

Tom Gnoske, an artist who prepares specimens for the Field Museum, believes he has discovered a type of maneless lion with a smaller skull than the familiar maned variety.

THE MANE MAN

A NON-SCIENTIST'S CURIOSITY KILLS ASSUMPTIONS ABOUT BIG CATS

The day he turned 4, Tom Gnoske met the famous man-eating Lions of Tsavo, which had killed and eaten 135 people. Even in their sculpted stillness, poised behind glass in the Field Museum of Natural History, the sleek-headed lions looked sinister. Tom's father, Stan Gnoske, read aloud to his son from the signs around the exhibit. The lions, he said, had preyed on humans for nine months in 1898, killing and eating the people camped at a worksite to build a railroad bridge across the Tsavo River in what is now Kenya. Tom could easily imagine these brutal-looking lions dragging workers out of their tents and devouring them on moonlit hills. 🦁 But when his father related that the lions were

BY MATHERINE MILLETT TRIBUNE PHOTO BY BILL HOGAN

males, Tom thought there must be some mistake. Even at 4, he knew that male lions have manes. He knew a lot about animals from watching "Wild Kingdom" every Sunday night in his Uptown home, and from frequent visits to the museum. The lions in the glass case had only wispy tufts of hair on their cheeks, not full-manes of black or blond hair. But there was no mistake; these were male lions that simply didn't match the popular image of the king of beasts.

Now 36, his own blond mane thinning a bit on top, Gnoske has found out some other things about the Lions of Tsavo—they may not have been man-eaters, for example—and about lions in general. After numerous field trips and countless hours of library and museum research, he has concluded that a distinct type of lion, which he calls a "buffalo lion," roams the river valleys of Africa. His theory challenges longstanding assumptions about the physical characteristics and social behavior of the species, and the fact that he has no formal scientific training or academic standing in zoology doesn't deter him. In fact he considers it an advantage that instead he has trained himself as an artist—to see the actual rather than the expected, the pattern in the parts.

AN AVID DRAFTSMAN from an early age, Gnoske was encouraged to develop his talent by his artist mother, Mary. He started drawing dinosaurs, progressed to military vehicles and Egyptian mummies, hit his stride by drawing big cats in high school, and then settled into the challenge of rendering birds in all their subtle detail. His talent won him a scholarship to the School of the Art Institute of Chicago in 1984, at age 19.

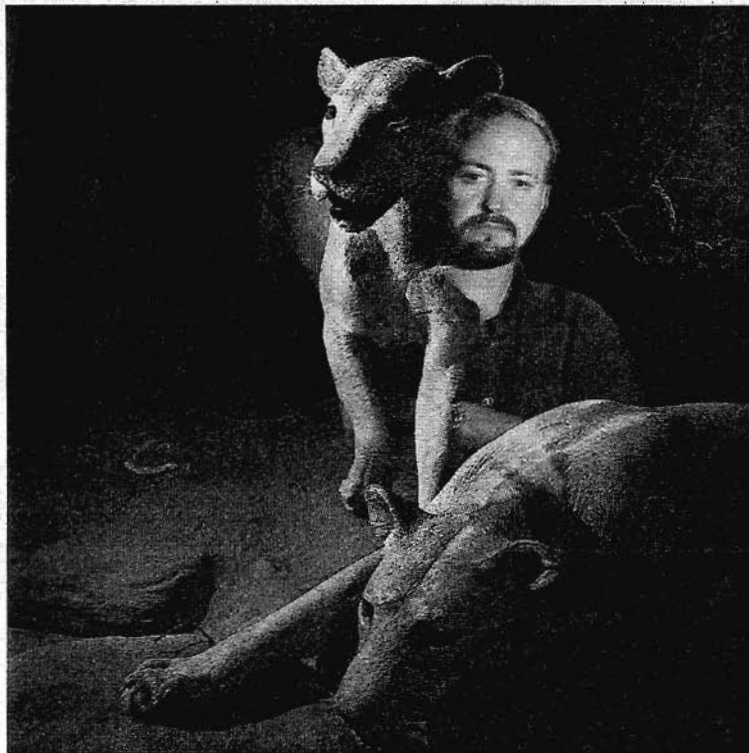
Following the example of Audubon, he wanted to study preserved bird specimens to improve his drawing, so he asked Field Museum officials to give him access to their large inventory of "study skins." They granted his request, and his art work improved dramatically. To express his gratitude, Gnoske offered to prepare new bird specimens for the museum.

It was a welcome offer; museum-grade taxidermy is a dying art, in every sense. Natural-history museums are full, and new species are not appearing with any regularity, so few people still practice the art. Gnoske had to teach himself by reading old books, trying and erring, and seeking advice wherever he could. He did so well that he was offered a staff position, a job Gnoske had dreamed of since his childhood visits to the museum. After one semester, art school was history.

Gnoske has since become, in the words of supervisor Dave Willard, "one of the best prepara-

tors the museum has ever had. I can look at a drawer full of birds and pick out Tom's right away. They're perfect." His work includes the peregrine falcon in the "Birds of North America" exhibit on the first floor, and the mountain lion that hangs from its hind legs, as though shot, near a case of mule deer on the first floor. Most of his specimens, however, lie in drawers in the research collection.

Though birds are Gnoske's job at the museum, lions are his passion. For the past 10 years, he has used his vacation days and extra cash to ride Land



Gnoske is reflected in the glass that encases the museum's famous Lions of Tsavo, which first sparked his curiosity about lions that don't have manes.

Rovers all over East Africa and watch lions in the wild. He has also measured their skulls and leg bones in museum collections around the world, and read virtually everything available in English about *Panthera leo leo*.

He now believes he has identified a large group of Tsavo-like lions that scientists had previously overlooked, a maneless evolutionary predecessor to the smaller-statured maned lion. He calls this new group "buffalo lions," because they prey almost exclusively on the formidable Cape buffalo of the African plains.

Leigh Van Valen, a professor of ecology and evolution at the University of Chicago and the editor of two academic journals, says Gnoske may be on to a major discovery. Van Valen calls it a "very odd oversight" that formally trained zoologists have not recognized the distinctions Gnoske is making between the standard MGM-logo Leos and the type that look like the maneless man-eaters of Tsavo.

"If these were beetles instead of lions," he says,

"this would never happen. Someone would have noted the differences, because people have few, if any, preconceptions about beetles. But lions are just supposed to be there, as lions." He cites the mane as a good example of a preconception that can obscure potential discovery.

Besides being maneless, Gnoske's buffalo lions are larger than the usual "pride lions." An average male buffalo lion stands 45 inches high at the shoulder and has a relatively small head, while the average male pride lion is about 39 inches tall at the shoulder and has a large head—proportions that he compares to those of a pit bull terrier.

The comparison comes easily to Gnoske, who shares an Edgewater apartment with two pit bulls and admires them with a combination of affection and scientific interest.

"I'll say, 'Hey, they're digging up the yard,'" says his father, Stan Gnoske, "and Tom will say, 'Isn't that interesting, the way they're digging up the yard.'" The dogs helped inspire Gnoske's inquiry into the different social behaviors of lions, especially the violent fighting that goes on among male pride lions.

Gnoske thinks the buffalo lion predates the pride lion. Its lanky physique resembles the fossilized remains of lions in Africa's igneous rocks and the La Brea Tar Pits of California. (Lions were once the most widely distributed mammals on Earth.) The buffalo lion also looks strikingly similar to cave paintings found in France that date to 32,000 years ago, long before pride lions evolved. In Gnoske's view, the buffalo lion represents the more ancient form, similar to the extinct *Panthera leo spelea*.

Pride lions have been studied in the open plains of the Serengeti for years, primarily by Craig Packer of the University of Minnesota and his predecessor in Serengeti research, David Schaller. Male pride lions seldom hunt, reserving their strength to fight one another. Two or three adult males dominate each pride of females and cubs, but they lounge on rocks while the females hunt, often in groups, to bring down zebra, gazelle, wildebeest and other mid-size game. After the kill, the adult males swoop in to seize the "lion's share." Females maintain the pride and its territory.

Buffalo lions, by contrast, live in smaller and more mobile groups, Gnoske says. Male buffalo lions hunt, often alone, and can bring down a Cape buffalo by grabbing its nose and snapping its neck, or by pulling it down by the nose so that it breaks its own neck as it falls.

Gnoske says he has observed buffalo lions in nuclear families, in polygamous families with one male and several females, and in hunting groups of two males and two females with their cubs.

Katherine Millet is an Elmhurst lawyer and writer who wrote about Muslim women in the Dec. 2 magazine.

"So when I see the lions on the Nile River, a male with one female and two cubs, I think, 'Is this a pride or is this a family?'" he says. "When I see something that's unusual, that I haven't read before, or that contradicts something I've read, I want to know about it. There is a lot of dogma to overcome."

Gnoske's notion of a separate class of lion puts him at odds with some heavily credentialed biologists in a field that attracts ambitious graduate students and PhDs. Discoveries about big cats, especially man-eaters, can lead to research grants, academic papers, even lucrative book and movie contracts. (The Lions of Tsavo have been celebrat-



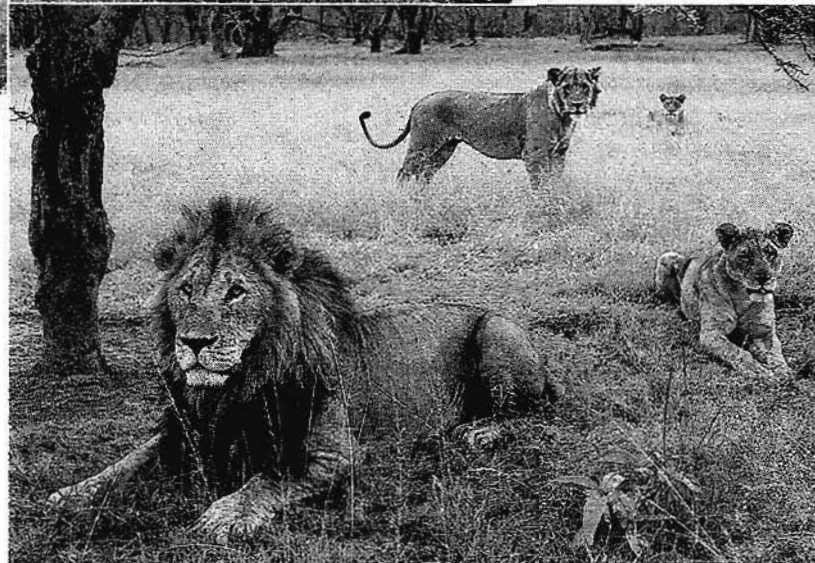
ed in two movies, "Bwana Devil" in 1952 and "The Ghost and the Darkness" in 1996. Two books that include man-eating lions are scheduled for release next year.)

One skeptic is Bruce Patterson, the Field Museum's curator of zoology. He points to a study of lion skull sizes as evidence that no "small-headed" variety of lions exists. He also relies on genetic tests performed by Jean Dubach, the population geneticist at the Brookfield Zoo, who analyzed more than 400 DNA samples from lions throughout southern Africa. The tests show, she says, that all African lions belong to the same subspecies, *Panthera leo leo*. There is no way that any of them, including the samples of lions taken from Tsavo, could possibly belong to a separate species or subspecies, based on her tests.

Patterson, who is listed as a co-author of Dubach's paper about the lion study, dismisses the idea of a buffalo lion and says he suspects that both a male's mane size and body size increase along with the average number of females in local prides.

Gnoske, however, believes that it is the type of prey available that determines a lion's size and hunting ability. Buffalo lions, he says, survive in areas with lower prey density, like the hot, dry

Clockwise from above: a mature male "buffalo lion" in Tsavo East National Park in Kenya, about 1,000 feet above sea level; Gnoske with a buffalo carcass killed by a lion in Tsavo; a male "pride lion" (foreground) with females and male cubs in Kenya's Masai Steppe, elevation 4,500 feet.



regions that support only Cape buffalo and a few other prey species along the banks of rivers. He also is unconvinced by the DNA studies. "Evolution doesn't just happen at some magic point when genetic tests show enough divergence to suggest a new species," he says. "Adaptation is a continuous process."

And Van Valen notes that genes alone do not determine species classification. He points to a gene study that shows less divergence between polar bears and brown bears, which are classified in separate genera, than between different populations of brown bears.

As for the question of mane size, Gnoske spent six weeks in Kenya last summer testing his theory

that manes increase with altitude, not the number of females in a pride. Since higher altitudes mean lower temperatures, he predicted that he would see the lions with the biggest manes at the highest altitudes, living in the coolest temperatures. That's what he found.

It is that kind of field work that helps give Gnoske's theories credibility among experts despite his lack of academic credentials. He has made seven trips to Africa, often with Julian Kerbis Peterhans, an adjunct curator at the museum and an associate professor of anthropology at Roosevelt University.

"Because I'm in the field a lot, I have the opportunity to see things people don't see when they're working on their graduate degree in front of a computer or in the biochemical lab," Gnoske says.

He has followed the Nile River through Uganda and the Tsavo River through Kenya, zigzagged over the grasslands of the Serengeti and the Masai Steppe, risen at dawn to scout along golden plains, and tangled with thorny acacia bushes to find lions. At the end of each trip, he returns reluctantly to Chicago, tanned to a golden brown and occupied by a crop of intestinal parasites.

During his recent trip to Kenya, his team had a special permit giving them virtually unrestricted access to the northern Serengeti and were allowed to drive offroad and camp outside designated campgrounds. Getting such open-access permits is one of Gnoske's talents, and he credits his childhood, growing up at Foster Avenue and Clark Street in Uptown, for his ability to negotiate successfully with a wide range of people.

"You learn certain social skills growing up in the big city, when you're dealing with different ethnic groups," he says. "If you don't want your lunch money stolen by the Latin Kings on your way to school, you learn how to work with them. It's an intangible skill that I never thought about until I started applying for permits."

His summer trip took him and photographer Harald Schuetz from high altitude to low, cool temperature to hot. Lying on top of a dilapidated Land Rover, he looked into the snarling faces of lions and recorded their sizes, mane lengths, locations and hunting habits. He saw about 100 of the beasts along his dusty route from west to east.

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Lions

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across the Serengeti.

The biggest and most aggressive lions were in Tsavo, midway through

the trip. The work day began at 4 o'clock, when the Milky Way still gleamed overhead. Having slept with one eye open "because elephants will walk right over your tent," Gnoske and his companions, who

included armed rangers from the Kenya Wildlife Service, struck camp and started driving. To find lions, they looked for buffalo, then circled the herd in hopes of spotting—or smelling—a kill site.

"It's amazing how fast things decay out there," Gnoske says. "Your nose is your best guide to the site of a kill. If we found lions, we'd move in close to make notes and take pictures."

At one typical site, his group came upon two females lying calmly in tall grass. Nearby was a male gnawing on a buffalo bone, and a second male, which became irate when his view of the females was blocked by the Land Rover and let loose "a roar so loud it made your ears hurt," Gnoske says.

The lion then went into classic attack mode, a familiar sight to the researchers. Whipping his tail back and forth, the beast turned to face his prey, including Gnoske. The lion bared his teeth and slowly lowered his body to the ground, emitting a sinister, low growl that Gnoske compares to the rumble of an idling Harley-Davidson. The last thing a person sees before being killed by a lion, Gnoske believes, is the transformation of the eyes. The orbs open amazingly wide and fill with darkness. When the pupils dilate, their blackness merges with the rings of black fur, like eyeliner, that surround a lion's eye socket.

"I saw that too many times," says Gnoske, who regained the safety of the Land Rover each time. "After a week of that, my knees were shaking for the rest of the trip. But we needed to get them to growl, or we couldn't take pictures of their teeth."

Gnoske and Peterhans have recently had a paper about man-eating lions accepted for publication by an academic journal. The Tsavo lions "are only alleged man-eaters at this point," says Gnoske, who found hair particles in the lions' remains but they were determined not to be human. "Col. Patterson, the British officer who supervised the bridge building at Tsavo, never saw these lions eat anybody."

Gnoske also plans to submit a paper about buffalo lions to one of the journals edited by Van Valen. Asked whether his journal would refuse to publish Gnoske because he lacks scientific credentials, Van Valen said, "Good heavens, no. I know it's sort of unusual, but this is what is supposed to happen. The work should be judged on its merits, regardless of who writes it."

Gnoske says he looks forward to peer review. He hopes his theories about buffalo lions will be considered seriously and critically. "If this shakes people up and makes them look at ideas they haven't examined before, that's great," he says.

"That's what science is all about." □