

STEALING A HORN OF PLENTY

Ecologists hope it's not too late to kill the market for a commodity worth its weight in gold

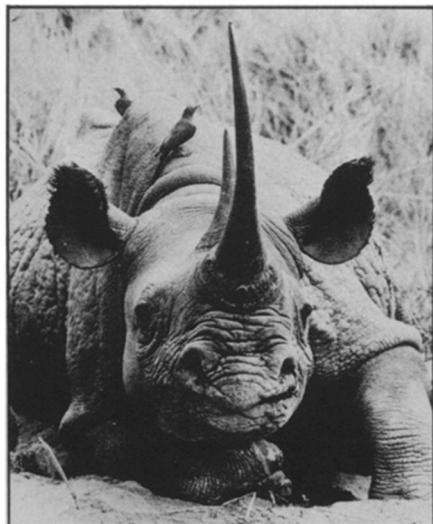
BY JANET RALOFF

Spies, paramilitary troops, a Middle East mafia, automatic weapons, international smuggling and murder are not subjects the World Wildlife Fund usually has to contend with when putting together a new campaign. But the one it's launching this fall in the United States, United Kingdom, Germany, Belgium and Kenya deals in all that and more. Its aim: to save the rhino.

For many endangered species, loss of habitat — forests replaced by cultivated fields, woodlands transformed into residential villages — is the principal force threatening survival. And, particularly in recent years, habitat changes forged through human adaptation have shoved the world's remaining rhinos into increasingly less favorable and remote enclaves. But the biggest threat to the rhino in this century is the poacher.

Of five species, perhaps only 20,000 to 30,000 animals remain worldwide. The black rhino (*Diceros bicornis*) is most common. Ten years ago, an estimated 20,000 roamed Kenya's foothills, savannas and forests. WWF's most recent estimates — based on weekly reports out of Nairobi — suggest a population of no more than 1,000 to 1,500 animals. In Tanzania, a similarly drastic decline has occurred among its black rhino population during the past five years. And reports coming out of Lusaka, Zambia, in August claimed that the rate of rhino poaching in the Luangwa Valley had reached one a day.

It is this increasing and devastating rate of slaughter that prompted WWF to shelve other scheduled projects — like its save-the-elephant campaign (a year in the



A real crowd pleaser: Rhinos place in top three of big-game tourist attractions.

planning) — so that it could devote immediate attention and resources to the rhino.

"I was in East Africa 'til last summer, working in Nairobi," recalled Adrian Phillips one rainy afternoon last August, while sipping tea in his Swiss office. Phillips is the general program director for the International Union for Conservation of Nature and Natural Resources, WWF's scientific advisory body. "When one first went on safaris one saw lots and lots of rhinos. The last time, we saw none."

Evidence for the scale of rhino destruction came as a side product of field research on elephants. Kes Hillman, a British

biologist who now chairs IUCN's African Rhino Specialist Group in Nairobi, had been counting elephants with Iain Douglas-Hamilton when they "began to realize, three or four years ago, that rhinos were disappearing more rapidly than elephants," Phillips said. That an actual threat to the African rhino's existence had developed, however, did not become clear until last year.

The black rhino is distinguishable from Africa's other two-horned species by its lip, a miniature prehensile trunk that wraps around branches. "We thought the black [rhinos] were fairly common," wildlife ecologist Lee Talbot told *SCIENCE News*, "but they've been so hammered that now in a number of areas — even in parks or reserves — there aren't any more, or if there are, there are only one or two when there had been dozens or hundreds."

Talbot (SN: 4/19/75, p. 260) joined the international office of WWF in Morges (now Gland), Switzerland, as its special scientific advisor and director of conservation after an eight-year stint with the President's Council on Environmental Quality in Washington. Like the rhinoceros, Talbot himself is one of a vanishing breed; he is among the few ecologists ever to have studied all five species in their native habitats. According to Talbot, "As far as we know, in the past five years or so, 90 percent of the black rhinos in Africa have been killed."

But it's the South Asian species that are most depleted. The lesser one-horned Javan (*Rhinoceros sondaicus*) once called its home everything from India and Sikkim to Java, Sumatra and China. Talbot says it now appears there are only 50 left in Java's Udjung Kulon reserve, a few more scattered throughout the country, "and conceivably one or two others — literally — in Burma or north Thailand."

Its Sumatran cousin (*Dicerorhinus sumatrensis*), a small, smooth-skinned species sporting two small horns "is in the worst shape of any," Talbot laments, "because it doesn't have any honest-to-God protection. We think there are only 50 to 150 left."

The southern square-lipped white rhino (*Ceratotherium simum simum*) — which isn't white but grayish black — was considered one of the most seriously endangered animals 20 to 30 years ago. But under the protection of the Umfolozi game preserve in Natal, South Africa, the

Under siege: In the past 10 years East Africa's black rhinos have been decimated.



Mark Boultton, WWF



Boulton, WWF

WWF



Museum of booty confiscated by Kenyan government includes shelves of rhino horns (above left.) Antipoaching patrols stalk bush (left), but can't be everywhere at once. Poachers didn't have to kill adult black rhino (above) to get his horn, it's just easier that way.

animals have staged a remarkable comeback. Although their overall numbers — around 3,000 — are small, they are thriving. Some have even been moved to re-stock regions where they had once roamed in abundance. A northern variety (*C. simum cottoni*) isn't doing nearly as well. Suffering the same intense poaching pressures as its black African kin, "it may total as few as 500 and certainly less than 1,000 animals," WWF researchers say.

The most stable variety is the Great Indian one-horned rhino (*Rhinoceros unicornis*). Only 20 years ago it was in notably worse shape than its southern white relative. Today, the 1,100 or so that remain could be the safest, Talbot says.

In a sense, it's the lore of the rhino, its mystique, that is forcing its extinction. Chinese herbal healers put great faith in the curative powers of rhino parts, including its blood, hair, teeth, internal organs and skin. In fact, anatomical charts illus-

trating which part of the animal is supposed to cure which ailment appear throughout the Orient. (Talbot recalled photographing one man at the Calcutta zoo who followed a rhino with a bucket dangling from a broom handle. Every time the animal urinated, the man reached out to capture the valuable fluid, which he later bottled in small vials for sale.)

Dwarfing all other body parts in value, however, is the horn. Despite the upward trend of the volatile gold boom, the black-market value of rhino horn easily keeps pace with the precious metal. The Indians and Chinese prize powdered horn as a powerful aphrodisiac. And according to the *Chinese Herbal Medicinal Dictionary*, small doses of powdered rhino horn swallowed in an herbal potion using rice wine or water cures vomiting of blood, collapse, measles, food poisoning, diphtheria, fits and medicinal overdoses. For boils and chicken pox, the horn-herb

mix is to be applied externally.

Although Western scientists tend to scoff at these alleged pharmacological virtues, Talbot tries to keep an open mind. Popes and kings used to carry rhino-horn cups with them as poison detectors. Legend has it that poison drinks would cause the cup to explode. Admitting he finds that hard to believe, Talbot points out that since many ancient poisons were strong alkaloids, they could easily dissolve the horn cup, turning a drink within it cloudy. Because many "old wives tales" and legends have some basis in fact, says Talbot, WWF has commissioned several Swiss pharmaceutical firms to analyze rhino horn to see whether there is any scientific basis to its curative reputation. Results are not yet in.

In the Middle East, demand for rhino-horn dagger handles exceeds supply. Because of its phallic shape, the horn is an expression of sexual potency, and in the form of a dagger handle it has become a traditional ceremonial gift for males at puberty. But elaborately carved and ornamented examples can run to \$12,000 or more in Middle East exchanges, so they are becoming a symbol of wealth also.

WWF researchers say the strong, brisk trade in dagger handles is a surprisingly little known and underappreciated segment of the illicit rhino-products industry. Their data show North Yemen carvers handling more than 2,000 horns during 1975 and 1976. And the business is lucrative. Four dagger handles can be fashioned from a single two-foot-long horn. Nothing goes to waste. "Probably worth as much or

more than the handles," leftover scraps and chips are ground into powder for shipment and sale in Asia, Talbot claims.

Particularly with the imminent shutdown of the large East Asian markets — such as China — moves to end poaching are focusing on the "Middle East connection." It is believed that East African poaching is carried out by Somali *shifta* (raiders) who, according to Talbot, are "supported, backed and armed by Russians — in part because of the territorial claims of the Somali in Kenya." IUCN's Adrian Phillips likened the ruthless *shifta* to "highly organized and militaristic bands of pirates."

And with the stakes so high in an area of the world where poverty prevails, corruption has become widespread. It's not hard to understand the temptation that a park warden earning \$50 a month faces when he's offered \$200 to simply "patrol somewhere else tonight." For honest colleagues, there's the bullet. Reports of a Tanzanian assistant warden "shot down" by *shifta* in June makes "the third in a short time," Talbot remarked last August. He added that word had reached him only the week before of three or four game-preserve defenders in Thailand who had also been killed by poachers.

Poaching will continue as long as a lucrative market for the product exists. Acknowledging this, a Convention on International Trade in Endangered Species — CITES — was drawn up in the early 1970s and eventually ratified by 60 nations. Talbot, one of the instrumental drafters of CITES, notes some irony in the current crisis. "We've succeeded so well [in curtailing trade in] most of the spectrum of species that poachers have shifted to rhinos." Why? The horn is relatively small and easy to conceal, he says, but more important, India, China and nearly all of the Middle Eastern countries — in other words, most of the world's rhino market — have yet to sign CITES (although China has promised to do so soon [SN: 10/20/79, p. 264]).

But the same economic incentive that is triggering the rhino's demise may also help the WWF campaign save it. "Each live rhino can earn more for Kenya every year than one dead one earns for the poacher or dealer who sells the horn," says Kes Hillman. Rhinos are not only part of the heritage that many emerging nations are working to preserve, but are also a primary tourist attraction. A recent survey reported in the July BIOSCIENCE, for example, found that 70 percent of the visitors to Africa's game parks came to see rhinos, lions, cheetahs and elephants. And it is recognition of the rhino's popularity with tourists — often ranked first or second in interest — that has spurred several nations recently to initiate, upgrade or expand rhino-protection efforts.

Hillman, who heads WWF's local-action group on rhinos in Nairobi met with Kenyan President Daniel Moi in May. After-



Rhinos, like this Indian photographed from elephant back, are swift but vulnerable.

Lee Talbot

ward, Moi proclaimed an end to all hunting and trade in rhino. Talbot says WWF's goal is to establish local-action groups in every region where rhinos remain to help educate governments and other organizations on the immediacy and magnitude of the growing crisis.

WWF, already working with the governments of Zambia, Sudan, Zaire, Tanzania and Cameroon, has found "good cooperation" thus far, according to John Kundaeli, a Tanzanian who heads WWF's government-liaison efforts in Africa. Among recent developments, southern Sudan has created a special ministry for wildlife with a budget to equip anti-poaching units. Kenya, afraid that it can't meet the poaching problem alone, has just approached the World Bank for funds to build an anti-poaching unit. And Mozambique is planning a refuge.

Even in one of the few regions where poaching has ceased to be a major threat — Nepal — government efforts to protect the rhino reflect the nation's economic interest, according to John P. Milton, a U.S. ecologist who has been studying Indian rhinos in Nepal under a WWF grant. The government realizes that rhinos are one of the nation's prime tourist attractions, both for residents and foreign visitors, he told SCIENCE NEWS. But protection afforded the 300 or more living in a national preserve there has them thriving to the point that they now outstrip the capacity of the region to feed them. Destruction of food crops in two-thirds of one county, Padampur, by rhinos, deer and pigs — "but mostly rhinos" — has been sufficient to bring some cases of [human] malnutrition," Milton said. He described communities in which at least one family member must stay up all night, every night of the year, year in and year out, to patrol fields against hungry rhinos. Each year the inevitable clash leaves several rhinos dead from spearings, several persons dead from rhino gorings.

Among the first to realize how bad the rhino crisis had become, Hillman gave up research to lobby governments.



WWF

One solution is to kill some of the rhinos. But Milton is pleased that the farmers aren't pushing for that. They seem to understand why the rhinos are coming out of the reserve; and most of the 7,000 residents would prefer to relocate rather than continue the inevitable confrontation. In a report commissioned by the Nepalese king, Milton will suggest just that. He will also suggest annexing the vacated land to extend the preserve's domain and to move some of the rhinos to one or more other regions. The latter should ensure diversity in their gene pool and protect the nation's 300 rhinos against a local epidemic or catastrophe that could wipe them out.

Saving the rhino is an immediate and uphill battle, Talbot admits. Will they succeed? "Yes," says Talbot with contagious confidence. "We can do it and we will. I don't know, it may be too late for the Sumatran rhinos, but we will save the others." □