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# MANE

*Why do lions have manes? One scientist packs up her toys and goes looking for an answer.*

In the middle of Serengeti National Park in Tanzania, Africa, a lioness approaches two unknown males. One has a mane that is light—nearly the same color as the rest of his body. The other lion's dark mane stands out against his lighter fur. The lioness pads past the light-maned male. It's the one with the dark mane who's caught her interest. She pauses, watching him, then she slinks up to tickle his nose with the tip of her tail. She's chosen him as a mate.

Too bad he's just a bit, stuffed toy.

From the safety of her truck, Peyton West watches the lion through the view-finder of her video camera. She is thrilled with the lion's behavior. She'd suspected that female lions preferred males with dark manes—and this female certainly does!

photos courtesy of Peyton West

by Alison Pearce Stevens

# Attraction

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Eventually, the lioness realizes her new mate isn't going to return her affections. She wanders back to her pride. West and her assistant jump from the truck, bundle the two life-sized plush lions into the back, and return to camp.

## Why Do Lions Have Manes?

Lions' manes set them apart from other cats. But not all lions have them—only adult males grow manes. No two manes are the same. Some are very light. Others are nearly black. Manes can be long and shaggy, covering the shoulders and chest, or they can be short, covering just the head and neck. Some are little more than a mohawk.

Those differences got West wondering: Why do manes vary so much? For that matter, why do lions have them at all?

Over 140 years ago, the great naturalist Charles Darwin suggested that lions have manes to protect them from attack by other lions. It made sense. After all, it would be more difficult to bite a neck protected by a thick mat of hair. But West wasn't sure about Darwin's idea—if manes were so important in defense, shouldn't all lions have them, even females? So she set out to test it.

She figured that if a mane acted as a shield, it should cover the part of the body that was most likely to be injured in a fight. But when she looked through records of lion injuries, West found that the head and neck were not attacked any more often than other parts of the

## How Does Your Hair Grow?

Hair is made by special cells in the skin. The root of the hair sits in a small pit in the skin called a follicle. Hair itself is not alive—it contains no living cells. It is like a rope that cells make out of a protein called keratin. The hair-making cells are constantly sticking on more to the end of the hair inside the follicle, pushing the hair out. Hair gets its color from melanin, the same pigment that colors skin and eyes. More melanin in the hair makes it darker. Whether hair is curly or straight depends on the shape of the hair follicle—round follicles make round hairs (like spaghetti), which hang straight. Oval follicles make flatter strands, which curl. Animal fur is hair too—we call it hair if it's long, fur if it's short. Hair is always growing while an animal is alive. Hair-growing cells go through cycles of activity and rest, which can last from a few months to several years. When a follicle rests, the hair it was working on falls out, and a new hair starts. This means hair (and fur) is constantly growing and shedding. How long hair will get depends on the length of the follicles' growing cycle. A longer active cycle means longer hair.

body. She also found that neck injuries are no more deadly than other injuries, whether or not the lion has a mane. So manes did not appear to be very good shields, after all.

Why, then, do lions have them?

## The Show-Offs

Hair growth depends on many things: age, general health, what an animal eats, and hormones, chemicals that control growth and aggression. West wondered whether manes were saying something about the lion underneath. She asked a group of assistants to rate the length and darkness of lions' manes from photos, then compared these to data about the lion. She found that older and stronger males tend to have shaggier, darker manes. She also discovered that when a lion was sick or hurt, the longer, darker hairs in his mane fall out—a signal that the lion is unwell.

Being able to judge the health of a lion from his mane is useful to researchers, but West suspects that lions use this

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information too. Females like healthy mates who can provide food for cubs and protect them. Male lions prefer to avoid stronger males, who might injure or kill them in a fight. If a dark mane indicates a strong male, lions should pay close attention to that signal.


photos courtesy of Peyton West

## The Winning Mane

To test her idea, West needed to see how lions react to intruders with different types of manes. But lions are active at night, which makes them difficult to observe. And she had no way of knowing where an intruder might appear—what if she were on one spot, but all the action took place in another?

The solution was to use life-sized "dummies" with four fake manes: long and dark, short and dark, long and light, and short and light. The enormous stuffed animals had velcro around their heads, which allowed West to swap one mane for another. That way she could see what was most important to the lions: length, color, or both.

At dusk, West drove out to find lions and set up two of her dummies. Then she climbed back into her truck, played a recording of hyenas, and waited. It wasn't long before lions loped over the hill in search of the hyenas. When they spotted the dummy lions, they slowed. Keeping a wary eye on the plush intruders, they crept closer. Long before they got close to the dummies, the lions shifted to one side, so that they approached one of the two stuffed lions, rather than both together.

After many tests, West found that females almost always approached the dark-maned male. Males, on the other hand, usually angled up to the light-maned male. Mane length wasn't important to females—they went to either length if the color was the same. But males avoided long manes.

At long last, West had answered a centuries-old question: Why does the lion have a mane? It tells other lions what to expect.