

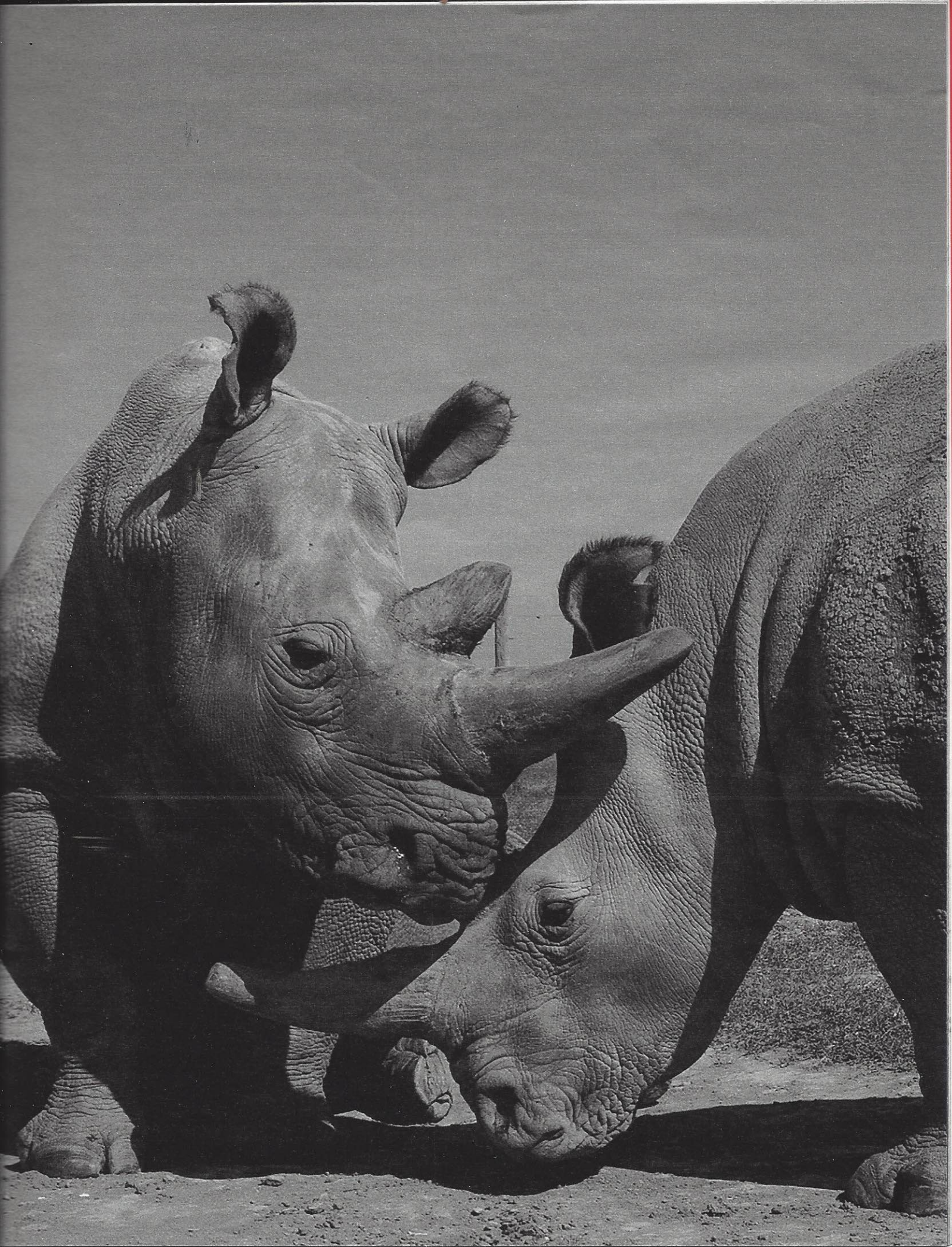


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WITNESS TO AN EXTINCTION · AN ENCOUNTER WITH THE LAST TWO NORTHERN WHITE RHINOS ON EARTH · BY SAM ANDERSON

A MOTHER AND DAUGHTER AT THE END NAJIN AND FATU ARE THE LAST TWO NORTHERN WHITE RHINOS ON EARTH. WHAT WILL BE LOST WHEN THEY DIE?



T

he day Sudan died, everything felt both monumental and ordinary. It was a Monday. Gray sky, light rain. On the horizon, the sun was struggling to make itself seen over the sharp double peaks of Mount Kenya. Little black-faced monkeys came skittering in over the fence to try to steal the morning carrots. Metal gates creaked and clanked. Men spoke in quiet Swahili. Sudan lay still in the dirt, thick legs folded under him, huge head tilted like a capsizing ship. His big front horn was blunt, scarred, worn. His breathing was harsh and ragged. All around him, for miles in every direction, the savannah teemed with life: warthogs, zebras, elephants, giraffes, leopards, lions, baboons — creatures doing what they had been doing for eons, hunting and feeding and scavenging, breathing and going and being. Until recently, Sudan had been a part of this pulse. But now he could hardly move. He was a giant stillness at the center of all the motion.

Sudan was the last male northern white rhinoceros on earth — the end of an evolutionary rope that stretched back millions of years. Although his death was a disaster, it was not a surprise. It was the grim climax of a conservation crisis that had been accelerating, for many decades, toward precisely this moment. Every desperate measure — legal, political, scientific — had already been exhausted.

Sudan was 45 years old, ancient for a rhino. His skin was creased all over. Wrinkles radiated out from his eyes. He was gray, the color of stone; he looked like a boulder that breathed. For months now, his body had been failing. When he walked, his toes scraped the ground. His legs were covered with sores; one deep gash had become badly infected. The previous day, shortly before sunset, he collapsed for the final time. He struggled, at first, to stand back up — his caretakers crouched and heaved, trying to help — but his legs were too weak. The men fed him bananas stuffed with pain pills, 24 pills at a time. Veterinarians packed his wounds with medical clay.

In the last years of his life, Sudan had become a global celebrity, a conservation icon. He lived, like an ex-president, under the protection of 24/7 armed guards. Visitors traveled from everywhere to see him. Sudan was a perfect ambassador: He weighed more than two tons but had the personality of a golden retriever. He would let people touch him and feed him snacks — a whole carrot, clamped in his big boxy mouth, looked like a little orange toothpick. Tourists got emotional, because they knew they were laying hands on a singular creature, a primordial giant about to slide off into the void. Many hurried back to their cars and cried.

Although Sudan was the last male, he was not, actually, the last of his kind. He still had two living descendants, both female: Najin, a daughter, and Fatu, a granddaughter. As Sudan declined, these two stood grazing

in a nearby field. They would live out their days in a strange existent twilight — a state of limbo that scientists call, with heartbreaking directness, “functional extinction.” Their subspecies was no longer viable. Two females, all by themselves, would not be able to save it.

In his final moments, Sudan was surrounded by the men who loved him. His caretakers were veterans of the deep bush — not, on any level, strange to death. They had survived close encounters with lions and elephants and buffalo and baboons. But this was something new. We expect extinctions to unfold offstage, in the mists of prehistory, not right in front of our faces on a specific calendar day. And yet here it was: March 19, 2018. The men scratched Sudan’s rough skin, said goodbye, made promises, apologized for the sins of humanity. Finally, the veterinarians euthanized him. For a short time, he breathed heavily. And then he died.

The men cried. But there was also work to be done. Scientists extracted what little sperm Sudan had left, packed it in a cooler and rushed it off to a lab. Right there in his pen, a team removed Sudan’s skin in big sheets. The caretakers boiled his bones in a vat. They were preparing a gift for the distant future: Someday, Sudan would be reassembled in a museum, like a dodo or a great auk or a Tyrannosaurus rex, and children would learn that once there had been a thing called a northern white rhinoceros. Living creatures would look at the dead one and try to imagine it alive. But they wouldn’t be able to, not really. We can never reconstruct all the odd little moments, boring and thrilling, that make a creature a creature, that make life life.

Sudan’s death inspired a media frenzy. A photo of him being caressed by one of his caretakers went viral, collecting millions of likes on social media. The rhino area was overrun. And then, inevitably, the world’s attention moved on.

IN MAY 2019, just over a year after the death of Sudan, the United Nations issued an apocalyptic report about mass extinction. One million plant and animal species, it warned, were at risk of annihilation. This, obviously, was a horror. Mass extinction is the ultimate crisis, doom of all dooms, the disaster toward which all other disasters flow. What could humans do to prevent it would be worse than killing the life all around us, irreversibly, at scale. One million species. A number so large exceeds the mind — it becomes incomprehensible. Albert Camus puts it in “The Plague,” “a puff of smoke in the imagination.”

And yet we cannot allow ourselves to forget the reality concealed behind that puff of smoke. One million is not just a number — it contains countless living creatures: individual frogs, bats, turtles, tigers, bees, eels, puffins, owls. Each one as real as you or me, each with its own life story and family ties and collection of habits. Together, these animals make up a vast and incredible archive: a collection of evolutionary stories so rich and complex that our highly evolved brains can hardly begin to hold them. Modern humans, for no good reason, have lit that archive on fire. We are destroying

the vaquita, a tiny porpoise that glides around in the Gulf of California. The Christmas Island shrew, which scurries and scurries — there may be none left) through rainforests on a speck of land out in the middle of the Indian Ocean.

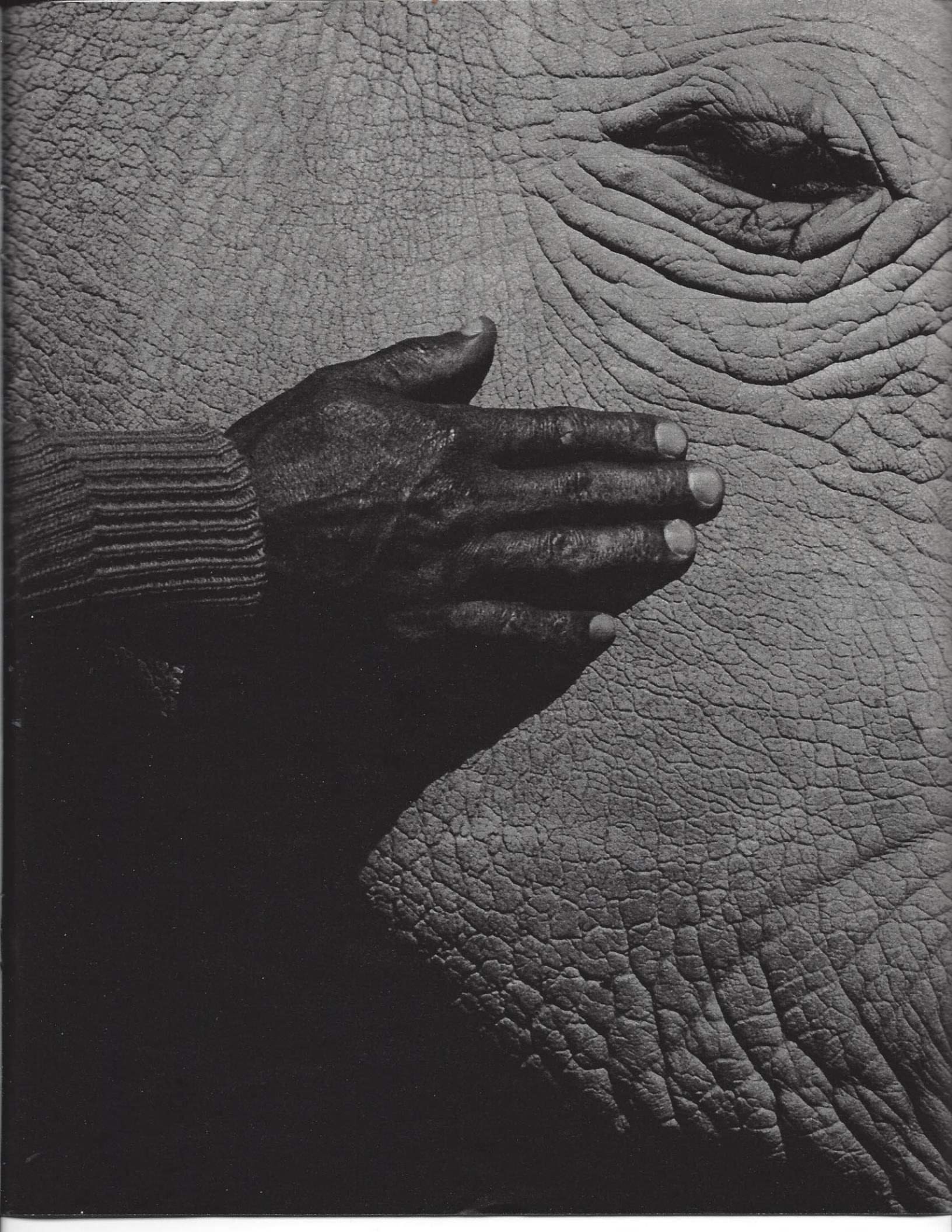
And, of course, the northern white rhinoceros.

The evolutionary story of the rhinoceros stretches back roughly 55 million years, to an alien epoch when Europe was a cluster of tropical islands, when cat-size horses galloped across North America, when wolflike carnivores were

beginning to wade into the ocean to start the very strange process of turning into whales. All over the planet, mammals were feeling out what it meant to be mammals, groping toward their best forms. Some early kinds of rhinos looked like hippos or tapirs; one especially huge relative had such a long neck that it is sometimes called the “giraffe rhinoceros.”

At some point, rumbling across the eons, the rhino settled into its basic form we know today: massive and thick and front-loaded, with small eyes set behind a menacing horn, often two. Although rhinos look dangerous, their life mission has always been peaceful: to munch on plants

ZACHARIA MUTAI,
HEAD RHINO
CARETAKER AT THE OL
PEJETA CONSERVANCY
IN KENYA, WITH
NAJIN. OPENING
PHOTOGRAPH: NAJIN
(LEFT) AND HER
DAUGHTER, FATU.



and reproduce. For many millions of years, rhinos fulfilled their goals with great success. Without many predators, without any prey, they flourished across Asia and North America, Africa and Europe.

Humans put an end to that. With primitive weapons, we hunted the rhinoceros. Over time, those weapons grew so strong that the rhino's natural armor stood no chance. The very assets that made them prehistorically indestructible — size, horns — turned out to be liabilities. Size made rhinos easy targets. Horns were coveted for all kinds of reasons: as trophies, as tools reputed to detect poison and ease childbirth, as the raw material for decorative Yemeni dagger handles. And perhaps most notorious, as an ingredient in traditional Chinese medicine, whose practitioners believe that powdered rhino horn can perform a long list of marvels: It can cool the blood, ease headaches, stop vomiting, cure snakebites and much more.

Alongside the acute violence of hunting, there is the chronic violence of habitat loss. Strip malls, soccer fields, farms, highways, factories — these, too, are weapons. Big wild animals need big wild spaces, and modern humanity has left almost nothing untouched.

This has resulted in almost unfathomable loss — a holocaust of rhinos. The Javan rhinoceros, which once roamed all over Southeast Asia, is now confined to a single national park in Indonesia, its tiny population (74) concentrated so dangerously that conservationists worry it could be wiped out by the eruption of a nearby volcano. The Sumatran rhino — a small, hairy, adorable loner — is in a similarly poor state; today there are fewer than 80.

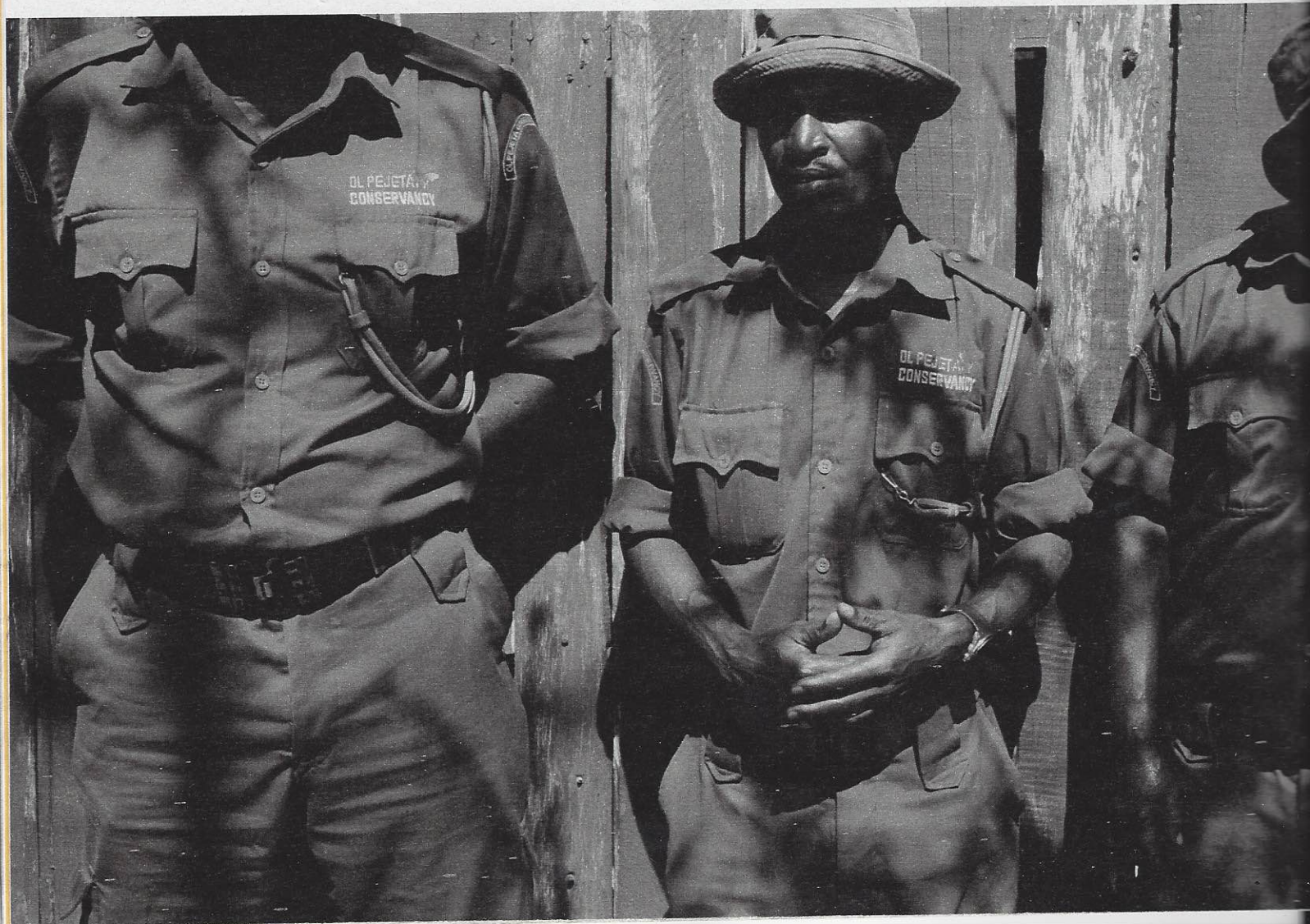
No rhino, however, is doing worse than the northern white. Its native habitat, in Central Africa, was roiled by civil wars in the late 20th century,

making conservation basically impossible. By the 1970s, a population of thousands was reduced to just 700. By the mid-1980s, only 15 northern whites remained in the wild. By 2006, that number was four — and they seem to have disappeared by 2008, almost certainly the victims of poachers. The northern white rhinoceros had been eliminated from its native range.

Fortunately, there was a backup plan: In the 1970s, a small reserve supply of northern whites had been captured and relocated to a zoo, as a kind of biological life-insurance policy. Unfortunately, these animals were dying off faster than they could reproduce. In 2009, the only remaining eligible breeders — Sudan and Suni and Najin and Fatu — were brought back to Africa, to a wildlife conservancy in Kenya. It was a moonshot: a hope that their native continent might stir something deep in the biology of the few, that it might produce a miracle.

Alas, it did not. Suni died, then Sudan. Suddenly, there were only two northern whites left. They were still out there in the field, doing the things their ancestors had always done: eating grass, wallowing in mud holes, taking naps in the shade of trees. But now everything was different. They lumbered around in a world between life and death, both here and not here. Every mouthful of grass they ate was one mouthful closer to the last that would ever be eaten.

After Sudan died, I could not stop thinking about the last two. What were they like? What did they do all day? I found their existence strangely cheering. Although their story was almost unbearably tragic, they themselves were not tragic — they were just rhinos. To meet them would be a chance to look mass extinction in the face.





n the long flight from New York to Kenya, I spent my time reading about northern white rhinos. They are not actually white — their name, most likely, was a colonialist misunderstanding: Dutch settlers called them *wijd*, meaning “wide,” and English settlers thought they were saying “white,” and then they compounded the error by calling Africa’s other species of rhino “black.” But it’s all just total nonsense, because both, in reality, are classic rhinoceros gray.

In Nairobi, I boarded a little bush plane that rumbled like a flying bus up toward the countryside. As I flew, I stared, for the 10-millionth time, at photos of the last two survivors. They were not originally from Kenya — no northern white rhino ever was — but this is where they ended up, on a former cattle ranch that was now a wildlife conservancy called Ol Pejeta, which had had success breeding rhinos.

A big rattling truck carried me into the conservancy, down dirt roads past zebras and warthogs and glowering thick-horned cape buffalo, past an official sign that marked the Equator, into Ol Pejeta’s rhino area.

Finally, after all those months of reading and imagining, I found myself out in the field — and there they were, in the distance, grazing: the last two northern whites. The real creatures. They stood together on a wide, flat stretch of tussocky grasses, heads lowered to the ground, and against the horizon they looked like parts of the landscape, like geological deposits. Comical flocks of guinea fowl scampered back and forth, twittering. One of the rhino caretakers brought out a large white bucket and, swinging it, scattered treats in piles near our feet: carrots, horse pellets.

Suddenly the rhinos were in motion, padding over, looking simultaneously clumsy and graceful, bulky but gliding, their skin folds bouncing, huge snouts wiggling to the rhythm of their clomping steps.

Just like that, my imagination was overridden by their reality. The animals, approaching, became the animals.

None of my preparation really prepared me for being in their presence. To stand near them is to feel things. It is to feel, first of all, size — the blunt creaturely meaning of it. White rhinos are the second-largest land mammals, second only to elephants. They can grow to be 6,000 pounds, with a curved front horn up to five feet long. To stand near something so huge tugs on the gravity of your cells. You feel present and embodied, being dwarfed by these warm-blooded munchers.

I was allowed to stand very close. Close enough to hear their huffing breath, to see them blink their big mild eyes, to see that their ears were fringed with a rim of hairs that seemed as delicate as eyelashes, that their tails had little black tufts. Their horns, up close, were ragged, with scraggly fibrous patches, like shafts of splintering wood. I watched them press their great wrinkled mouths against the ground, snuffing and chomping.

Sometimes they looked up at me, expressionless. White rhinos are sometimes called “square-mouthed rhinos,” and up close I could see why. Their lips press together in a long flat line, giving them a constant expression of slightly comic seriousness, like the classic emoji: 😏.

At one point Fatu, the daughter, following a seam of fresh grass, ended up grazing right next to me. She stood so close I could study her skin, which was scored with intricate patterns — deep cracks and lines that made me think of tree bark. It looked, in some places, like impenetrable armor, but also, in others, soft — it folded over on itself, around the neck and the legs, with the luxurious fluidity of molten lava or hot fudge in an ice-cream ad. She was so close that — with permission — I reached out and touched her. Again, everything was different from what I had imagined: Her skin was not smooth but rough, dry, scratchy.

Eventually, I had to leave, and back in my tent for the night, I spent all my time reliving those moments in the field, staring at photos and videos, trying to summon the solidity of being with them. And, above all, waiting for the sun to rise so I could go back.

IN 2009, WHEN Najin and Fatu first came to Africa, they were scared of everything. They would flinch whenever the wind blew, jump away from every rabbit that hopped out of a bush. They were born and raised in a zoo. Their births — in 1989 and 2000 — were two of the very few bright spots in the otherwise doomed international project to save the northern whites. Although their ancestors were from Africa, these particular creatures were not. They grew up in the Czech Republic, in man-made enclosures, eating pre-cut grasses, surrounded by humans. They had no idea how to be wild rhinos.

So Ol Pejeta brought in a tutor: a wild southern white rhino named Tauwo. The southern white subspecies is a close relative of the northern. Once upon a time, there was just one big white rhino population stretching across Africa — but it was separated, very likely by an ice age, leaving the two groups to evolve, at a great distance, along roughly parallel tracks. (Teddy Roosevelt, a rhino enthusiast, put it nicely: “It is almost as if our bison had never been known within historic times except in Texas and Ecuador.”) Over time, the isolated populations developed into two distinct subspecies. Northern white rhinos lived on marshy land, among tall grasses; they developed wider feet, which some research suggests helped them walk on mud, plus slightly hairier ears. Southern white rhinos lived in the open savannah. Today the biggest difference between the two is that the southern white rhino population is thriving, at least by rhino standards. After being nearly hunted to extinction in the late 1800s, a series of strict protections managed to bring them back. The southern white rhino is now a great conservation success story.

Tauwo is fast and aggressive, with a horn as sharp as a dragon’s tooth. Just by moving into the rhino area and doing her wild rhino things, she taught the northern whites certain basic life skills. She taught them, for instance,

how to sharpen their horns by scraping them, back and forth, on the metal gates surrounding their enclosure. She taught them how to mark their territory by pooping, strategically, in large piles. (Before, they just went wherever they happened to be standing.) She taught them how to graze, how to find the short

soft grass and scythe their heads back and forth to rip it from the ground with their lips. Above all, Tauwo taught the two northern whites not to be afraid of Africa — the wind whistling through the acacia trees, the rabbits, the warthogs, the little birds hopping all over their backs and faces.

Today the northern white rhinos seem perfectly at home in Ol Pejeta, where everyone refers to them, affectionately, as “the girls.” They live in a state of supervised wildness, with a daily routine full of little rituals and pleasures. At dawn, the caretakers come clanking in through a series of gates, and the girls pad out of their pens to greet them. Rhinos have fairly weak eyes, but their noses and ears are powerful, and the girls can identify the men by scent and sound. White rhinos are surprisingly relaxed. They could kill

**ZACHARIA MUTAI
(CENTER) WITH
TWO OTHER RHINO
CARETAKERS.**

you if necessary, but they would prefer not to. As Martin Booth, an English writer who spent part of his childhood in East Africa, put it: "Whenever one sees a white rhino in the wild, one cannot escape the impression of size, of incredible benign strength and of a strange inner passiveness. The creature looks peaceful, amiable and secure. If a creature can be said to have discovered transcendental meditation, then it must be the white rhino."

The girls, having grown up in a zoo, are especially good-natured. Their morning often starts with a thorough scratchdown from one of the caretakers, an affectionate check-in. Najin, the older and milder of the two, particularly enjoys this — she will walk over and wait for it, then lean her big body in, exhaling softly from her nostrils as the caretaker rubs her forehead, neck, belly and ears with his hands. After this, both girls will walk off, under the low orange ball of the dawn sun, to take care of their other duties: to wallow in the mud, solemnly sharpen their horns and rub their bodies, systematically, for minutes at a time, against the nub of an old wooden fencepost.

To a casual viewer, the girls might look identical. Big gray chunks, always together, always doing more or less the same thing. But to their caretakers, they are as distinct as any two family members. Najin, the mother, has weak back legs and a distinct line near the end of her front horn, the mark from a saw that was used, years ago, to trim it. She is sweet, mellow, gentle and — at least with her daughter — sometimes strict. In every part of the girls' daily routine, Najin leads the way. If Fatu tries to break the hierarchy, to cut in line at the scratching post or to lie down first for a nap, her mother will restore order with a quick swipe of her horn.

Fatu, who is in her early 20s, still has young energy. (Rhinos in captivity can live well into their 40s.) She is curious, unpredictable, sometimes wild. The caretakers touch her too but are a little more careful, a little more attentive to her moods. Fatu has become very close to Tauwo — they graze together and occasionally, playfully, square off to spar with their horns. The humans, meanwhile, give Tauwo a very wide berth — she has been known to charge, with real menace, once forcing a caretaker to save himself by leaping under a truck.

The caretakers are a team of Kenyan men who wear olive green uniforms and floppy hats and speak, among them, dozens of languages. (Kenya has more than 40 recognized tribes and around 70 languages, so Kenyans tend to be polyglots.) The men live in a cluster of simple round huts right next to the girls' enclosure, and they cook themselves modest meals out of modest rations, and their days are structured around the rhythms of the girls. They wake at dawn, when the girls wake, and go off-duty at sunset, when the girls go into their pens for the night. As a result, the girls and the men are remarkably close. The men spend more time with the girls than they do with their own families, some of whom live far away. With a glance, they can sense the girls' moods and needs. They can stall an angry rhino with a word or, if that doesn't work, by raising a hand, or — in truly dire circumstances — by throwing their floppy green hats in the air. They are around the rhinos so much that at night they often dream about them. In the dreams, sometimes the rhinos speak: They give them life advice.

Outsiders, me included, tend to have romantic notions of this caretaking job — a sacred guardianship of the rarest animals on earth — and in environmental circles the caretakers have become minor celebrities. Joseph Wachira, who goes by JoJo and was featured in that viral photo of the dying Sudan, once met an American woman who had tattooed his name on her arm. The North Carolina Zoo recently named a baby rhino JoJo in his honor.

In Kenya, however, the reality is not glamorous at all. The caretakers are poorly paid and sit low in the social hierarchy. Kenyans have a complex relationship to the bush and its animals — these huge, native, often destructive but increasingly threatened creatures whose perceived exoticism draws in so much foreign money. Shoveling rhino poop strikes many urban Kenyans as menial and retrograde and slightly embarrassing. When the caretakers travel outside Ol Pejeta to go into town, they never wear their green uniforms.

MUTAI WITH FATU AS NAJIN LIES BEHIND THEM. TO THE CARETAKERS, THEY ARE AS DISTINCT AS ANY TWO FAMILY MEMBERS.

I spent much of my time with one of the younger caretakers, James Mwenda. At 31, he is the same age as Najin. Mwenda grew up in a poor village at the foot of Mount Kenya, and his dream was to study literature in college. When that fell through, he ended up working in the bush, with animals. At first, it was more of a job than a calling. But soon he fell in love with the northern whites. He speaks to them in a husky, affectionate voice, calling them "mama" and "good girl." They follow him around like big weird dogs.

When Sudan got sick, Mwenda felt, in a new way, the deep burden of extinction. "It's emotionally draining," he told me. "I don't like failure. Can you imagine watching a species that is going extinct?"

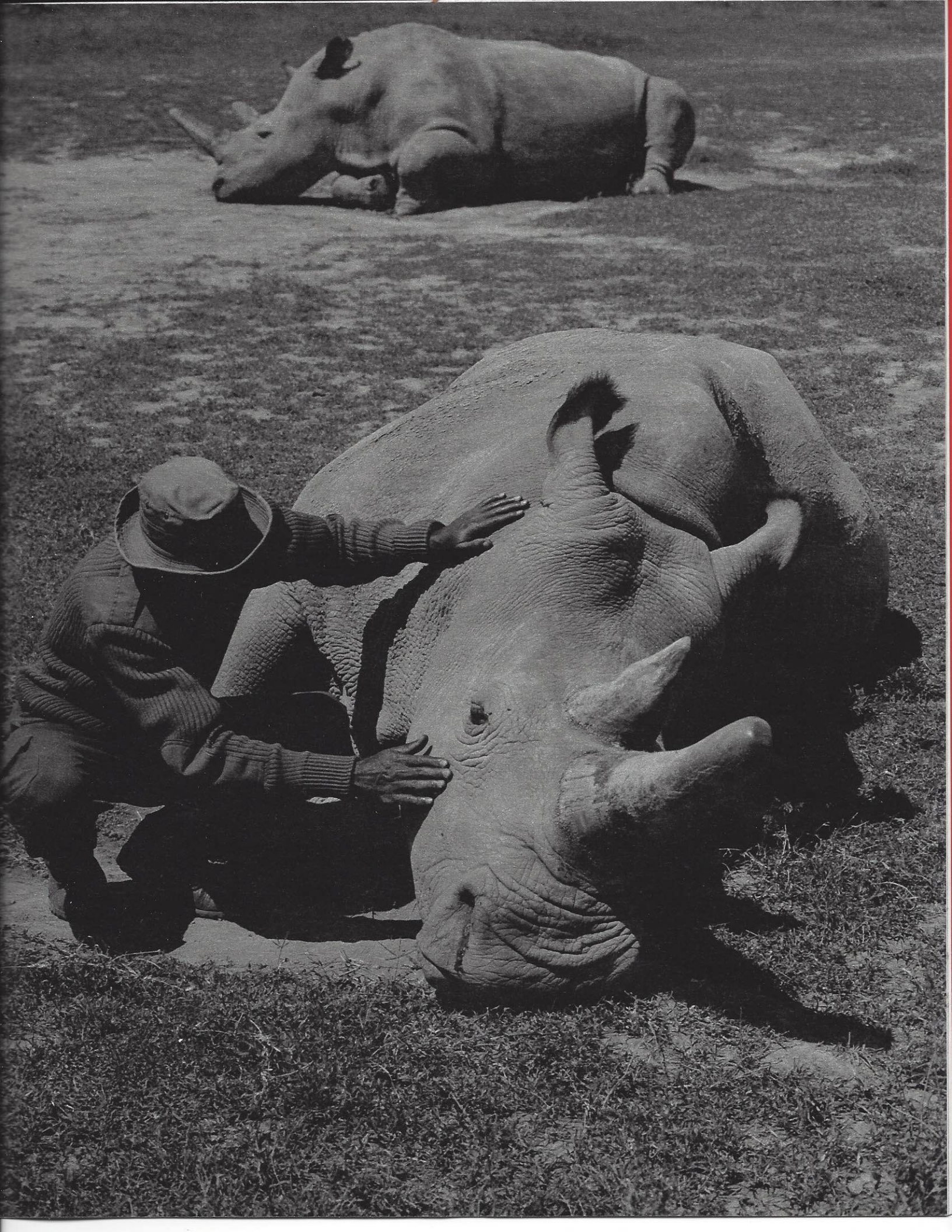
He promised the dying rhino that he would share the tragedy of the northern whites with the rest of the world — that he would convert that sorrow into an energy that might help rescue other species. "Extinction is a very distant thing for people," Mwenda told me. "So you have to turn extinction into a story — a story in which people can see themselves." He does this largely through social media. Out in the field, Mwenda stalks the girls with a fancy, long-lensed camera, a gift from a foreign friend. Sometimes, he will lie in the grass to get interesting angles for his followers.

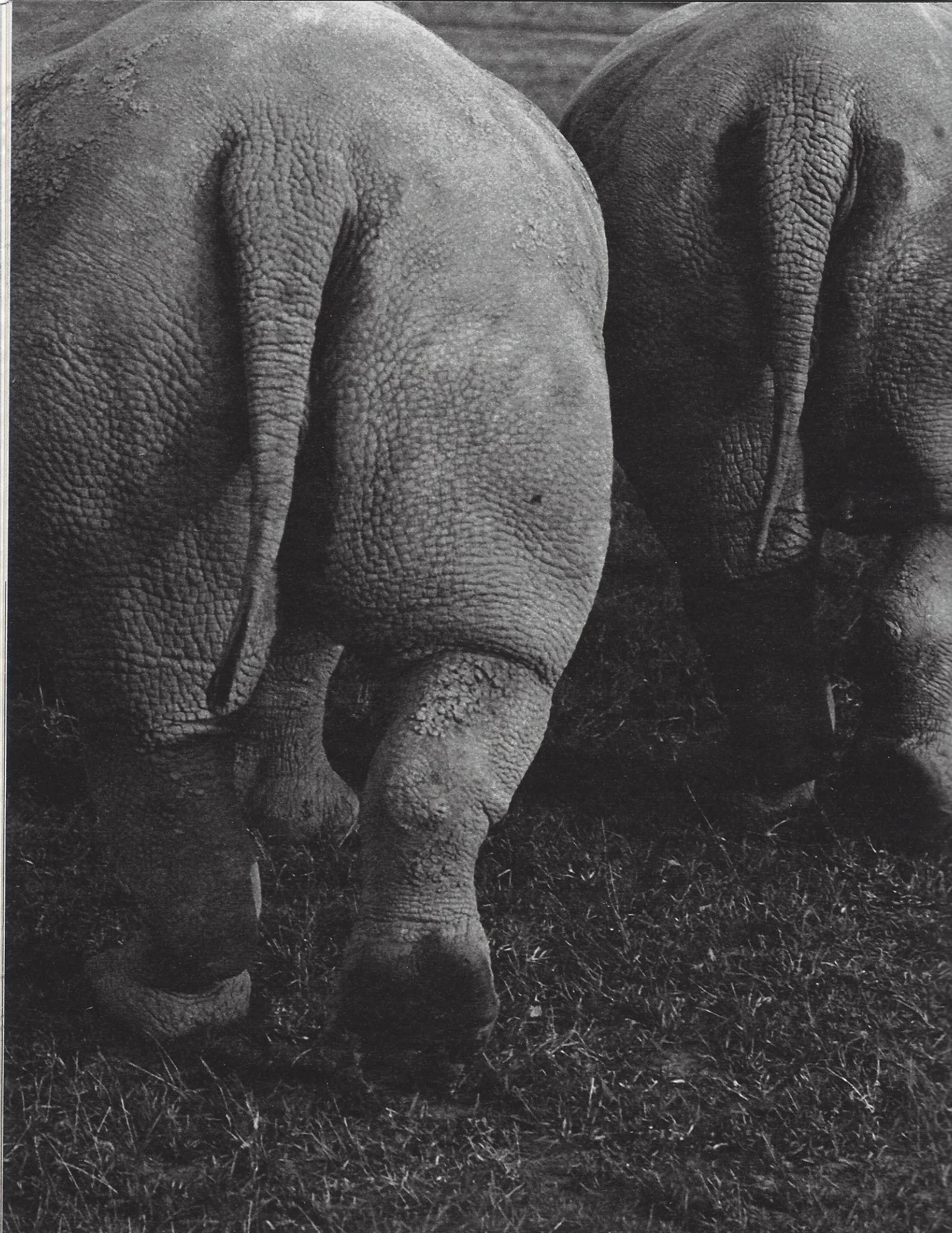
Mwenda recently starred in "Kifaru," an American documentary about the northern whites at Ol Pejeta, and he has traveled from Kenya to give talks in Britain, the United States and Hong Kong, where he remembers people crying when he showed them photos of rhinos killed by poachers (they had been taught as children that the horns fall off naturally and are collected by rangers).

Mwenda would like to change the way people think about African travel, to break the paradigm of tourists staring out of car windows, marking animals off of checklists and moving on. "Why not spend time seeing how they live?" he asked me. "Spending time helps you connect. Just as you would want to spend time with a friend, or with a new person. To get to know who they are, how they live, how they do things. The same thing with these girls. They're contemporary beings. There's a healing aspect to see them as contemporary beings."

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he girls spend their days grazing, from dawn to dusk, in a 100-acre field. It is protected by a tall electric fence, along one side of which runs a road where safari vehicles can stop to look. Sometimes there are traffic jams. Najin and Fatu may not be quite as famous as Sudan, but they are still well known in safari circles — still bucket-list creatures. Four times a day, a truckload of visitors who have paid a special fee and signed safety waivers are allowed to come inside the enclosure. The girls surround





the truck, eating snacks, while the tourists (Chinese, Australian, German, American) take photos. During the high season, the rhino area's parking lot fills up with four-by-fours and school buses.

I spent one week out in the field with the girls. I would go to them at dawn and leave when the sun set. It was no time at all, in the scheme of things — not even a blink of evolution's eye, and just the tiniest fraction of the girls' big, wrinkled lives. But out there in the field, time hung thick like fog. Every day felt like a sliver of eternity.

It was the cold season in Kenya, and I stood there through every kind of weather, under orange skies and yellow skies and skies as gray as the girls. I watched Fatu get mad at an egret that landed on her back and try to buck it off. I watched Najin dip her huge head into the water trough and drink so gently, with such delicate sips, that she hardly left a ripple. I watched dung beetles roll perfect spheres of rhino poop, then struggle to wrestle them off to their nests through tall grass. I watched the girls sharpen their horns, clumsily, adorably, on a little metal gate, scraping the paint right off, threatening to tear the whole thing from its hinges. I was chased, briefly, by a blind buffalo named Russell. I saw Fatu shock herself one morning on the electric fence, right on the face — she flinched and raced off, at a speed faster than I knew rhinos could run, and a terrified Najin turned and ran right alongside her. During thunderstorms, I stood there getting soaked, watching the girls change color — chocolatey, glistening — as the dust on their backs turned, drop by drop, into mud. One day I held a cantaloupe-size ball of rhino poop in my palm, then broke it in half: pure grass.

I spent an unbelievable number of hours just watching the girls graze. That might sound boring, but they elevate it to an art form. White rhinos eat so much grass that they are sometimes called "grass rhinos." Their mouths are perfectly designed for the task, in the same way that a great white shark's mouth is perfectly designed to eat seals. White rhino snouts are flat, like vacuum attachments, and they tear the grass not with their teeth but with their lips, which are ridged to clamp the tiniest shoots. They can find grass in what looks like a bare patch of dirt. As they graze, the girls swing their heads back and forth, tearing and chewing, tearing and chewing, crunching every mouthful with the sound of muffled thunder. I kept wondering: How could these tiny plants support creatures so huge? And how could grass ever be so loud?

One day, just after dawn, I got to give Najin her morning scratchdown. JoJo was scratching her, as he did most mornings, and when he stopped, Najin stood there, waiting, seeming to want more.

JoJo asked if I wanted to give it a try.

I did. I walked over to the mother rhino, curled my fingers and — a little hesitantly, much more tentatively than JoJo — started to scratch. I scratched her temple, her neck, her big thick folds. I felt her roughness and her softness. I wasn't very good at it, to be honest — I was slightly scared, ready to sprint away at any moment, so I didn't really dig in like the caretakers, didn't commit my whole fragile body to the task, and I think Najin could tell. But she stood there anyway, accepting it — and then when I stopped, she swiveled her long head over toward me, stared at me, held still. JoJo said this meant she was asking for more. So I kept scratching.

Most of us are taught that rhinos are exotic. Perhaps no animal has been more widely misunderstood, especially in the West. For over 1,000 years, the historian Kelly Enright points out, not a single rhino was seen in Europe. In that absence, misinformation bloomed. According to "The Travels of Marco Polo," rhinos were very ugly unicorns that did not kill their enemies, as you might expect, with their horns — they pinned them under their knees and licked them to death with their spiky tongues. Even today, in the modern world, rhinos are mythologized and fetishized to the point of unreality. We look at them like dinosaurs who have outlasted their time, even though they are no older than horses. We see their horns as strange and fantastical, but in fact they are only compressed keratin, the same material that makes up our hair. The same material, in fact, that made up the fingernails I was using to scratch Najin.

Being with the girls, seeing the lives they share with their caretakers, is the perfect antidote to any exoticism. The men treat the rhinos like a cross between little sisters and very good dogs and prize cows and great-grandmothers. The relationship is not predatory, not extractive. All the small daily interactions — the petting and scratching, the nicknames, the looks — are exchanges of currencies so ancient that they are impossible to hoard and hardly even need names: kindness, comfort, friction, warmth, pleasure, presence, safety.

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ust down the road from the girls, Ol Pejeta has a rhinoceros memorial. It is a place of deep sadness. One tall tree stands alone in the middle of an open field, and around it sits a score of rough stone piles, each bearing a plaque with a rhino's name. A few of the honored animals were famous and highly protected, and therefore able to die of natural causes: Suni and Sudan, for instance, the last two male northern whites.

But a vast majority were not famous, and their lives ended terribly, at the hands of poachers. They were shot by guns or poison arrows, their horns cut off. I saw markers for rhinos called Carol, Mia, Shemsha, Zulu, Kaka, Batian. Some died quickly, but others survived for weeks before succumbing to their injuries. I saw a plaque for Ishirini, a 19-year-old black rhino: "The security team found her writhing in pain with the horns already chopped off. She was 12 months pregnant." A 28-year-old named Job: "Semi tame blind rhino shot dead in a rhino enclosure and both horns removed." The names just kept coming: Mwanzo, Kiriamiti, Muigo, Chema. Max, a 6-year-old white rhino, had had his horns pre-emptively sawed off by rangers, to dissuade the poachers. But the poachers shot him anyway, perhaps just out of spite.

**FATU (LEFT)
AND NAJIN
RETURNING
TO THEIR
NIGHTTIME
ENCLOSURE.**

Even on a wildlife conservancy, it is impossible to protect every animal. Ol Pejeta is huge, and it is surrounded, on every side, by desperate poverty. On the black market, rhino horn is worth more than gold. The law of supply and demand dictates that the closer rhinos get to extinction, the more valuable their horns become.

Although the killing happens locally, the market is international and controlled by highly organized crime syndicates. (Powdered rhino horn, in fact, is sometimes consumed like a drug: People mix it with wine at parties in Vietnam.) In recent years, poaching has increased rapidly.

The girls, in the absence of armed guards, would probably be killed immediately. Some billionaire would no doubt pay a fortune to own the horns of the last two northern whites.

In the face of all this gloom, and against very steep odds, there is still a last-ditch effort to save the subspecies. Since the 1970s, scientists have been collecting tissues from the northern whites. Many of these are housed, at several hundred degrees below zero, in the Frozen

(Continued on Page 43)

Zoo, part of a San Diego research center. Like many large animals, rhinos are finicky breeders. Both Najin and Fatu have reproductive problems; neither can carry a baby to term. But their eggs, fertilized with frozen sperm and implanted into the uterus of a healthy southern white rhino, may still be able to create a viable calf. It is a reproductive hail Mary, but it is also the best option left.

My visit to Kenya came just a few weeks before the first attempt to extract the girls' eggs — a major operation that had everyone nervous. Some of the possible outcomes were bad: They might have no eggs, or no viable eggs; or the operation could go wrong, and one or both of the animals could die. Zacharia Mutai, the head rhino caretaker and a quiet, stoic man, told me that he was so stressed he was having trouble sleeping.

"It's delicate," James Mwenda told me. "It's demanding. It's difficult for the animals. Maybe it's not always succeeding. Anything we are leaving room for. But it's the only way out. We have to try."

"If that's not successful," Elodie Sampéré, Ol Pejeta's media liaison, said, "then the only option left is basically stem cells" — "Jurassic Park," more or less.

The question is harsh but must be asked: Why save one particular subspecies of rhino? Our planet, cynics will tell you, is not a museum. We have no sacred duty to the ecological status quo. Nature is brutal. Variants come and go. We have already lost the giraffe rhinoceros and the woolly rhinoceros and more than 100 other kinds of ancient rhinos — and we seem to be getting along just fine. Conservation is largely sentimentality.

The answer to this is, first of all, to knock the cynic's hat off, preferably into a wet gutter, and then to kick it a little farther away every time he tries to pick it up. Then, point out that nothing exists in isolation. A rhino is not just a rhino: It is a load-bearing strand in an elaborate ecological web. Just by going about its day, a rhinoceros helps keep its whole environment healthy. Its grazing mows and plows the fields. Its daily walks clear paths through the bush, leaving hard, flat roads for other animals to follow. A rhino's dung feeds colonies of insects, and birds come to feed on the insects, and other predators come to catch the birds. A rhino is not just a part of the world — it *is* a world. Everywhere it goes, it moves in swirling clouds of ox-peckers and egrets and guinea fowl. Humans like to pretend that we can stand apart from such elaborate interconnections, from the vast web of nonhuman life. But we, too, are a part of that web. And sooner or later our strand will be cut.

At some point, we have to talk about love. About rhinos as givers and receivers of love. We don't live in a culture that encourages this. Love is not quantifiable; it doesn't generate doomed statistics.

It is ignored in policy debates. And yet, in the end, love is the source of all our meaningful values.

Clearly, Najin and Fatu love each other. They are mother and daughter mammals; they seek each other's presence and warmth and touch. In the wild, female white rhinos tend to be social, living with their calves in groups of about a dozen. But the girls had only each other, day after day. Sometimes I tried to imagine Najin without Fatu or Fatu without Najin, and it made me extremely sad.

The caretakers, too, very obviously love the girls. And the girls, as much as rhinos can, seem to love them back. After just a couple of hours, I, too, was in love with these creatures — especially with Najin, whom I wanted to stand next to, and actually be hugging, at all times. (Mwenda said I should absolutely not hug her — "your daughter and son need you back," is how he put it.)

Falling in love with the girls, up close, made me think about one of our most basic human conundrums: Love has a range.

We are built to love, and we can summon that love to do nearly impossible things — and yet that love has an outer range of maybe 30 yards. It's like a wonderful lamp. It fills the inside of our houses. It washes over our families and our pets. It extends, as we walk, to the town around us.

But it cannot leap, with any of the necessary intensity, across city limits or state lines or oceans. It cannot leap, except abstractly, with great effort, to distant people in need, or to strange, threatened animals. We love, really love, what is near us. What we have touched. What loves us back.

Those limitations are a problem when it comes to a crisis like mass extinction. All 7.7 billion humans cannot possibly come and spend a week with the girls, which means that humanity at large will never give Najin her morning scratchdown and feel her warm, grunting breath. Humanity at large will never truly love them. And so we will never act, collectively, with the urgency that befits true love — the only kind of urgency that might work.

And that's just the girls, two particularly charismatic animals right on the brink of extinction. What about, let's say, the Northwest Bornean orangutan, an orange ape whose cheeks look as if they are being pinched and stretched by a very enthusiastic grandmother? There are about 1,500 left. What about the black-footed ferret, sneaky little fur-tube of the Great Plains? There are fewer than 400 left in the wild. The humphead wrasse, the giant panda, the dugong, the hawksbill turtle, the polar bear, the Cross River gorilla? The monarch butterfly?

What about the whole Amazon rainforest?

What about the coral reefs?

We have to proceed, somehow, as if our love extended to creatures and places it could extend to but does not. We need to fit humanity with some kind of prosthetic love extensions.

The girls do not exist for us. They are not symbols or oracles. They are not there to answer

We have to proceed, somehow, as if our love extended to creatures and places it could extend to but does not.

our existential questions or to help us save the world. They are something better and simpler. They are the girls.

On my last day in Kenya, I walked to the water trough and said goodbye to Najin. She reached her head out toward me, with that deadly horn extended, and just looked. She stood still, bulky, watching me, and I watched her back, and after a while, she bent her neck down to take one of her long, quiet drinks. Then she looked back up at me, her snout shining with water. I reached my hand out and touched her horn, cautiously, twice. She stood still, staring. I told Najin that it had been very nice to meet her. I could not make myself walk away: As long as I stayed close to the girls, they would continue to fill my whole vision. Najin stared at me for a while longer, snuffling gently. Then she turned and walked away.

Of course I could not stay with the girls. I had to go back home.

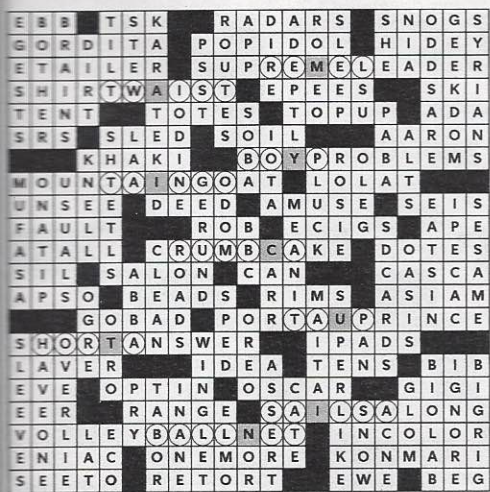
A few weeks after I left, in August 2019, I learned that the egg-extraction operation had been a success. The girls were fine, and the team of scientists had indeed managed to harvest some eggs: five from Fatu, five from Najin. Seven of these were successfully fertilized; of those seven, three went on to become embryos. They now sit in a deep freeze, waiting for the next uncertain steps: implantation, gestation, potentially someday a birth. It is still a long shot, and researchers caution that it could take many years, and that even if everything goes perfectly, in the labs and in the fields, there may not be enough genetic diversity left to seed a new population of healthy northern whites.

The girls, meanwhile, walked back out to the field to do what they had always done. Back home, I looked, constantly, at my photos and videos of the rhinos, trying to hold on to my time with them. But inevitably, gradually, they slipped away. Their massive presence turned into a massive absence.

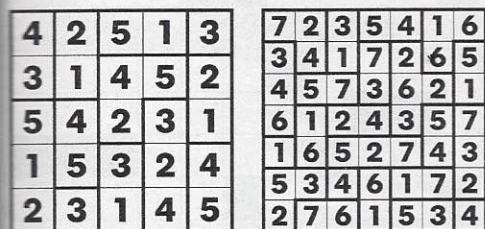
Some months later, as I was trying to write about the girls, trying to bring them to life on the page, a global pandemic hit. The whole world shut down. We were all suddenly absent to one another. It was hard to focus on the *(Continued on Page 45)*

Answers to puzzles of 1.3.21

BUSTING MOVES



KENKEN

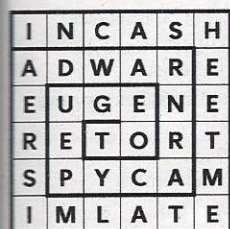


ACROSTIC

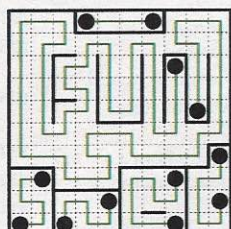
(MARY) MORRIS, ALL THE WAY TO THE TIGERS — As a child I had a tiger dream. ... [I]t was always the same. ... [A] tiger at the foot of my bed. ... sits on his haunches, sharpening his claws on my bedposts. ... [T]hen he ... springs through the air ... just before he lands on top of me, I wake up.

- A. Mad rush
- B. Orangish
- C. Rags
- D. Rewinds
- E. Indents
- F. Scratch
- G. Amy Chua
- H. "Life of Pi"
- I. Lefties
- J. Tony
- K. Hobbes
- L. Empath
- M. Woods
- N. Ambush
- O. Yawning
- P. Tea sets
- Q. Outfight
- R. Torah
- S. Handsaw
- T. Eliot
- U. Tosses
- V. Impede
- W. "Get help"
- X. Ethiopia
- Y. Rajah
- Z. Shere Khan

WHIRLPOOL



ROPE THREADING



Answers to puzzle on Page 44

SPPELLING BEE
Bifocal (3 points). Also: Aboli, oioli, aloof, baobab, boffo, boobo, cocoa, colico, cocoa, colico, falliff, focaccia, focal, follic, folio, local, loofa, official. If you found other legitimate dictionary words in the beehive, feel free to include them in your score.

White Rhinos

(Continued from Page 43)

crisis of mass extinction when our own species was suffering and dying, right in front of us, at such an alarming rate.

Still, the girls continued to roam through my mind. In this moment of total upheaval, I found their existence to be anchoring — the knowledge that they were both still out there, in the field, side by side, chewing grass under thunderous skies. Living, as Wendell Berry once wrote, with "the peace of wild things/who do not tax their lives with forethought/of grief."

I kept remembering, in particular, one moment out in the field.

"Have you ever heard a rhino snoring before?" James Mwenda asked me one afternoon.

We were sitting on the edge of a hole — an old aardvark den that had collapsed and was now used mainly by warthogs. The girls were napping nearby. All around us the birds were stitching their crazy quilt of songs: hooting, chipping, whirring, beeping, cooing, grinding, sliding. And yes, in the midst of all that noise, like a distant tractor gently idling, one of the rhinos was snoring.

It was, indeed, my first time. And yet the sound was familiar — exactly the same kind of rhythmic rasp you would hear coming out of your stepfather or your pet dog or your best friend. It was just a regular old snore: the universal soundtrack of a mammal deep in slumber.

The noise was coming from Najin. Fatu was sleeping silently next to her, her big square snout mashed on the ground, her legs curled under her like a kitten's. The two of them looked armored but defenseless, adorable and sad.

Watching the girls take naps was always one of my favorite things, because it required, every time, an elaborate and tender choreography:

Najin, hobbling a bit because of her weak back legs, would choose a spot to lie down on, while Fatu stood guard over her, waiting patiently, making sure the field was safe for sleep. Only after Najin had slid her huge bulk entirely to the ground could Fatu rest herself. Before she did, however, she would essentially cuddle with her mother: tip her head down and touch her own front horn, gently, to her mother's front horn, then press her body into her mother's body. Then Fatu would slide down flat, a few feet away from Najin. I could not get enough of watching them sleep — because, of course, a northern white rhino nap was never just a regular nap. Every time the girls closed their eyes, all the northern white rhino consciousness left on planet Earth temporarily blinked out. And when they woke up, it blinked back on again.

Suddenly, in the midst of Najin's snoring, another sound broke out over the field — a rumble even louder than the snore. This new noise went on and on. It sounded like a trombonist warming up, feeling out the acoustics of a very large concert hall. This was, it became clear, a rhinoceros fart. One of the girls was breaking wind in her sleep — emphatically, sincerely, admirably, without restraint.

Once the noise died down, I asked Mwenda if he could tell which of the rhinos had done it.

He laughed. "The two of them," he said. "The two of them together — they did it at once."

This struck me, in that moment, as the very definition of magic, and I laughed with crazy joy. Life speaks to us in so many languages. The last two northern white rhinos, mother and daughter, had passed gas together, in perfect unison, in the middle of a happy sleep. Mwenda and I had just heard the rarest symphony in the world: one biological chord, rising, fading, dispersing, expanding. ♦

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Fill the grid with digits so as not to repeat a digit in any row or column, and so that the digits within each heavily outlined box will produce the target number shown, by using addition, subtraction, multiplication or division, as indicated in the box. A 5x5 grid will use the digits 1-5. A 7x7 grid will use 1-7.

