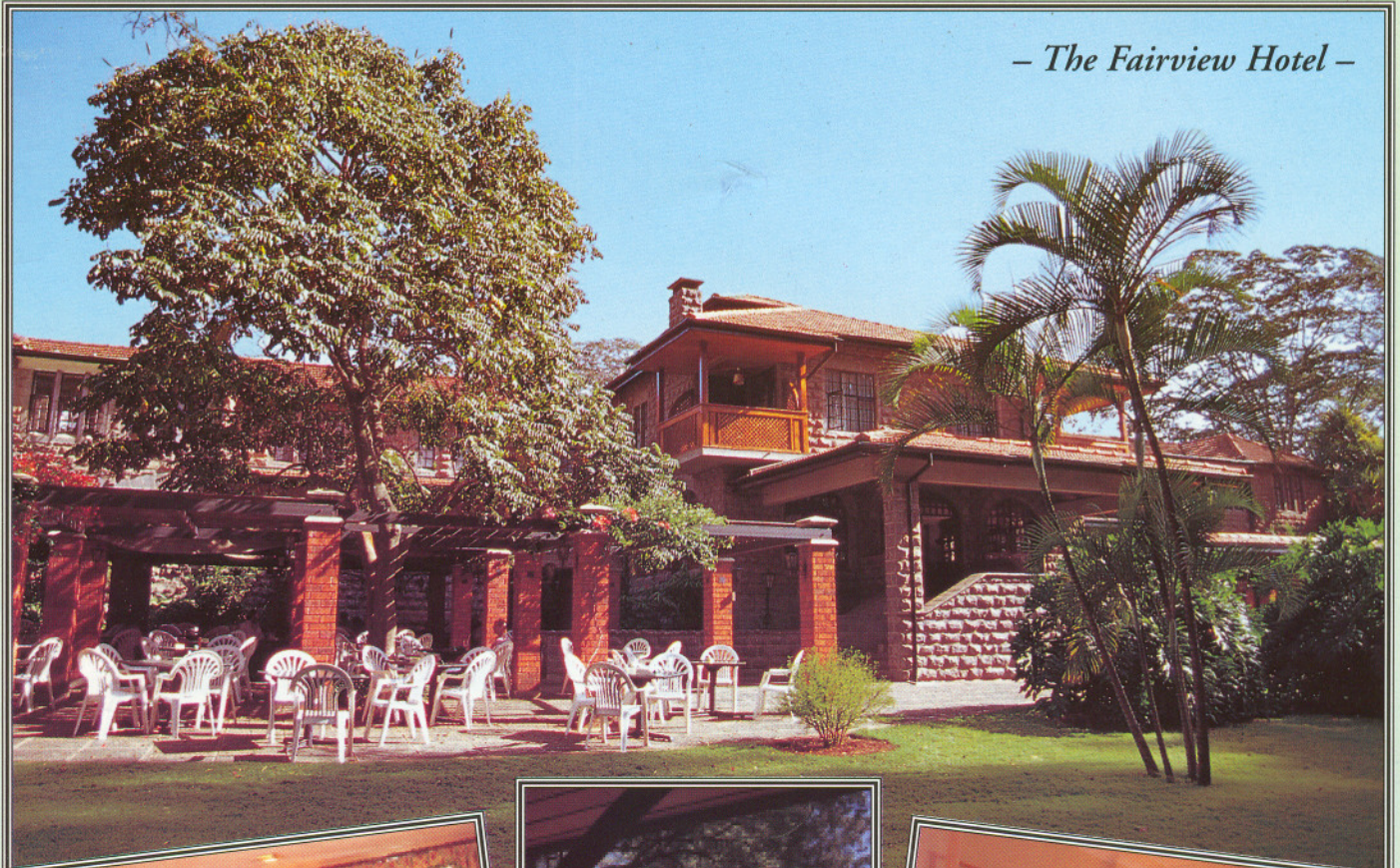
This experience goes to show how, in the African bush, mortal danger can erupt from apparent tranquillity in the blink of an eye. That sort of danger is never far away.

But there is another danger. And this second danger stems from complacency: something that sets in all too easily after many years without incident. Suitably chastised, I vow never to let something like this happen again – not to myself, nor to guests who place their trust in my ability to steer them clear of such perils.

I ducked under branches, over sticks, in a desperate lunge for safety.

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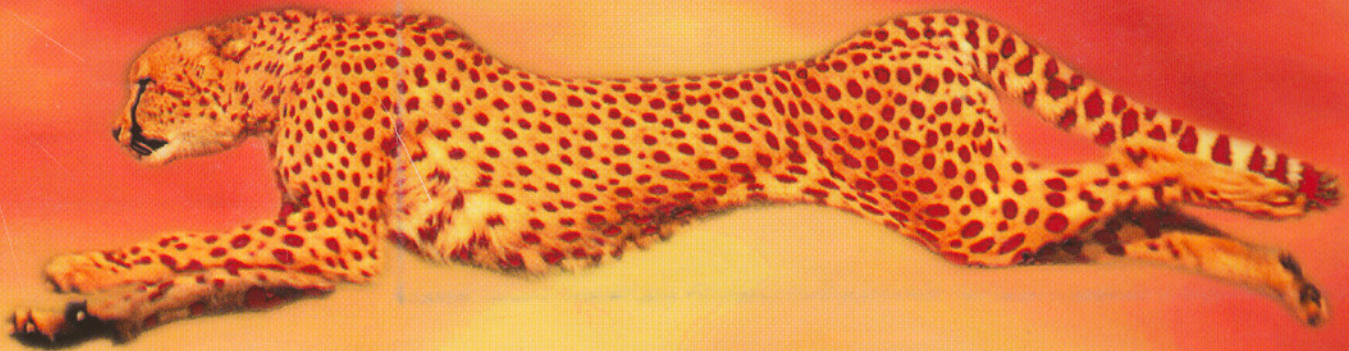
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