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group of baka pygmy hunters stands motionless among a tangle of trees and vines. But instead of carrying bows or long blowguns as their ancestors did, these hunters are armed with rifles. Already several diana monkeys (*CERCOPITHECUS DIANA*) dangle from one of the men's belts. By the end of the hunt, this group could bring down animals as large as a forest elephant (*LOXODONTA AFRICANA CYCLOTIS*), which could feed a pygmy village for months. But these hunters won't be keeping most of their catch.

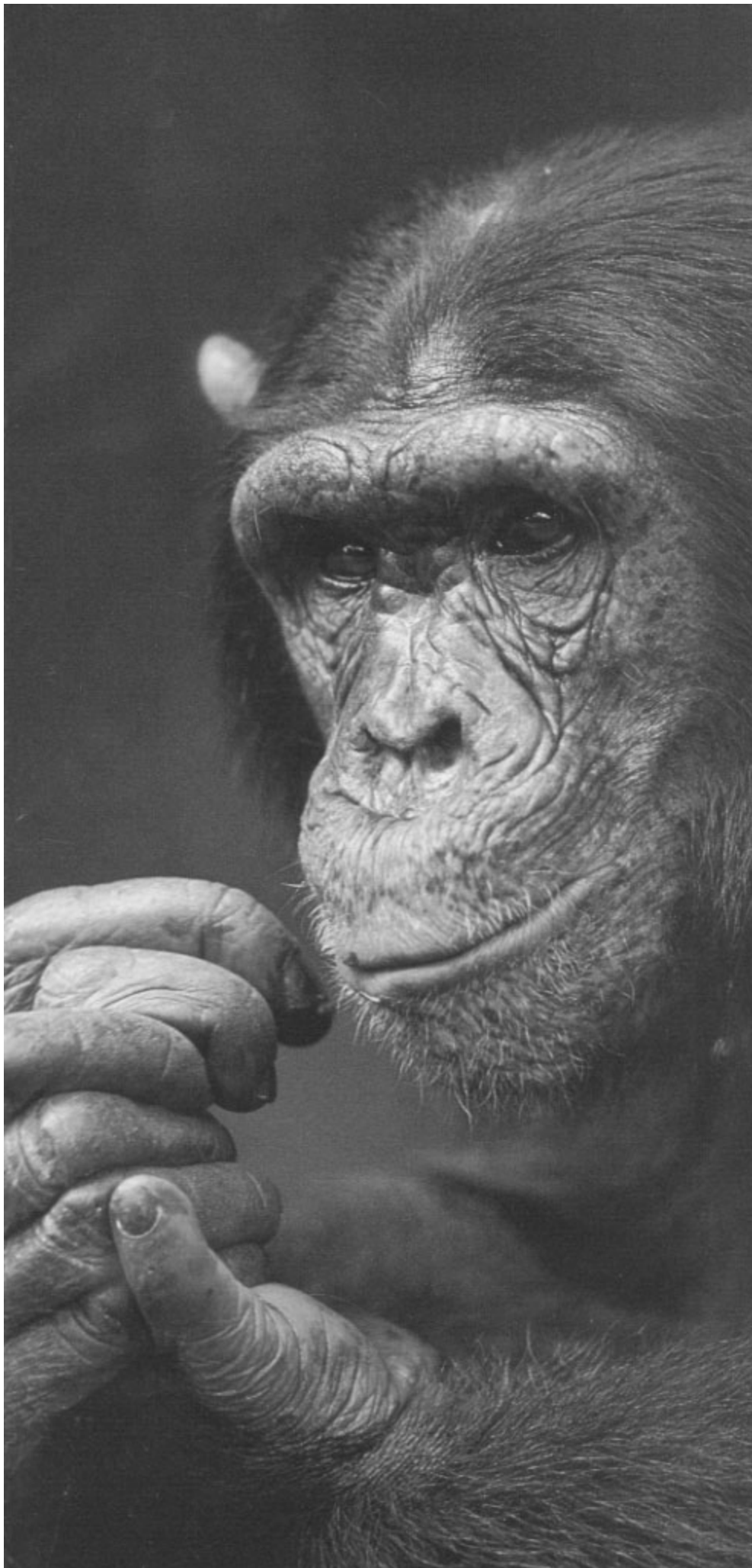
Drop into any restaurant in most of central Africa's major cities, and the menu will include some form of "beef." But chances are very great it isn't beef at all. More likely it's a forest antelope known as a duiker (*CEPHALOPHUS* sp.) or perhaps a red forest buffalo (*SYNCERUS CAFFER NANUS*). Head up the Congo River to more remote towns, and the menu often tells it like it is: okapi (*OKAPIA JOHNSTONI*), tree pangolin (*MANIS TRICUSPIS*), crocodile (*CROCODYLUS* sp.)—even chimp (*PAN TROGLODYTES*).



FOREST ELEPHANTS (*LOXODONTA AFRICANA CYCLOTIS*).

PHOTO: CHRISTOPHER NICHOLSON

THOMAS LANZING



GANZUP SHAWIBIC/NATURAL HISTORY UNIT

BUSHMEAT HUNTERS OFTEN TARGET PRIMATES SUCH AS CHIMPANZEES (LEFT) AND MANDRILLS (ABOVE).

In Africa, people have been hunting and eating wild animals—collectively known as “bushmeat”—since the very dawn of humanity. But the scope of the commercial bushmeat trade has expanded so dramatically in the past 30 years that today conservationists are describing it as one of the greatest threats to the natural world. Africa’s wilderness is rapidly being devoured—by foreign companies hungry for its forests and minerals, and by its own desperate people, so ravaged by war and poverty they will do anything to survive. As a result, some of Africa’s most majestic animal species could vanish, leaving once busy forests silent.

The bushmeat crisis raises conservation issues long unresolved in Africa, casting a hard light on cultural and political differences between the Western and developing worlds and adding fuel to the ongoing struggle between corporate ambitions and conservation goals. It is an environmental conundrum with no apparent solution, challenging us to consider whether conservation, as it is currently practiced in Africa and around the globe, is actually succeeding at all.

Primates, Guns, and Money

The constant *chug-chug-chug* of powerful diesel engines echoes through the rainforest. As mist rises off the surging brown water of the Congo River, a motley flotilla of giant riverboats appears. These floating marketplaces, often composed of several huge barges chained together, can take weeks to travel the 800 miles between Kinshasa, the capital of the Democratic Republic of Congo

(DRC), and Kisangani far to the northeast. As the boats come in sight of a settlement, there is a mad scramble of dugout canoes that race out to trade, swarming like fry around a giant fish.

Swiss nature photographer Karl Ammann and his wife Kathy were traveling on one such riverboat in 1988 and were struck by the amount of wildlife being brought onboard from the canoes. The riverboat's marketplace had gone into high gear, and a huge array of African animals—dead and alive—was being traded for luxuries like tin sheeting, galvanized pots, and bottled beer. The meat, fresh and smoked, was purchased, then tagged and packed into massive onboard freezers. By the time the boat reached Kisangani, there were several thousand primate carcasses onboard. What was particularly disturbing was the kind of meat the Ammanns saw: lowland gorilla (*Gorilla gorilla gorilla*), chimp, bonobo (*Pan paniscus*), and mandrill (*Papio sphinx*)—all endangered and supposedly protected species. For Ammann, it was a pivotal moment. Ever since then, he has devoted his life to the issue and has become a provocative leading voice in the outcry against the bushmeat trade.

While people have always eaten wild animals in Africa, the forces of social and economic change are now rewriting the rules of the hunt. Flying over the vast landscape of Cameroon, Gabon, or the Congo, you will pass over nearly 1.5 million square miles of lush green rainforest, roughly the size of France. In the 1960s, this junglescape would have stretched to the horizon, an enormous sea of trees. But today one quickly encounters a huge checkerboard of logging concession cuts carved into the forest and connected by a network of brown, muddy roads. Scores of

timber companies from Europe, America, and the Far East have come to West and central Africa in search of rare tropical woods that can fetch up to \$10,000 per trunk on the international market. Welcomed by cash-poor countries wracked with unemployment and civil strife, logging has become a multi-billion-dollar industry, providing the third most important source of national income—after oil and

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mining—for West and central African nations.

The Bushmeat Crisis Task Force, a consortium of 28 different conservation organizations focusing on the issue, estimates that nearly 38,000 square miles of rainforest are opened throughout central Africa each year. Stands of rare and valuable sipo (*Entandrophragma utile*) or okume (*Aucomea klaineana*) trees are few and far between, and to get to them loggers have to build roads through virgin, old-growth forest. Despite industry claims, few, if any, timber companies provide food for the migrant workers they bring in. Instead, loggers are quietly given 12-gauge shotguns or are allowed to hire hunters who know the forests, like local Bantu or Pygmies, to bring in fresh bushmeat to feed the hundreds of em-



A WAMBA VILLAGER CUTS UP A FOREST ANTELOPE.

ployees and their families who live on the concessions. This tacit arrangement keeps both employer and employees happy: The workers get the same game meat they often eat in their villages, and the company doesn't have to pay for it.

Hunters usually hitch a ride each morning on company logging trucks as they head out to the cutting sites, promising to bring the driver a monkey or a duiker as

payment. Remote areas of forest that would take weeks to walk into now can be reached by truck in a matter of hours. Hunters shoot anything they can find, though large ungulates and primates are considered the tasti-

est. After a day of hunting, the men butcher and then smoke their kill to preserve it in the 100-degree heat. Their forest camps are often shared with bushmeat traders, as well as foragers filling baskets with fruit, honey, or medicinal plants. Traders buy the meat right there, often paying with 9-ball Chevroline rifle cartridges that can bring down gorillas or elephants with a single blast.

The creation of roads and the introduction of modern firearms to these remote regions of Africa has had a powerful effect on hunting in the rainforest, transforming in a single generation what had been a venerable tradition of subsistence hunting into a kind of get-rich-quick scheme that anyone with a gun can attempt.

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"Logging concessions are one of the major motors for the bushmeat trade," says Richard Carroll, a bushmeat expert for the wildlife monitoring organization TRAF-FIC. "Once the forests are opened up, anyone can follow the principal roads into the forest and set up a couple of hundred snares and have a good little business going."

Carroll reports that the loggers sweep into an area, plucking the choicest hardwoods from the jungle, and then move on to another concession—leaving behind a network of abandoned camps, survey trails, and logging roads. But before the forest can reclaim these areas, a flood of African settlers moves into the newly opened land. They establish permanent farms and villages, use slash-and-burn agriculture, and shoot any wildlife they see. According to Ammann, one European logging company operating in the northern DRC reported 200 people in the concession region when they arrived. Now there are 7,000.

War is another reason large numbers of people head into the forest. According to the World Conservation Union (IUCN), two internationally recognized World Heritage parks are currently battlefields in an ongoing civil war in the DRC (formerly Zaire) that has killed an estimated three million people. Thousands of refugees fleeing soldiers from either side of the conflict are now hiding in the Kaheuzi-Biega and Okapi national parks not far from the fighting. Desperate to survive, the refugees rely heavily on bushmeat, often using semi-automatic weapons obtained

from the various armed forces. The effects on the parks' wildlife have been devastating. According to the Diane Fossey Gorilla Fund, of an estimated 8,000 lowland gorillas in the region before the war, only about 1,000 still survive. Trade, however, is thriving. Refugees agree to hunt bushmeat for either the government's forces or the rebels, with the understanding that any elephant tusks go to the military for the ivory trade. The IUCN also reports that both sides in the war are making so much money trading mined gold, diamonds, and coltan (a mineral vital to the production of microchips) to international companies that the conflict may continue indefinitely.

To the west, across the Congo River in the smaller Republic of Congo (RDC), war isn't raging, but the flow of bushmeat is just as great. Truckloads of dead wild animals are brought out of the forests and sold to middlemen, who send the meat on by truck, rail, boat, or airplane for resale to the restaurants and markets of major cities. Local taboos against the eating of some animals have done little to curb the trade because hunters don't have to eat what they catch. Bushmeat hunters can make between \$300 and \$1,000 a year, a princely amount for villagers in Africa. According to John Robinson, Director of

governments afloat.

"We estimate that in excess of five million metric tons of bushmeat are coming out of Africa's forests every year," says Robinson. "That's a multi-billion-dollar industry, and there aren't very many of those in Africa!"

In the sultry heat of late afternoon, open-air markets shimmer with activity in the brawny port city of Libreville on the coast of Gabon. Rich and poor, sophisticated and rustic, people mingle amid the colors, sounds, and smells of commerce. Bushmeat is displayed in quantity: elephant trunks, arms and legs of gorilla, smoked porcupine (*Atherurus africanus*), and a bewildering array of insects and lizards splayed and ready for the stew pot. Karl Ammann reports that bushmeat markets like this one can be found in major cities throughout central Africa. At upscale supermarkets, elephant steaks can go for the equivalent of \$6 a pound, three times the local price of beef. Here bushmeat isn't a staple; it's a gourmet food.

In the cities, it's the well-heeled urbanites who pay top dollar for bushmeat, which fetches ten times the amount the hunter in the forest earned. Urban Africans on average eat the same amount of meat per year that Western peoples do, but

International Conservation at the Wildlife Conservation Society, as foreign companies take most of central Africa's natural resources out of the country, bushmeat not only feeds the region's 30 million people but also helps keep local economies and

they prefer bushmeat largely because it is traditional food. For city dwellers, bushmeat is a taste of home, bringing back memories of village life that for many no longer exists. Some wealthy Africans employ bushmeat hunters to bring home dinner the way Westerners hire gardeners. For people in rural areas, bushmeat hunting is considered a supplement to food and income. Conservation International reports that more than half of all men above age 15 in the Ivory Coast identify themselves as hunters, and nearly all are farmers. According to Mohammed Bakarr, Director of the Center for Applied Biodiversity at Conservation International, bushmeat is a cuisine that crosses all social barriers in Africa.

"In our culture, we eat everything," Bakarr says. "Almost 90 percent of anything that moves in West Africa is eaten. That's not only mammals but everything, including invertebrates. For anybody, from the President to the person in the village, bushmeat is seen as a delicacy."

Traditional healers use large numbers of animal skulls, bones, skin, and feet for folk medicine. Gorilla meat is believed to make one strong and powerful. Bushmeat has powerful social significance as well. In rural Cameroon, to present a guest with the hand of a gorilla is a sign of esteem. Furthermore, the pervasive credo, *The forest will always provide*, dovetails with the still predominant Christian theology of central Africa: *God has made the animals for man to use, and He alone can make them come or go away.*



DANILUP SHARIBIC/NATURAL HISTORY JUNT



FRANS LANTING



FRANS LANTING

FROM TOP: THE HAUNTING STARES OF MANDRILL, BONOBO, AND GORILLA.

The Silence of the Woods

There are no hard facts on either the bushmeat trade or the animals it affects. Those who participate in the trade don't keep records, and few conservationists have had either the ability or

inclination to venture into the dangerous regions of central Africa where the bushmeat trade is most pervasive. Information tends to filter in from the field, based on isolated surveys, anecdotes, and the private investigations of independent crusaders like Karl Ammann. According to the Bushmeat Crisis Task Force, hundreds of animal species in the region face the threat of extinction in as little as ten years. Primates and other animals that reproduce slowly and have only a few young are among those in the greatest danger.

Last year, scientists reported that populations of Miss Waldron's red colobus monkey (*Procolobus badius waldroni*) had dipped so precipitously that the once plentiful primate was believed extinct [see "BioAlmanac," November/December 2000 *ZooGoer*]. Wild populations of chimpanzees once numbered in the millions throughout the Congo region, but today it is estimated that no more than 150,000 remain. Apart from people killing them, many are captured for sale as pets. The lucky ones are delivered to Africa's few primate orphanages, though most of these are now full.

Populations of lowland gorillas and bonobos have also been severely affected, not only from poaching but also from habitat fragmentation caused by logging. Primatologist and bushmeat activist Jane Goodall has said that human encroachment and exploitation of Africa's wilderness is like a devouring wave that sweeps through and creates what conservationists call an "Empty Forest."



WILD BONOBO POPULATIONS TODAY ARE RESTRICTED TO THE WAR-TORN DEMOCRATIC REPUBLIC OF CONGO.

"It's catastrophic because it's not sustainable," Goodall said in testimony before the U.S. Congress last year. "Which means that not only will the forests lose all their animals, but that those that used to disperse seeds will no longer be there." In other words, if these animals disappear, the forest cannot regenerate.

John Robinson of the Wildlife Conservation Society says that the alarm calls over overhunting and empty forests are not environmental over-reactions, citing the example of what happened in the great jungles of Asia a few decades ago. In the 1970s, conservationists were not organized or experienced enough to realize what was happening when Malaysian, Chinese, and Japanese logging companies began large-scale opening of forests in Southeast Asia. Widespread bushmeat hunting followed, and in 30 years the wildernesses of Thailand, Malaysia, Vietnam, and Indonesia have fallen eerily quiet.

A United Nations report released this year stated that in Asia growing numbers of cities, land degradation, and widespread neglect of environmental protection measures are leading to an ecological disaster that could cost some \$10 trillion to clean up over the next 30 years. Robinson says the encroachment wave has already swept through Asia and is now cresting on the forests of Africa. If nothing is done, it will consume Africa's wildlife, as well as its precious timber and mineral resources.

Endgames

Great apes are protected by the Convention on International Trade in Endangered Species (CITES) and by many of the African governments

that are signatory to that treaty. But in the bushmeat markets of West and central Africa, you would never know it. War, social upheaval, and a general collapse of many African economies and infrastructures have created a world of might-makes-right and institutional

Omar Bongo listing animals desired for a state dinner. "That meant if they wanted river hawk or elephant or buffalo meat, he would have to go shoot it and deliver it to the palace," explains Ammann. "If he didn't do it, the army generals would use it as an excuse to come in with helicopters and shoot anything in sight."

As conservationists admit, many Africans are very serious about conserving the environment, and almost every African government has a Forests and Wildlife Department. But converting Western ideas about conservation into working programs in African villages has been neither easy nor always fruitful. Often something is lost in the translation—with misunderstandings on both sides. Karl Ammann tells the

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corruption. A familiar refrain in the DRC is that it's a rich country of poor people. Everything in this French-speaking country works *en principe* (which often means not at all), and nothing works without the omnipresent bribery that locals call *matabeesh*. Logging companies from Malaysia and China bring large gifts of cash or goods to African leaders in exchange for prime timber concessions, some of which are located inside national parks.

According to Ammann, poaching for bushmeat in these protected areas is rampant. One game warden he spoke with in Gabon's Wonga Wongue reserve reported that he would receive faxes from the office of President



story of a gorilla habituation program he encountered in southeastern Cameroon that was trying to sensitize villagers to primate conservation issues with T-shirts bearing the slogan: *Worth more alive than dead*. "I met the Chief of Police wearing one of those T-shirts, and he tried to sell us some chimps," Ammann recalls. "So his interpretation of 'worth more alive than dead' seemed to be selling a live chimp."

Similarly, one solution to the bushmeat crisis proposed by Western conservationists has been to encourage Africans to eat domesticated beef, pork, or chicken rather than forest animals. According to George B. N. Ayittey, a Ghanaian professor of Economics at American



University and author of the book *Africa in Chaos*, the effort has largely failed because such animals are expensive to raise in a tropical rainforest. Most African villagers tend to use domestic animals as Westerners use expensive wines: something for a special occasion. Bushmeat, on the other hand, is free for the taking. Ayittey says when conservationists encourage Africans to rely on cows, it's like being told, "Let them eat cake."

"Westerners have their own notions of appropriate sources of protein," Ayittey says, "and they go to Africa and think, 'Well, if Americans eat hamburgers, then the villagers in Africa should also eat beef or go to McDonald's.'"

Every year the largest Western conservation organizations navigate well-established channels of influence and funding, creating proposals, holding planning meetings, and negotiating with armies of African ministers, all to create a political and economic framework upon which to hang workable programs. Since bushmeat became a recognized conservation issue in the late 1990s, many studies and plans have been devised in the U.S., in Europe, and in Africa focusing on the problem. Agreements have been made with timber companies to ban bushmeat and rifles from concessions. African governments in Gabon, the Central African Republic, and Cameroon have

agreed to enlarge protected areas and prevent illegal logging and poaching there. (Ironically, the most successful example of logging prevention in the region has been the war in the DRC.) Commercial bushmeat hunting, especially with the use of wire snares and powerful rifles, is strictly regulated in most West and central African nations, with jail time for poaching. But while these agreements seem like progress *en principe*, some experts are growing concerned that much of conservation's sound and fury does not translate into results in the forest.

"It's very hard to get anything to happen on the ground," says John Terborgh, professor of environmental science and biology at Duke University. "African governments can make all sorts of agreements, but since they have no capacity to implement them, these agreements exist largely on paper."

Terborgh says that in many African countries laws in general have more to do with maintaining power than actual justice as it is understood in the West. Politics and conservation issues become one and the same, and as such are governed more by *matabeesh* than the needs of wildlife. Western conservation organizations working in the field feel compelled to present upbeat reports to se-

cure more funding and are reluctant to criticize African governments for fear they will be banished from these countries. Ultimately, Ammann says, stopping something like the bushmeat trade comes down to the personal agendas of African politicians.

"If you can get the Minister of Wildlife or the President to listen to you, then maybe you can create some political will," he says sadly. "But right now, as long as the minister wants to see bushmeat on his banquet table, a CITES official isn't going to say 'Minister this has to stop!'"

Can African wildlife be saved before it's too late? Everyone in the conservation business has a plan. Some offer ecotourism, others tout better enforcement of laws and protected areas. Community-based programs emphasize action by African villagers in their local area. John Robinson says the real issue is not whether a solution can be found, but whether it can be found *in time*. The time is now. ♪

—John Tidwell, a freelance writer and independent television producer, last wrote about Caspian sturgeon in the May/June 2001 *ZooGoer*.