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Colors Protect Our Lives

Nature is full of animals with incredible camouflage abilities. Some animals blend in so well with their surroundings that they are nearly impossible to spot. Others stand out with bright, beautiful colors. Colors not only show a creature's unique characteristics but also help its survival.

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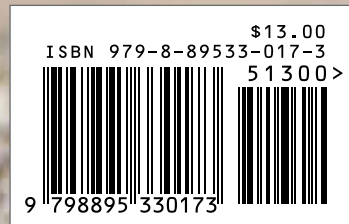
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GM Kids Series



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Colors Protect Our Lives



**People enjoy wearing jeans
regardless of the season.**



The primary material of jeans is cotton thread. Cotton thread is obtained from the cotton plant, and cotton is white.

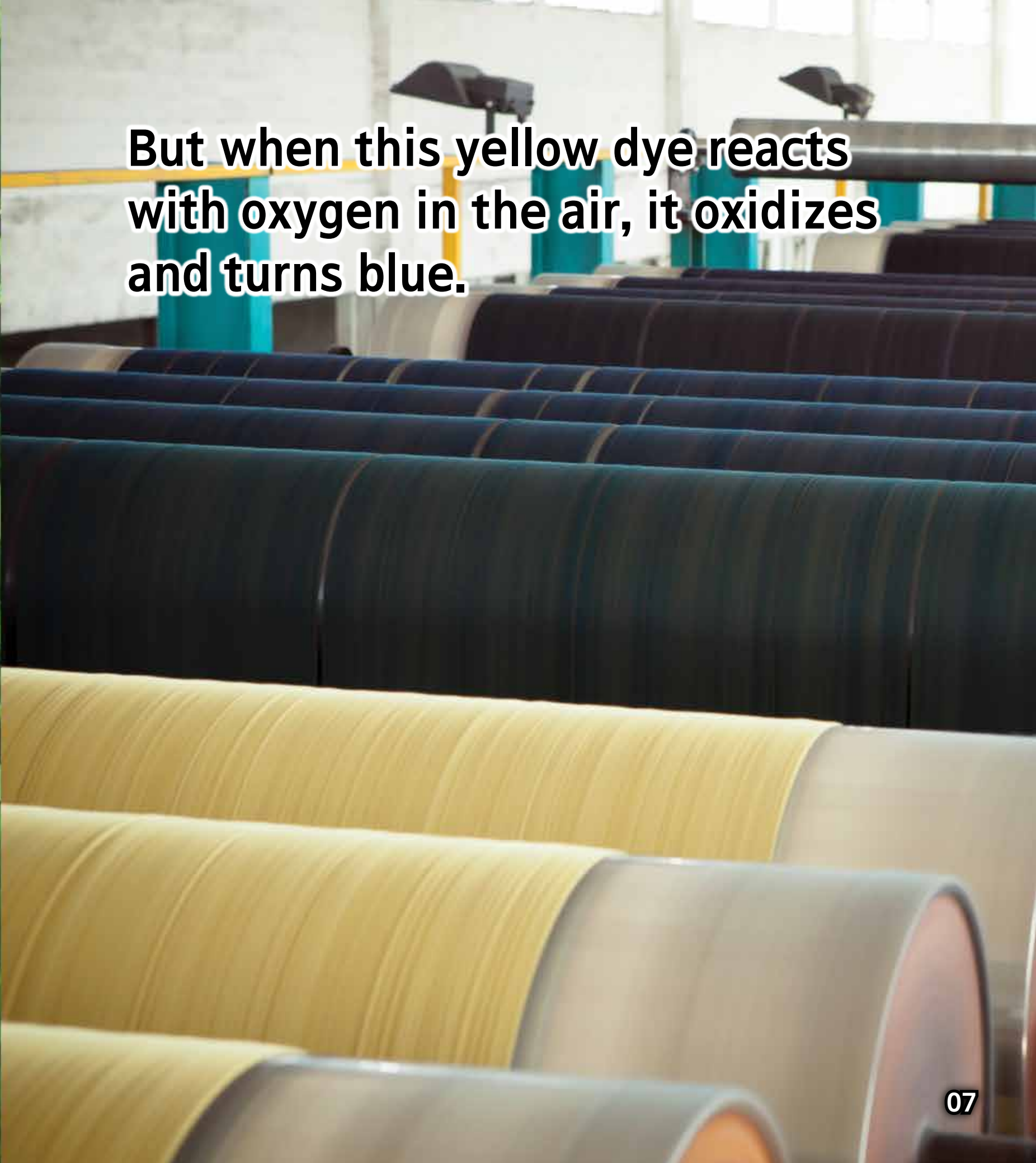
**But why are jeans made of cotton thread blue, not white like cotton?
The secret lies in the dyeing process.**





Jeans are colored with dyes from a plant called "indigo." When the fabric is first dyed, it actually turns yellow.

But when this yellow dye reacts with oxygen in the air, it oxidizes and turns blue.



**Sometimes, we can still see hints
of yellow on our jeans.
Now we know why!**



**Without the oxidation process,
jeans might have ended up being
called "yellow pants" instead.**

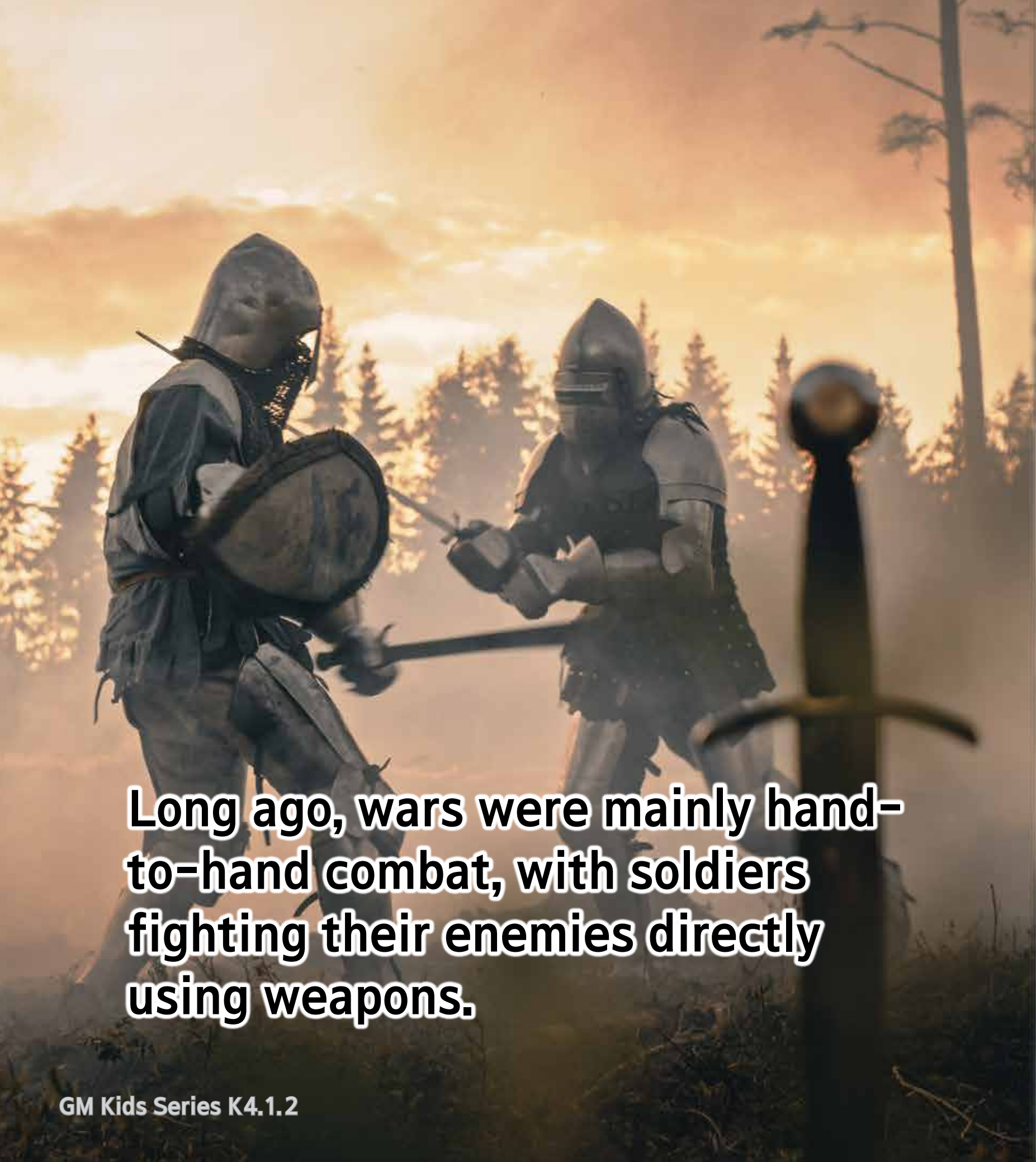
Military uniforms also have an interesting story behind their colors and patterns. Military uniforms have a "camouflage pattern."




This fascinating pattern, sometimes called "camo," is similar to the motifs on frogs.



Why do military uniforms use this frog-like pattern?

A scene from a medieval film showing two knights in full plate armor engaged in hand-to-hand combat. One knight is on the left, holding a sword and a shield, while the other is on the right, also with a sword. They are in a forest with tall trees, and the background is a bright, hazy sunset or sunrise. A large, dark, out-of-focus sword tip is in the foreground.

Since they fought so close to each other, it was important to easily tell friends from enemies.

A scene from a medieval film showing two knights on horseback in full plate armor. They are both holding long spears and are engaged in combat. The knight on the left is on a white horse with a red and black patterned surcoat, and the knight on the right is on a dark horse with a red and black patterned surcoat. The background is a hazy, overcast sky.

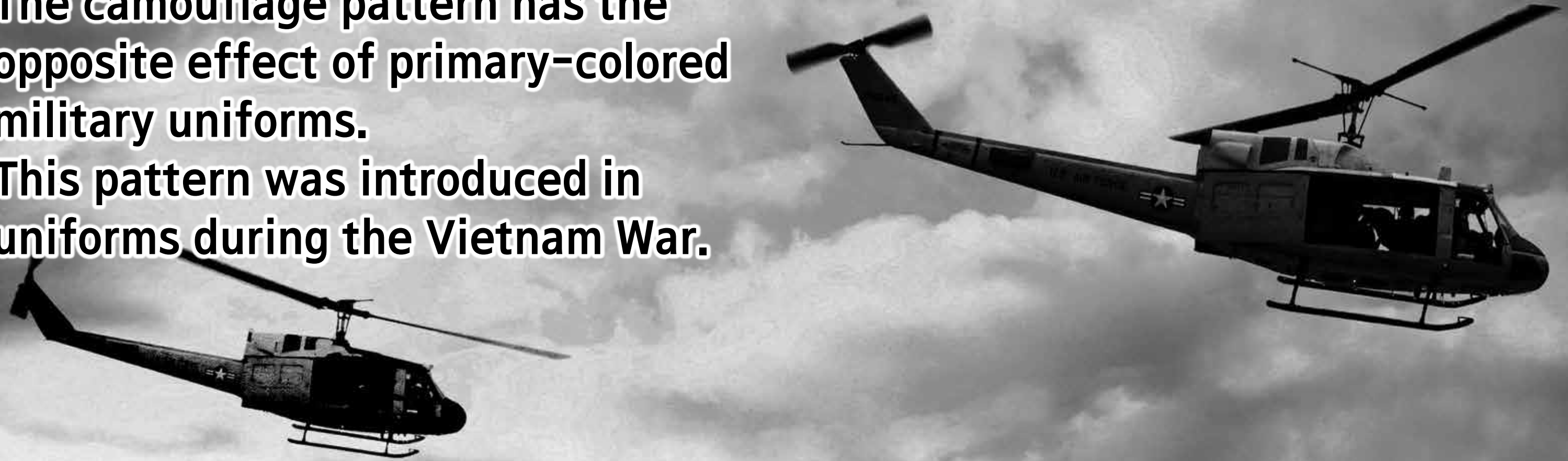
Long ago, wars were mainly hand-to-hand combat, with soldiers fighting their enemies directly using weapons.

It was also important to make the number of soldiers appear larger than it actually was.

That is why soldiers often wore bright-colored uniforms to stand out.



The camouflage pattern has the opposite effect of primary-colored military uniforms. This pattern was introduced in uniforms during the Vietnam War.





The dense jungles of Vietnam
required uniforms that could blend
into the environment.

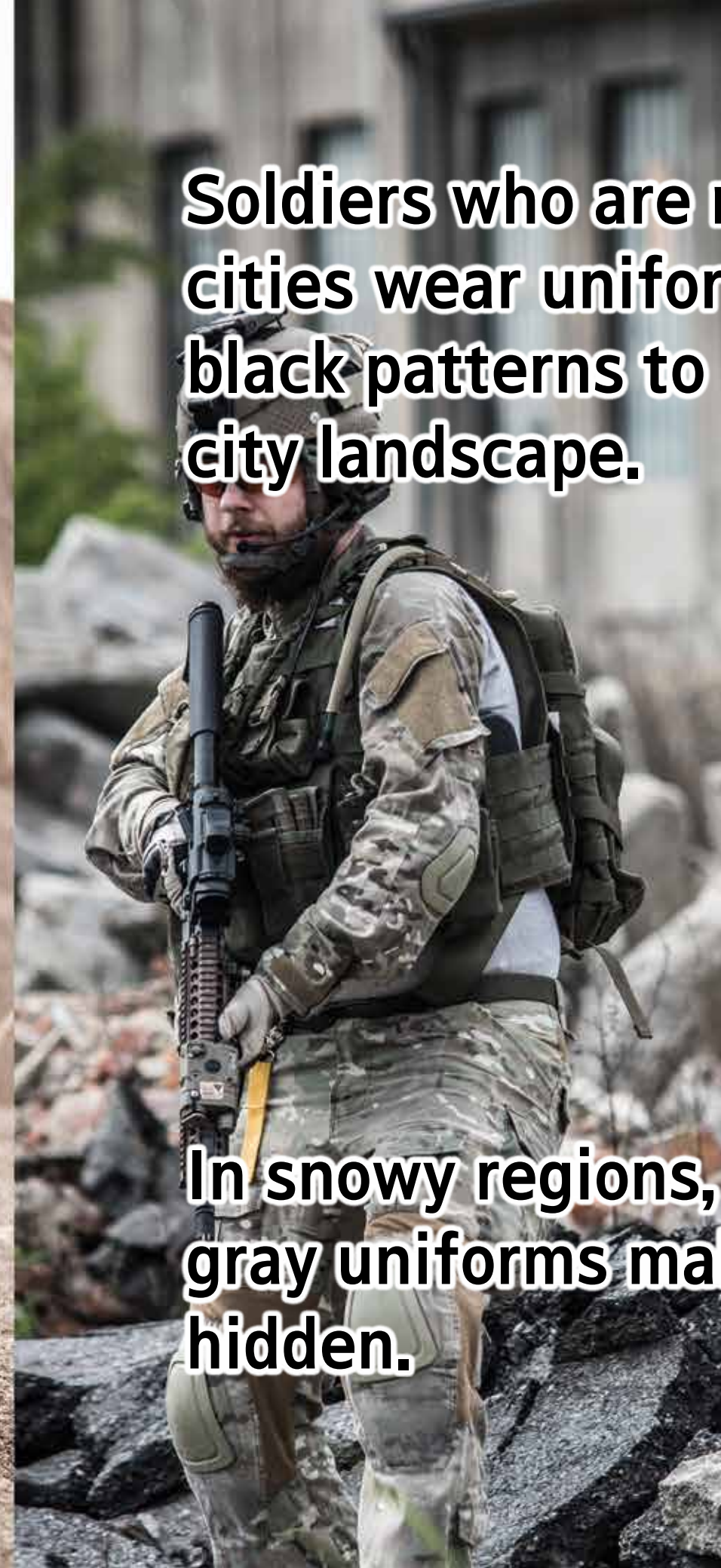
That is when camo uniforms
with green and black "woodland"
patterns were designed to help
soldiers hide.

Today, military uniforms use different camouflage patterns depending on the environment.



Soldiers in the desert wear uniforms with sandy and beige tones to blend in with the sand and rocks.

Soldiers who are mainly active in cities wear uniforms with gray and black patterns to blend in with the city landscape.



In snowy regions, white and light gray uniforms make it easier to stay hidden.



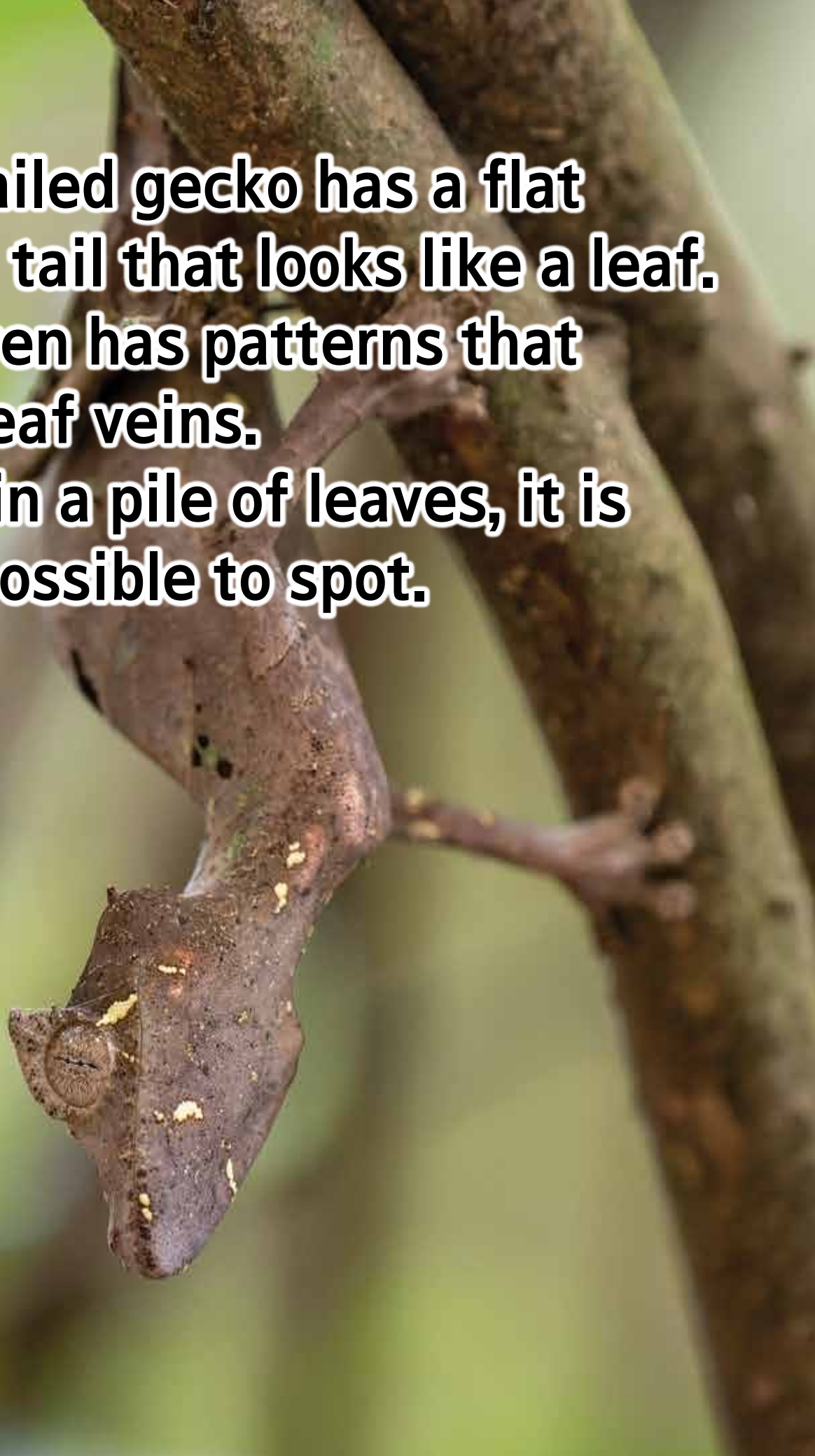
Camouflage colors can also be found in nature.

Nature is full of animals with incredible camouflage abilities. Some animals blend in so well with their surroundings that they are nearly impossible to spot.

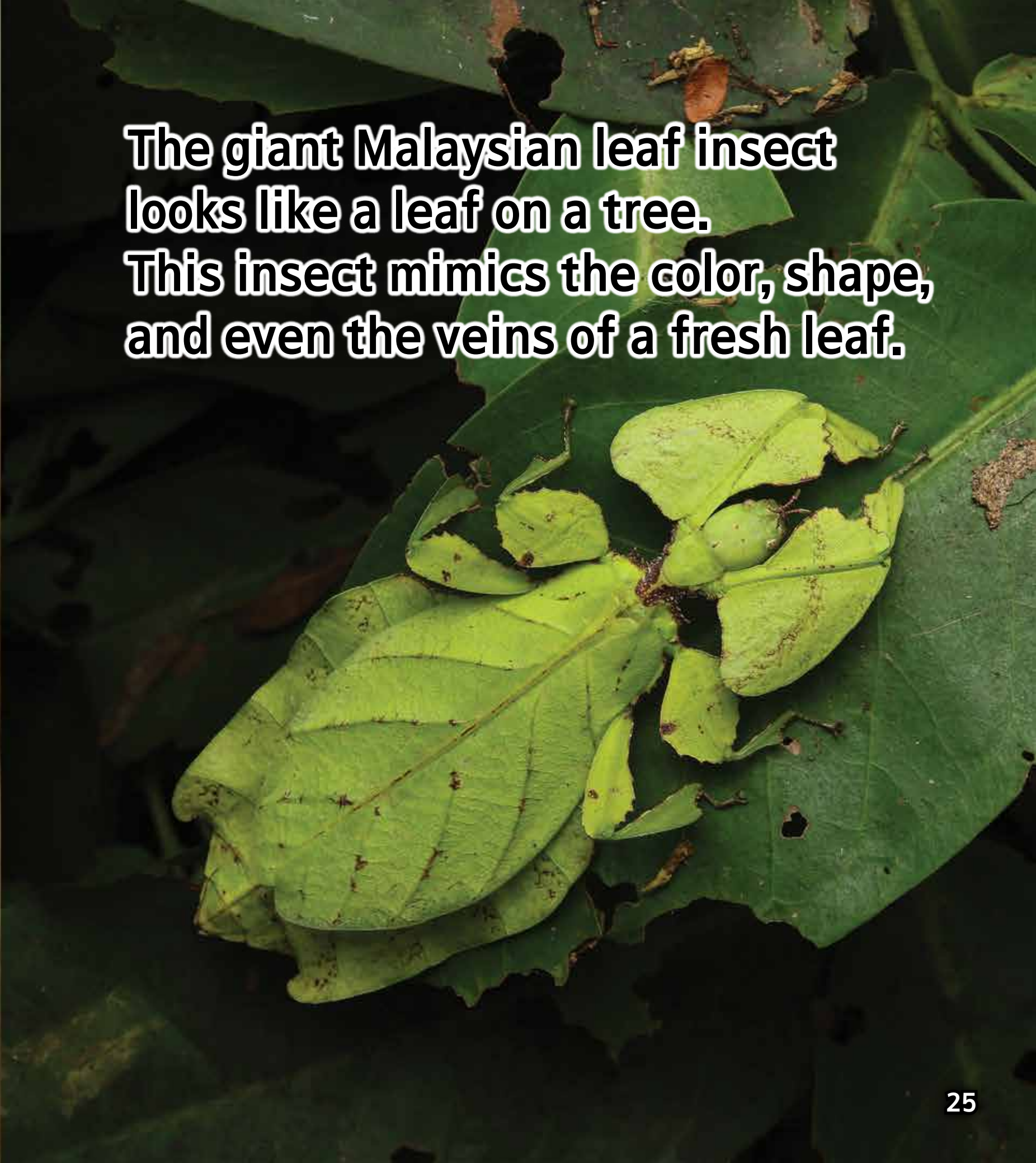
Others stand out with bright, beautiful colors. Colors not only show a creature's unique characteristics but also help its survival.



The leaf-tailed gecko has a flat body and a tail that looks like a leaf. Its body even has patterns that resemble leaf veins. When it is in a pile of leaves, it is almost impossible to spot.



The giant Malaysian leaf insect looks like a leaf on a tree. This insect mimics the color, shape, and even the veins of a fresh leaf.



The orchid mantis mimics the shape and color of the flowers it lives on. It hides on the flower, and when an insect approaches to get nectar, the mantis strikes to catch its prey.



The stick insect is a master at imitating branches. Its long, slender body and jointed legs perfectly mimic a stick, making it easy to hide on a tree branch.



The Arctic fox, living in the tundra region of the Arctic, changes the color of its fur with the seasons.

In the snowy winter, the Arctic fox has white fur.

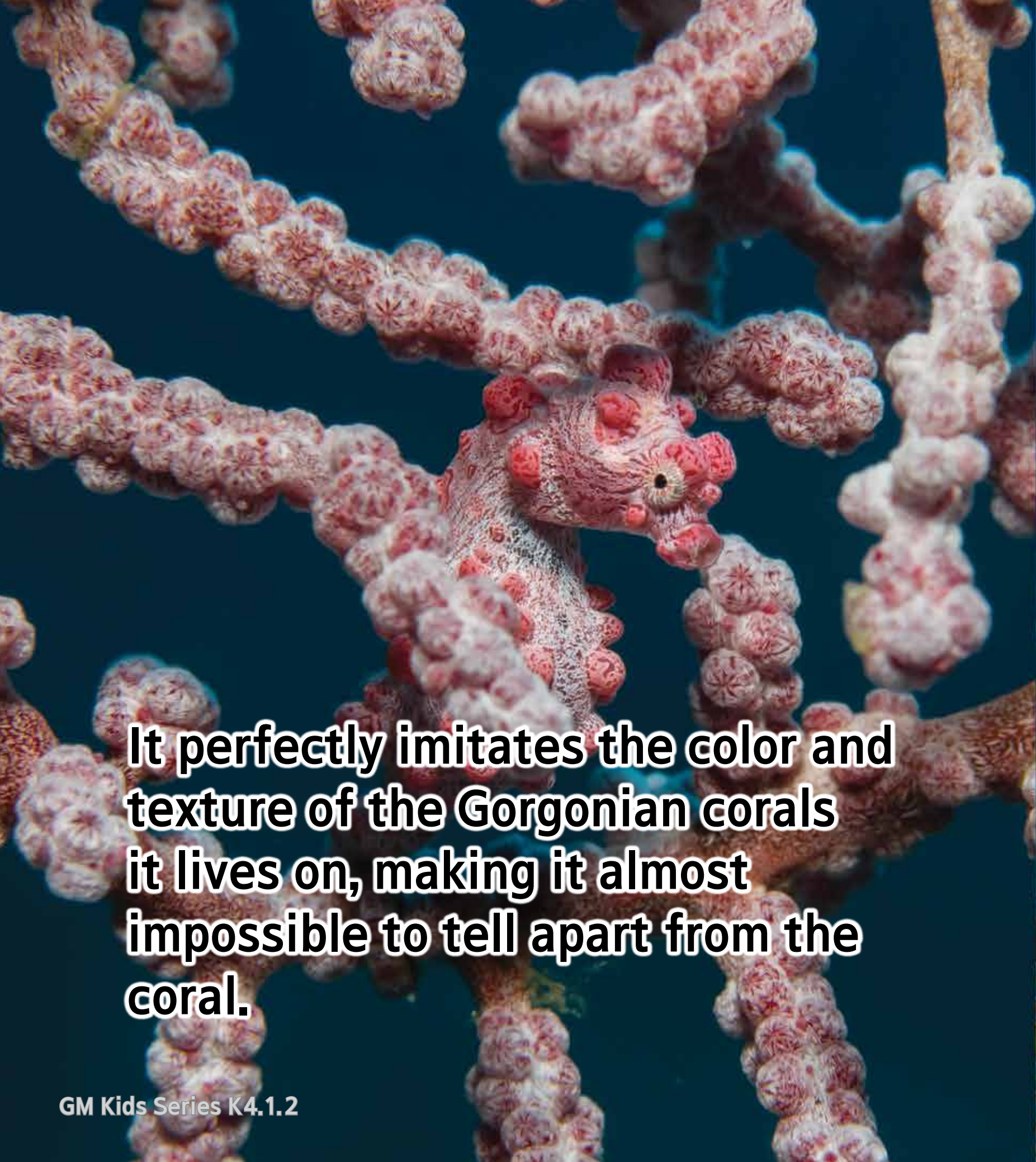


In the summer, when the snow melts and plants grow, it changes to brown or gray fur that blends in with the environment.

There are masters of camouflage in the ocean too. The stonefish has rough, spotted skin that makes it hard to see when it rests on rocks or coral.

The pygmy seahorse is a tiny creature that lives in the coral triangle of Southeast Asia.





Animals use various camouflage techniques to survive in their habitats.

It perfectly imitates the color and texture of the Gorgonian corals it lives on, making it almost impossible to tell apart from the coral.

Animals have developed these abilities to avoid predators and efficiently find food.



