

# FROM RHINO HORNS TO DAGGER HANDLES— A DEADLY BUSINESS

To save the critically endangered rhino, we must find a substitute for its horn, highly prized in Yemen for making dagger handles

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**A**FTER 10 YEARS OF PERIODICALLY visiting the small Arabian country of Yemen, I know my way around the ancient bazaar in the capital city of San'a quite well. The street of the dagger makers was not difficult to find; as I approached, I could hear the melodic sounds of hammers striking metal blades on well-worn anvils and the erratic hum of files rasping on rough hilts. In one cubicle an elderly man crouched in dim light as he applied the flame of a blowtorch to the hilt he was shaping. It was obvious from the stench of burning hair that a rhino-horn dagger was being made.

**Below: In San'a, the capital of Yemen, buyer and seller haggle over the price of a *jambiyya*, or dagger.**

**Opposite: The most prestigious daggers have rhino-horn handles.**

Rhino horn has long been considered a prestigious item in many parts of the world. In Yemen (officially the Yemen Arab Republic) it is of practical and ornamental value, used in making hilts for the traditional *jambiyya*, or daggers, worn by most men. In India and China a variety of pharmaceuticals are derived from rhino-horn shavings and powder. It is commonly thought that Asians value the horn as an aphrodisiac; but in fact this use appears limited (see "Deadly Love Potions," *ANIMAL KINGDOM*, January/February 1987). Other parts of the rhino are also used to make medicinal and sexual potions. Esmond Bradley Martin, who has studied the rhino-product trade in more depth than anyone, reports that rhino blood and urine are commonly sold in Asia.

Unfortunately, the rhino horn that

the Yemenis and others find so useful comes from animals poised on the brink of extinction. Twenty years ago, the worldwide population of the five rhino species was estimated at 70,000; barely 10,000 survive today. The black rhino has been especially hard hit. Once a common sight on the East African savannas, the species has been all but eliminated by poachers over most of its range; only about 3,700 remain, nearly all in wildlife sanctuaries. The rhino's horn—which evolved as a defense weapon—has become its Achilles' heel.

Scientists have known about the poaching problem for some time, but only in the past 20 years have there been concerted efforts to save rhinos. These endeavors have focused mainly on protecting animals in the wild or within reserves—an approach that worked well in South Africa, for example, where the once critically endangered southern white rhino is flourishing under strict protection. But the cost of guarding every wild rhinoceros is clearly prohibitive, especially for financially strapped African and Asian nations. Most countries where rhinos occur have signed CITES (the Convention on International Trade in Endangered Species of Wild Fauna and Flora), which bans trade in all rhino products. Though this legislation is important, its enforcement is beyond the means of most governments and conservation organizations.

One way to help ease the pressure on rhinos is to try to reduce demand for their products. In 1987 the United States Agency for International Development and the World Wide Fund for Nature (WWF) launched a project to examine the use of rhino horn in



## How to See Mountain Gorillas

If you are over 15 years old and very fit, have money to spare, and are really interested in mountain gorillas, there are two choices for seeing them in the wild: Volcanoes National Park, in Rwanda, and Virunga National Park, in Zaire. For either, you must be prepared to ride over bad roads, hike for hours in rough terrain, and, in certain months, withstand cold rains. For all this discomfort, you will be rewarded with the wonderfully intimate experience—at close range for one full hour—of watching these magnificent animals eat, play, and groom one another. From the viewing distance of only 15 feet, you may even find you prefer a wide-angle lens to a telephoto for recording their family life.

Besides visiting the gorillas, you can hike the spectacular Virunga Mountains, where with luck you will see black-fronted duikers and bushbucks (both forest antelopes), rare golden monkeys, and such unusual birds as the brilliant red and blue Ruwenzori turacos. (See page 64 for other travel suggestions.)

Reservations to visit the gorillas in either Rwanda or Zaire must be made well in advance. For the peak times of summer and Christmas and spring vacations, six months to a year is not too far ahead to plan. Summer brings the advantage of little rain but also the disadvantage of haze, which limits your views of the scenic mountain region. I think January, February, and September are the best times to go.

Several U.S. companies offer gorilla-trekking tours. These include: Geo Expeditions (1-800/351-5041) and Wanderlust Travel (1-303/777-5846), which go to Rwanda; and Adventure Center (1-800/227-8747) and Voyagers International (1-607/257-3091), which go to Rwanda and Zaire. You can also make independent travel plans, but I advise waiting for confirmation of gorilla-visit dates before finalizing other plans.



For the animals' safety, tourists follow safe-distance rules when with gorillas.

### For Rwanda

**Reservations:** Arrangements can be booked through several U.S. travel agents or one of two agencies based in Rwanda: Rwanda Explorations Ltd., P.O. Box 1545, Kigali, Rwanda (telex KGLBAKQ); and Rwanda Travel Service, B.P. 140, Kigali, Rwanda. Any of these can reserve local transportation and accommodations as well as flights. A ticket for one gorilla visit (including three days in Volcanoes National Park) currently costs about \$180 per person; a second gorilla visit the next day is an additional \$150.

**Flights:** You may fly to Kigali, the capital of Rwanda, via Europe on Sabena or Air France airlines, or from Nairobi on Kenya Airways.

**Local transportation:** A jeep or minibus must be rented in Kigali for the drive to Volcanoes National Park (one and a half hours on paved road plus an hour on bumpy dirt and stone roads). Prices range from \$200 (no chauffeur, up to four people) for one long day, to \$550 (chauffeur, up to seven people) for two days.

**Accommodations:** Hotel rooms range from \$10 to \$100 per night in Kigali. Those recommended include the Milles Collines, the Diplomat, and the Meridien. At park headquar-

ters you can rent a room in the guesthouse (spartan but clean) for \$10 per person per night; this is especially nice if you plan to hike in the mountains (additional guides are always available and there are many trails with a wide range of difficulty).

### For Zaire

**Reservations:** Arrangements can be made through U.S. travel agents or the following: Air Zaire (1-305/372-1717); or AMIZA, B.P. 372, Goma, Zaire (telex 21019). Letters take a minimum of two weeks to get to Zaire, so do not expect a speedy response. Tickets cost \$100 per person per daily gorilla visit.

**Flights:** You may fly to Kinshasa, the capital of Zaire, or Kigali, in Rwanda, on one of several international carriers originating in Europe. From Kinshasa, various private companies fly daily to Goma, the city closest to Virunga National Park. From Kigali, you can hire a car for the two- to two-and-a-half-hour trip on paved roads to Goma.

**Local transportation:** In Goma, you will need to hire a four-wheel-drive vehicle for the three- to four-hour drive to Jomba, the park station from which you will hike to see the gorillas. The cost is approximately \$300 (with chauffeur, up to five passengers) for two days.

**Accommodations:** A variety of hotels are available in Goma, ranging from \$5 to \$50 per night. Most highly recommended are the Grand Lac Hotel in the city itself and the Hotel Karibu outside town along the shores of Lake Kivu. A lovely rustic cabin is available at Jomba, where bedding and cooking and eating utensils (not food) are provided for six people at a cost of about \$10 per person per night. It is suggested that you spend the night before your gorilla visit at Jomba, given the necessity for an early start on the day of the visit. Make a reservation when you reserve your gorilla tickets.

A Vedder



**A dagger-maker in the Yemeni souk, or marketplace, uses a file to shape a rhino-horn handle. He can make 20 hilts from one horn. Because rhinos are so rare, the price of such a dagger starts at \$1,500.**

Yemen, which was known to be a primary consumer. I have spent much of the past 10 years studying the anthropology of Yemen, so I was asked to head the rhino-horn project. My primary task was to determine why the horn is so highly valued and what could be done to discourage its use and trade.

**A**LTHOUGH NOT A PARTY TO CRIES, the Yemen government had banned the import of rhino horn in 1982. But five years later a short walk through the bazaar showed that horns were still coming in.

One of the dagger makers invited me to sit beside him as he worked. He was from one of the two or three families that specialize in the making of hilts in the bazaar, and his pride in his craft was evident as we talked. He had been putting the finishing touches on a slagger hilt but dropped it to show me how he fashions them from start to finish.

"I don't keep any whole rhino horn here in my shop," he said with a laugh. "It's far too valuable."

In the basement of another shop he cuts out the rough shapes of the hilts,

two or three from each pound of horn. The average rhino horn weighs six to eight pounds, so he can make about 20 hilts from one horn. "With so little rhino horn around these days," he said, "I make the hilts smaller. Just look at this old one I'm wearing." He pointed to the large-handled dagger sticking out of an ordinary sheath on the leather belt around his waist.

"I can make up to 20 hilts a day," said the craftsman, and he opened a cloth to show me the ones he had finished that week. Because of the sharp decline in rhino numbers, most of the hilts were made from water-buffalo horn.

After a hilt is cut out, it is shaped with files. The dagger maker was surrounded by various tools, each with a specific name and function which he carefully explained as he went along.

"Once it's filed, I put a flame to it to scorch the hairs. This makes it easier to smooth and polish." A small metal bowl at his feet held a mixture of sand and water that he applies with a cloth to polish the hilt. "And last," he said, "I rub on some sesame oil to bring out the color."

To understand the Yemeni fascination with rhino horn, I had to forget preconceived notions about aphrodisiacs and the like and listen to the people talk about their daggers. The Yemeni jambiyya is not an exotic heir-

loom hung over the fireplace like a Civil War sword. Virtually all adult men wear daggers, most on a daily basis—not for protection, particularly since the introduction of rifles, but out of pride.

Traditionally, Yemen has been a tribal society, and the dagger is a powerful symbol of a man's ability to defend himself and the honor of his tribe. It is also an integral part of the *bar'a*, a dance performed outdoors by tribesmen on religious and national holidays, at major tribal and national events, and at weddings.

The Yemeni practice of wearing daggers is not likely to disappear just because the society is modernizing. Even the most Westernized Yemenis still wear their daggers on ceremonial occasions and at important family events. In some ways the symbolic value of the dagger has increased since the civil war of the early 1960s, which toppled a centuries-old religious aristocracy and resulted in the formation of a democratic government. Today the jambiyya is a national symbol, something all Yemeni men can wear to show their new sense of unity as well as to maintain continuity with a rich tribal heritage.

**T**HE REASON FOR WEARING THE jambiyya is understandable, but why does the hilt have to be made of rhino horn? The answer is not as complicated as one might imagine. It has nothing to do with the rhinoceros itself or with its perceived powers to heal or increase sexual prowess. To put it simply: Hilts made of rhino horn are more resistant to wear and tear than those of other materials, such as common cow or water buffalo horn.

The jambiyya is probably the most visible indication of a man's status, somewhat like an executive's limousine. The best ones have carefully honed steel blades that are lightweight and durable; their wooden sheathes may be overlaid with silver or gold, and leather belts are often embroidered with silver or gold thread. The dagger's most vulnerable part is the hilt, because it is constantly handled and comes into contact with human skin oils.



## Poachers have run amok in Africa and Asia to satisfy the demand for rhino products, particularly the horn.

After centuries of making hilts, Yemeni craftsmen have found that nothing works as well as animal horn. Wood tends to chip or splinter and shows wear rapidly. Silver and gold are easily dented and require upkeep. It appears that no material, particularly not water buffalo horn, wears as well as rhino horn. (Actually rhino horn is not a bony growth; rather, it consists of millions of tightly compacted hairlike fibers.) My Yemeni friends have told me that a rhino-horn hilt looks better the more it is handled and the older it gets. After about 50 years, the hilt becomes a translucent yellow, like amber, and individual "hair" lines become more distinct. Some Yemenis can literally talk for hours about the qualities of rhino-horn hilts.

There are no rhinoceroses in Arabia and very few Yemenis have ever even seen a picture of one. The common name for rhino horn in the Yemen bazaar is *zurraf*, the general Arabic term for giraffe. The little information that is available on the rhinoceros is more fanciful than factual. Many medieval Arab writers passed on the unicorn of Greek myth as a representation of the rhinoceros.

One of the more widely read Arabic books on animals was the zoological lexicon of Muhammed al-Damiri, written in the fourteenth century. Al-Damiri claimed that the rhino could reach 150 feet in length. Some people thought the rhinoceros was the offspring of a mare and a male elephant. If that were true, reasoned al-Damiri, it would not be lawful under Islamic law to eat rhinoceros meat. It was even alleged that a baby rhino could stick its head out of its mother's womb and browse on nearby plants before birth. According to al-Damiri, the rulers of ancient China used the rhinoceros to torture prisoners: The

tongue of the animal was said to be so rough that it could lick the flesh off a man's bones.

In India and China, al-Damiri noted, rhino horn was supposed to help in recovering from epileptic fits, reduce fever, and help induce birth in women with severe labor pains. The claim that rhino horn could protect a person from the dreaded evil eye gave particular value to the horn. It seems strange that these cures never caught on in traditional Arab medicine.

The dilemma in Yemen is not how to eliminate superstitions but how to

counter a practical argument. Yemenis find no magic in rhino horn. The dagger makers are businessmen. Until the government banned the export of rhino horn in 1987 they made money not only from the daggers but also from the shavings, which they collected and sold to the Chinese, who *do* believe in the curative properties of rhino horn. The key in Yemen is to find an acceptable substitute for rhino horn.

Because the numbers of rhinos have plummeted, the price of horn has skyrocketed in the last few years and



**Though they wax poetic about the qualities of rhino horn, Yemenis find no magic in the animal's adornment. They would gladly use a substitute. The problem is finding a substance that is equally durable and attractive.**

## Yemen officially banned the import of rhino horn in 1982, but a walk through the bazaar showed that horns were still coming in.

it has become a luxury item that fewer and fewer people can afford. The main rhino horn trader in San'a told Esmond Bradley Martin that during the 1970s he brought in more than 6,500 pounds of rhino horn annually; in the 1980s his business was reduced to only about 2,600 pounds per year. Meanwhile, wholesale prices climbed from \$45 per pound in 1970 to about \$310 in 1978 to \$680 in 1987. The Yemeni currency has declined from 4.5 Yemeni riyals per U.S. \$1 in 1980 to 10 YR per U.S. \$1 today, making the price increase even greater. A new dagger made with rhino horn costs at least \$1,500; one with a water buffalo hilt can be bought for as little as \$10.

On the positive side, some people say the high cost of rhino horn means that there is less overall demand. But

at the same time, the increasing rarity of the horn and its recognized durability make a rhino-horn dagger an attractive investment for anyone with plenty of money. And if rhinos were to become extinct, some people reason, such a dagger would be priceless. In addition, the profit realized by the craftsman selling a rhino-horn dagger is 100 times that for a water-buffalo dagger. Thus the threat to the rhinoceroses remains.

**T**HE GOVERNMENT OF YEMEN has acted in good faith by passing legislation to ban the import, export, and use of rhino horn, but the law is of little avail unless the people themselves care about the rhinos' plight. There is no national wildlife conservation effort in Yemen today,

despite a few interested individuals in government and in the universities. The reason for lack of action is not difficult to understand. The country's 9.3-million-plus people are the poorest on the Arabian peninsula. Illiteracy is high—nearly 90 percent for females and 50 percent among males—and health facilities are few and far between. Life expectancy at birth is only 43 years for men and about 41 for females; the infant mortality rate is one of the highest in the world. When the people face so many critical problems, it is no wonder conservation receives little attention.

During my study of the rhino-horn problem, I talked with people on both sides of the issue, in and out of government. The inescapable conclusion is that there is no simple solution for making the demand for rhino horn disappear overnight. But there are opportunities for reducing the long-term demand and for involving Yemenis in the overall wildlife conservation process. For instance, samples of other hilt materials should be provided to dagger makers. The craftsmen I talked to in the bazaar were eager to experiment, particularly if they could find something competitive with the increasingly rare rhino horn.

Currently the government is engaged in a project to preserve the old city of San'a and traditional market crafts. The project director said he would be very interested in any help for the dagger craft. If no other natural materials could be found, a synthetic compound with the qualities of rhino horn might be considered. But such action needs to be taken immediately, before it is too late to save the few black rhinos left in the wild.

Over the long run, the best way to educate people about the threats to rhinos is to interest them in their own rare and endangered species. Government officials were wary of talking about rhino horn and justifiably defensive about the negative publicity Yemen has received on the issue. But they were eager to talk about possible

### Yemen at a Glance

**Size:** 75,290 square miles

**Population:** 9,274,173, according to 1986 census

**Capital:** San'a

Yemen (formally the Yemen Arab Republic and sometimes referred to as North Yemen) is located in the southwestern corner of the Arabian peninsula. It is bounded on the north and east by Saudi Arabia, on the west by the Red Sea, and on the south by South Yemen (People's Democratic Republic of Yemen). In contrast to the rest of the peninsula, Yemen is a remarkably fertile region, with relatively abundant rainfall and physical features varying from lowlands to desert to flat plains to high mountains.

The republic was formed in 1962 after a centuries-old religious aristocracy was overthrown. The official religion is Islam, and most of the people belong to the Zaydi and Shaf'i sects. The economy is agricultural and there is relatively little industry. Emigration is common in Yemen; during the mid-1970s, nearly a third of the Yemeni male labor force worked abroad, primarily in neighboring oil-producing states, and sent their wages back to their families. But in the early 1980s, a worldwide recession brought Yemen to near economic collapse. Then, in 1984, oil was discovered in the country and a pipeline was constructed to link the oilfields with the Red Sea. Domestic oil production began in late 1987 and is anticipated to yield much needed government revenues and jobs. Still, Yemen is a poor country. Illiteracy is at least 50 percent for males and almost 90 percent for females. Life expectancy at birth is only 43 years for males and not quite 41 for females.

Yemen has established a Department of Wildlife and Zoos under its Ministry of Agriculture and Fisheries, but because of limited funds, it is not yet operational. Legislation for a national wildlife conservation program was proposed several years ago but has not been acted on.

projects to preserve their own natural heritage.

Yemen is situated at a vital crossing point between East Africa and the Arabian desert. Much of the country is mountainous with inaccessible terrain that used to be home to a variety of animals, especially the ibex. Long before the coming of Islam in the seventh century, the ibex was a powerful symbol in Yemen. Today, this scimitar-horned goat is extremely rare and found only in isolated areas. The same holds true for the sleek Arabian gazelle, an animal of such beauty and grace that the Arabs named a genre of poetry after it. Leopards and baboons, common in the past, have largely disappeared from the highlands of Yemen since the introduction of rifles. There is a wide spectrum of bird life, although many species—such as the Arabian bustard, the Yemen thrush, the golden-winged grosbeak, and the bald ibis—are rare.

The Yemenis are proud of their land, and that pride can be stimulated to promote a conservation ethic. But Yemeni institutions need outside support and college graduates need scholarships to study abroad in conservation-related fields. Small-scale research projects on Yemeni wildlife should be funded. The University of San'a has begun limited surveys of the country's fauna and flora, but it does not have the resources to pursue a full-fledged conservation program. There is a Department of Wildlife and Zoos, in the Ministry of Agriculture, but it has understandably been given low priority and is not yet operational. The challenge is finding the right catalyst so that the government and individuals will want to move; a negative campaign—"Do not litter"—will get nowhere with these individualistic people.

This is where the media can play an important role. Almost everyone in the country, no matter how poor, has access to radio and television. Documentaries are common on the country's only TV station. The Ministry of Agriculture has expressed an interest in producing a documentary on wildlife conservation for its weekly television program. Perhaps a Yemeni film crew could be sent to Kenya to



**When there is a dispute between two Yemeni men, they often bring it to a tribal court. Each man must temporarily surrender his jamblyya to the judge as a pledge to abide by the court's decision and avoid bloodshed.**

show conservation in action, especially the efforts under way for rhinos and elephants.

The epitaph for the rhinos should not be written yet, but the threats to their survival cannot be underestimated. If we can make any inroads into the demand for rhino horn, the pressure on the wild populations will lessen. Unfortunately, the proximity of Yemen to East Africa and the rela-

tive ease with which items can be smuggled into the country mean that the illegal market will not disappear. Trying to find appropriate substitutes for rhino horn and focusing attention on Yemen's own wildlife conservation needs must go hand in hand. I hope that if I walk through the quaint bazaar of San'a 10 years from now, the street of the dagger makers will smell as sweet as roses. □

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