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A Dying Breed

By ANDREW RICE

GERSHOM MUGIRA COMES from a long line of cattle-keepers. His people, the Bahima, are thought to have migrated into the hilly grasslands of western [Uganda](#) more than a thousand years ago, alongside a hardy breed of longhorns known as the Ankole. For centuries, man and beast subsisted there in a tight symbiotic embrace. Mugira's nomadic ancestors wandered in search of fresh pasture for their cattle, which in turn provided them with milk. It is only within the last few generations that most Bahima have accepted the concept of private property. Mugira's family lives on a 500-acre ranch, and one sunny day in November, the wiry 26-year-old showed me around, explaining, with some sadness but more pragmatism, why the Ankole breed that sustained his forebears for so many generations is now being driven to extinction.

As we walked down the sloped valley path that led to a watering hole, we found a few cows lolling beneath a flat-topped acacia. They looked like the kind of cattle you might encounter in Wisconsin: plump and hornless creatures with dappled black-and-white coats. Mugira, a high-school graduate, was wearing a pair of fashionably baggy jeans and spiffy white sneakers. To a modern African like himself, he said, the most desirable cattle were the American type: the Holsteins.

In recent decades, global trade, sophisticated marketing, artificial insemination and the demands of agricultural economics have transformed the Holstein into the world's predominant dairy breed. Indigenous animals like East Africa's sinewy Ankole, the product of centuries of selection for traits adapted to harsh conditions, are struggling to compete with foreign imports bred for maximal production. This worries some scientists. The world's food supply is increasingly dependent on a small and narrowing list of highly engineered breeds: the Holstein, the Large White pig and the Rhode Island Red and Leghorn chickens. There's a risk that future diseases could ravage these homogeneous animal populations. Poor countries, which possess much of the world's vanishing biodiversity, may also be discarding breeds that possess undiscovered genetic advantages. But farmers like Mugira say they can't afford to wait for science. And so, on the African savanna, a competition for survival is underway.

Mugira was just about to tell me what made the Holsteins so valuable when suddenly, Dr. Grace Asimwe, a veterinarian and my guide through western Uganda's ranchlands, shouted, "The Ankoles are coming!"

In the distance, I glimpsed a bobbing line of white horns swooping down the hillside. Without a word, Mugira dashed down the dirt path, hopped over a fallen tree branch and disappeared around the side of a huge weed-covered anthill. "He has to keep them separated," Asimwe told me, lest the Ankoles gore the Holsteins. We found Mugira by the watering hole, whistling and waving a wooden switch called an *enkoni*, frantically trying to keep his Ankoles away. His herdsman were supposed to bring the two contingents to the water at different times, but someone made a mistake.

“You know, in Uganda, we have to look for survival of the fittest,” Mugira said once he finished sorting out the confusion. “These ones, they are the fittest,” he went on to say, gesturing toward his Holsteins. In physical terms, there was really no contest between the tough Ankoles and the fussy foreign cattle, which were always hungry and often sick. But the foreigners possessed arguably the single most important adaptive trait for livestock: they made money. Holsteins are lactating behemoths. In an African setting, a good one can produce 20 or 30 times as much milk as an Ankole.

Mugira explained that, unlike most of his peers, he was holding onto some longhorns, mostly for sentimental reasons. His father, who died in 2003, loved his Ankoles. One of them wandered over and nuzzled Mugira, who placed his hand gently on its forehead. In the days before Christianity arrived in this part of Africa, the Bahima made offerings of milk to herdsman gods. Their language contains a vast catalog of cattle names, which refer to characteristics like color and hide pattern. This cow was called Kiroko, indicating it had some white patches on its face. The ideal Ankole, Mugira told me, has a lustrous brown coat and gleaming horns that curve out and then inward, forming a shape like a lyre. “They are naturally good,” Mugira said. “They are beautiful. In our culture we preferred these. But then we developed another culture, from Western culture.”

The Food and Agriculture Organization, an agency of the [United Nations](#), recently reported that at least 20 percent of the world’s estimated 7,600 livestock breeds are in danger of extinction. Experts are warning of a potential “meltdown” in global genetic diversity. Yet the plight of the Ankole illustrates the difficulty of balancing the conflicting goals of animal conservation and human prosperity. An estimated 70 percent of the world’s rural poor, some 630 million people, derive a substantial percentage of their income from livestock. Increase the productivity of these animals, development specialists say, and you improve dire living standards. The [World Bank](#) recently published a report saying it was time to place farming “afresh at the center of the development agenda.” Highly productive livestock breeds, the World Bank asserts, are playing an important role in alleviating poverty.

“You do have local animals with various kinds of disease resistance and whatever other kinds of things you don’t want to do away with,” said Chris Delgado, an agriculture policy adviser at the World Bank. “But there’s a problem: They are kept by very poor people, and they don’t want to stay poor.”

Every cow in the world is the product of some human agency. The extinct feral ancestor of all cattle, the auroch, was a fearsome horned creature that could grow to be six feet tall. There are two theories about the taming of wild aurochs. The traditional view holds that it happened around 6000 B.C. in the Fertile Crescent. But recent archaeological and genetic evidence suggests that domestication may have first occurred in Africa 2,000 years earlier, in the then-lush plains of the eastern Sahara. Then, beginning around 2,000 years ago, Arab merchants introduced humped cattle of Indian origin to East Africa, which were crossed with the indigenous longhorns to produce breeds like the Ankole.

For millennia, changing a breed’s genetics through husbandry required a long trial-and-error process. But today it can happen in an evolutionary eye blink. Multinational breeding companies, many of them based in the United States, collect semen from prime bulls, freeze it and export it to the developing world. Official estimates say there are about three million Ankole cattle in Uganda and smaller populations in bordering nations. An unknown — though by all accounts large — percentage of them are in the process of being turned into something else. After one cross with a Holstein, the brown Ankole cow will produce a black calf with

darkened horns. After two, the horns will shrink and a dappled coat will appear. The third generation will basically look like American dairy cattle. With each cross, the offspring will produce more milk. The World Bank estimates that 1.8 million small-scale farmers in East Africa are benefiting from such genetic changes to their cattle and that some 100 million cows and pigs are created through artificial insemination in poor countries each year. Those numbers substantially understate the extent of genetic interchange, because half the offspring produced by artificial insemination are male and spread their genes the old-fashioned way.

To see the evolution in Ugandan dairy cattle, I visited a farmer named Jackson Sezibwa, who lives down a reddish dirt path outside the central Ugandan town of Mukono. A weather-beaten man of 46, Sezibwa greeted me in a torn, muddy shirt. He showed me to the metal-roofed stall where he keeps his Holstein, Kevina.

Before he received the cow, Sezibwa said, he was hungry and destitute. All he owned were some banana trees and a one-room house roofed with thatch. Then he and his wife were given Kevina by a charity called Heifer International. Founded in 1944 by Dan West, an Indiana farmer, Heifer's mission is to take quality livestock to impoverished places. In Uganda, the cattle breed Heifer prefers is the Holstein. "The American cow," said Dr. Margaret Makuru, Heifer's deputy country director, "once you feed it, it is a factory."

Like any factory owner, Jackson Sezibwa had to think about inputs and outputs. Making milk requires energy, which means eating grass. Holsteins require much more grass than Ankole cattle, but unlike Ankoles, which need to roam, Holsteins can be kept in pens. Sezibwa owned just a small plot of land, so the Holstein was perfect for him. All day long, Sezibwa refilled Kevina's trough with feed, a mixture of elephant grass and protein-rich leaves and legumes that he grew in his field. Each time he milked the cow, he fed her a store-bought meal full of nutrients. Otherwise, his largest expense was medicine. Holsteins originated in Northern Europe and were taken to America in the 19th century. They don't have any resistance to tropical diseases like trypanosomiasis — colloquially known as sleeping sickness — and East Coast Fever, which is spread by ticks.

With intense maintenance, Sezibwa's cow functioned marvelously. Kevina churned out around six and a half gallons of milk a day. (A typical Ankole would have given him between a quarter and a half gallon.) His family drank some of the milk, and he sold the rest, netting around \$100 a month after expenses. In a country where an estimated 85 percent of the population lives on less than \$1 a day, that's substantial income. The money finances school for Sezibwa's six children. There were ancillary benefits too. Kevina was impregnated four times via artificial insemination. Sezibwa gave away her first calf to a neighbor, in keeping with Heifer's philosophy of "passing the gift." The next two — both males — he sold to farmers eager to acquire Holstein genetics, making enough profit to build himself a nice brick house. He kept the fourth calf, another female, for the future. Heifer also paid to install an underground system that harnessed methane from the cows' manure to power gas burners and a light inside his house.

Jackson Sezibwa is just one man, but Uganda's economy is made up of millions like him. Agriculture accounts for 30 percent of the country's gross domestic product, and 10 percent of that comes from the livestock sector. The World Bank's October report claimed that "G.D.P. growth originating in agriculture is at least twice as effective in reducing poverty" as other types of growth. The report pointed out that the industrialization of Europe and North America that began in the late 18th century was preceded by a period of farming innovation, and that the Green Revolution that took place between the 1940s and 1960s catalyzed Asia's fantastic economic growth.

During the Green Revolution, scientists invented high-yielding strains of corn, wheat and rice and planted them around the third world, and they also promoted the introduction of better livestock. But then, broadly speaking, foreign-aid donors moved away from such interventions, which were viewed as meddling with the free market, and shifted financing priorities to areas like education and AIDS. Today, even after recent increases, the World Bank devotes less than 10 percent of its development assistance to agriculture, down from 30 percent a quarter-century ago. Recently, the notion of helping poor farmers by making farming more lucrative has been dusted off by a new generation of economists. And [Bill Gates](#) and the Rockefeller Foundation have promised to finance a second Green Revolution. But governmental aid agencies have been slower to rediscover the importance of agriculture. Farming initiatives now account for just 4 percent of the assistance distributed by the [Organization for Economic Cooperation and Development](#), a group of the world's most developed nations.

The U.S. [Agency for International Development](#) budgeted \$392 million for agricultural programs last year, including a significant proportion to promote milk production. Crossbreeding is an important component of its strategy. In Uganda, where the agency recently completed a five-year, \$8 million dairy-modernization project, about half the money went toward artificial insemination. One partner in the program was Land O'Lakes International Development, the aid arm of the Minnesota butter company. "We should be able to do farming as a business, not sentimentally," said Dr. Paul Kimbugwe, the Land O'Lakes country manager. "Making money means you have to crossbreed. And crossbreeding means that you are doing away with the genetics of that cow," meaning the Ankole, "which I also encourage."

Not everyone in Uganda, however, agrees that the foreign breeds are an upgrade. President Yoweri Museveni once imposed a ban on imported semen. Museveni belongs to the Bahima ethnic group. When he was a baby, in a sort of Bahima baptism ritual, his parents placed him on the back of an Ankole cow with a mock bow and arrow, as if to commit him symbolically to the defense of the family's herd. Museveni, now in his 60s, still owns the descendants of that very cow, and he retains a strong bond to the Ankole breed. Two years ago, I accompanied a group of Ugandan journalists on a daylong trip to one of the president's private ranches, where he proudly showed us his 4,000-strong herd of Ankole cattle. At one point, a reporter asked if the ranch had any Holsteins. "No, those are pollution," Museveni replied. "These," he said, referring to his Ankoles, "the genetic material is superior."

If the Ankole cattle are able to mount a comeback, it will be because circumstances have endowed them with a unique set of defenses, both evolutionary and political. Members of President Museveni's ethnic group populate the upper ranks of Uganda's government. Some prominent Bahima have started an organization devoted to preserving Ankoles, under the patronage of a one-eyed army general who spends his free time painting rapturous portraits of cows. One afternoon, at a pricey restaurant in Kampala, I had lunch with the organization's chairman, Samuel Mugasi. Dressed in a dapper gray suit and a French-cuffed pale blue shirt, he told me he was a civil servant and part-time rancher.

"They have tasted the money," Mugasi said of the farmers who switched to Holsteins. "They are excited about having these big earnings, and they are forgetting the cultural aspect."

Kimbugwe, the Land O'Lakes representative, has a ready reply to such arguments. "Culture — fine, it's good to have," he said. "But first, the stomachs." He views the Ankole as an atavistic indulgence for the country's elite.

Once, cattle were like currency, and the wealthy displayed their status by maintaining huge free-ranging herds. Competition for land is forcing cows onto smaller pastures. Uganda has one of the highest birth rates in the world, and despite its poverty and diseases like AIDS, the population has more than doubled since 1980. There's a long history of tension between the Bahima and an agriculturalist ethnic group, the Bairu, which coexist in western Uganda, at times less than happily.

This is a common dynamic across Africa. In Rwanda, a similar ethnic conflict between cattle-keeping Tutsis and farming Hutus culminated in genocide in 1994. A number of experts say the "ethnic" war in Darfur is really a fight over grass. Uganda has not experienced that level of conflict, but the local newspapers are filled with stories of violent skirmishes between farmers and encroaching pastoralists. This is one reason that some say Holsteins represent the future. Rwanda, now ruled by longhorn-loving Tutsis but trying to address the causes of the genocide, is enthusiastically encouraging the breed's introduction, with assistance from the U.S. Agency for International Development.

One of the biggest dairy farmers in western Uganda, Kezekia Rwabuhenda, told me he was the first person in his area to adopt Holsteins, back in the 1970s. At the time, he said, many traditionalists maligned him, saying he was conspiring to "slaughter" the cattle they loved. "Afterwards, when they realized what the cross was producing, they started visiting me, asking for a bull," he said through a translator. The elderly rancher still kept a hundred Ankoles, but they were for his wife, who was attached to them. He was sure that when he died, his children would dispatch them all to the butcher shop.

No one knows how many Ankole cattle exist. "We've been saying the Ankoles are 50 percent of the national herd, but I don't think that's true anymore," said Dr. Denis Mpairwe, an animal scientist at Uganda's Makerere University. "The crossbreeding the last five years has been so intense." The International Livestock Research Institute predicts that if present trends continue, the Ankoles could go extinct within 50 years. But Mpairwe says he believes it could happen much sooner.

I went with Mpairwe to visit Uganda's cattle country earlier this fall, along with Dr. Okeyo Mwai, a Kenyan biotechnology specialist who works for the livestock institute. I lived in Uganda between 2002 and 2004, and I couldn't believe the change. Hillsides where graceful brown Ankoles once grazed by the hundreds were now dotted black and white. "Look at the calves," Mwai said, as our pickup truck passed a herd. "Almost 100 percent are crosses." He pointed up toward the hilltops, normally gently rounded and green, but now sandy in large patches from overgrazing. The two scientists are studying how high-producing cattle interact with the African ecosystem. If cows are like factories, you could say an Ankole is powered by a water wheel, while the Holstein requires a nuclear reactor.

The principle of the "tragedy of the commons," perhaps the most famous metaphor in ecology, is a cattle parable. It was first described by a 19th-century British economist and popularized by the biologist Garrett Hardin in a 1968 *Science* magazine essay about human overpopulation. Hardin was trying to refute the view that an unregulated free market invariably produces beneficial outcomes. "Picture a pasture open to all," Hardin wrote. The benefit of adding a single calf went to each individual farmer, while the cost of adding that calf (the grass it would consume) would be distributed to all pasture users. "Each man is locked into a system that compels him to increase his herd without limit — in a world that is limited," he wrote. The commons, he predicted, would inevitably be picked clean.

With the introduction of the Holsteins, something similar seems to be happening in Uganda. Farmers aren't literally increasing the sizes of their herds, but they are creating herds that consume unsustainable amounts of dwindling resources. And something else is being obliterated: genes. Each time a farmer crossbreeds his Ankoles, a little of the country's stockpile of adaptive traits disappears. It isn't easy to measure genetic "dilution." What is evident, however, is that the Ankoles possess much worth saving. For instance, their horns, often seen as ornaments, actually disperse excess body heat.

Holsteins don't like heat. While a poorly adapted animal can survive for years in a harsh ecosystem, even a slight worsening of their conditions can have devastating effects. One rancher I met, John Kamiisi, told me that he'd lost his herd of Holsteins in a 1999 drought. He only avoided ruin because he kept some Ankoles, which could live on less water. Kamiisi told me he loved his sturdy Ankole bull "like my own life" but said he was starting to crossbreed again for financial reasons. Another elderly rancher said his whole Holstein herd died during [Idi Amin's](#) dictatorship, when chaos and inflation made it difficult to buy the imported medicines the cattle needed. He started again with a few Ankoles his neighbors gave him out of pity.

"For countries on the equator, I think in almost all cases the Holstein is very poorly suited — maybe the least-suited breed," says Dr. Les Hansen, a professor at the [University of Minnesota](#) and a leading expert in cattle genetics. Often farmers are making decisions that are informed not by science, he said, but by sales pitches devised by multinational breeding concerns. "As I travel the world," Hansen adds, "my biggest challenge is countering all of the misleading marketing propaganda."

The world market in cattle breeding is controlled by a handful of companies, several of them based in the United States. The companies maintain facilities where they extract semen from bulls, keep genetic databases, publish rankings and cultivate a sort of bovine star system. Two legendary Holsteins, Chief, born in California in 1962, and Elevation, born in Virginia in 1965, fathered tens of thousands of offspring in their lifetimes — and beyond, since their sperm was cryogenically frozen for future use.

Hansen's research suggests that every Holstein is descended from Chief and Elevation, and that 30 percent of all the Holstein genes in the world are traceable to those two bulls. That has created a serious problem with inbreeding, which has adverse effects on fertility and mortality. But overseas markets like Africa are, so to speak, virgin territory. According to industry figures, American companies exported 10 million "doses" of cattle semen in 2006. In Uganda, a company called World-Wide Sires, the international marketing arm of two American breeding cooperatives, is working with aid agencies to increase dairy production.

"The proof is in the bucket," said George Nuwagira, a dairy farmer who is also the World-Wide Sires sales representative for western Uganda. I met him one morning in the market town of Kabwohe. A stout, garrulous fellow, he was wearing a yellow baseball cap with a smiling cartoon cow on it. He ushered me into his insemination center, a narrow tumbledown storefront that also sold sodas. At one end stood a wooden counter that was decorated with a flier advertising a bull named Earl, "the Dairyman's Dream," which pictured Earl's daughters posed in such a way as to accentuate their enormous milk-swollen udders. Behind the counter sat a metal tank filled with liquid nitrogen. Nuwagira unscrewed its cap, and a thick cloud of white vapor billowed out. He retrieved a cluster of brightly colored plastic straws filled with premium semen.

We were at the far end of the global semen supply chain. Nuwagira handed me an empty green straw. It was

marked with the name "Theseus" and a long serial number, which indicated that the semen it had contained was collected at a facility near Plain City, Ohio, on Dec. 30, 2004. Three weeks before, he used Theseus' semen to impregnate one of his own Holsteins.

Nuwagira took me to see the expectant mother. On the bumpy ride to his farmland in a breathtaking green valley, he told me that he was from the west's agriculturalist ethnic group, not the Bahima. He didn't care about the Ankole. "To me as a modern farmer, the horns don't mean anything," Nuwagira said. He didn't name his cows like the Bahima but instead referred to them by numbers. He told me he owned just 35. "You know, it was used as a status symbol in the past, to have so many head of cattle," he said. "Those who had hundreds wouldn't sit with those who had less than 30. But these days, things have changed. When you talk of animals they don't ask you the numbers. They ask you the production."

Nuwagira's biggest problem was getting his product to market. "You feed them, they will give you the volumes, but there are times when we find we are stuck having nowhere to sell it," he explained. Milk is perishable, and Uganda is a country where roads are bad and refrigeration is rare. The dairy trade in rural areas is largely controlled by bicycle vendors who sell raw milk from aluminum jugs. There used to be a more sophisticated network of government-affiliated dairy cooperatives, but most of these were dismantled in the 1990s, during a World Bank push for market liberalization. The private sector was supposed to fill the gap but never did. Anyway, some Ugandan tribes don't drink milk. They're lactose-intolerant.

Crossbreeding follows the logic of the arms race. All the ranchers I met complained that Holsteins required expensive upkeep, and many didn't want to abandon tradition. But they've had to change because their neighbors are changing. The volume of milk produced in Uganda doubled between 1993 and 2003, but in the absence of a surge in demand or improved delivery systems, the product has literally flooded the market. As the price per liter has fallen, dairy farmers have had to rearm with Holsteins just to maintain their usual profit margins. International organizations realize that increased productivity means little if it's not accompanied by market growth. That's why the U.S. Agency for International Development is spending millions across Africa to promote dairy cooperatives and pay for advertisements inspired by America's famous "Got Milk?" campaign. But changing distribution and diets isn't as easy as changing breeds. "A lot of consumers don't understand how important milk is," says Jim Yazman, a livestock specialist with the agency.

Economic forces can push a breed to extinction with frightening swiftness. In Vietnam, where pigs are the most important livestock species and the government has encouraged leaner foreign breeds, the percentage of indigenous sows has fallen to 28 percent from 72 percent since 1994, and 13 of the 15 local breeds are classified as either extinct or in danger. There were several million Red Maasai sheep in Kenya until the 1970s. Then, in just 15 years, indiscriminate crossbreeding with woollier imported sheep nearly drove them out of existence. But the wool sheep fared poorly in the Kenyan environment, in part because of intestinal parasites to which the Red Maasai were resistant. By the time that was discovered, though, purebred Red Maasai were almost impossible to find.

Many tropical breeds may possess unique adaptive traits. The problem is, we don't know what is being lost. Earlier this year, the U.N.'s Food and Agriculture Organization released its first-ever global assessment of biodiversity in livestock. While data on many breeds are scant, the report found that over the last six years, an average of one breed a month has gone extinct. "The threat is imminent," says Danielle Nierenberg, senior

researcher at the Worldwatch Institute, an environmental group. “Just getting milk and meat into people’s mouths is not the answer.”

As the world’s climate warms, and the environment becomes more inhospitable to the major breeds, humanity might need the genes that allow animals like the Ankoles to flourish in the African heat. The challenge is to safeguard the resource. There are two possible approaches: putting the animals in cold storage, or changing the economic equation. Proponents of the first option desire something like the Svalbard Global Seed Vault, a doomsday depository for plant species that an international consortium is building in the Arctic Circle. But storing sperm and embryos is far more expensive and technically difficult. Biodiversity advocates say that it would be preferable, anyway, for breeds like the Ankole to go on living in their pastures. The most obvious way to do that would be to create incentives to entice farmers to keep them. But even those who want to save endangered breeds recognize that subsidizing unproductive livestock in hungry countries is problematic. In November, at a conference sponsored by the International Livestock Research Institute in Nairobi, Kenya, Dr. Edward Rege, the organization’s biotechnology director, gave a speech listing several “inconvenient facts” about conventional wisdom in the field, adding that conservation approaches can effectively amount to “saying that farmers should remain poor.”

The best hope for the Ankoles may reside at a modest, terraced complex on a breezy hillside in Uganda overlooking Lake Victoria in the old colonial town of Entebbe. It was constructed by the British in 1960, at the height of the Green Revolution, as an artificial-insemination center and a staging ground for introducing new breeds — animals that mostly died off during the subsequent wars and dictatorships. Now called the National Animal Genetic Resources Center and Databank, the facility’s new mission is to save indigenous animals like the Ankoles by giving them better care and selectively breeding them to compete in production. The center keeps a dozen bulls of different breeds, including two immense Ankoles that once belonged to President Museveni. Twice a week, technicians collect semen, which is used to inseminate cows at government farms or else packaged and sold directly to farmers. If it’s successful, the program could offer a model to other developing nations. If, on the other hand, the Ankole cattle can’t be saved even with such government support, it’s difficult to imagine how any threatened breed will survive.

“They can produce milk and they put on meat,” said Dr. Dan Semambo, the center’s executive director. “People don’t know what they have.”

Ugandans rave about the fresh milk out west, and every rancher I visited there served me a cup. It has a delicious sweet thickness. No matter how well nourished they are, though, the Ankoles probably can’t produce as much milk as the Holsteins. Instead, the breed’s salvation could lie in the slaughterhouse. President Museveni says he believes that Ankoles make exceptional beef cattle and wants to export their meat. Some studies suggest that Ankole beef is unusually lean and low in cholesterol. Mpairwe and his colleagues at Makerere University are completing a study in which Ankoles and crossbreeds were kept on nutrient-rich diets. In early December, the cattle were slaughtered and an “expert panel” of faculty and students conducted a taste test, with encouraging results.

Shortly before I left Uganda, I convened an expert panel of my own. We met one evening at Le Petit Bistro, a European-owned restaurant that serves Kampala’s best steak. While we waited for our orders, I went back to the kitchen to meet the cook, Everest Neretse, who was wearing a white chef’s jacket and flip-flops. He told me

he came from the west. “Ankole cattle, they are the best,” he said. “I can tell in the tenderness.” I had my filet with a little garlic butter. When I cut into it, rich reddish juices spilled out, and the texture was so soft that I hardly needed to chew. It was almost as if you could taste the contentment of an unbounded life on the open range. The panel agreed: it was extraordinary, it was beautiful and in no time every trace of the Ankole was gone.

Andrew Rice, a contributing writer for the magazine, is writing a book about the legacy of the Ugandan dictator, Idi Amin.

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