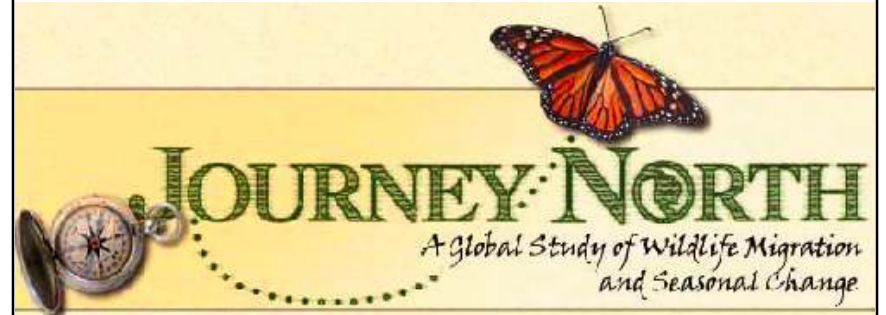




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Layout by Margaret Black



Butterfly Wings

What Can You Learn
by Looking Closely?



Photo © Wayne Kryduba

by Elizabeth Howard

Monarch wings are strong. They can carry a monarch over a thousand of miles. They can last over a hundred years if they're kept in a museum. But life is tough for a butterfly. Wings that begin as fresh as a flower, become faded, tattered, and torn over time. You can learn a lot about a butterfly by looking closely at its wings. Take a look!

All butterflies have four wings.



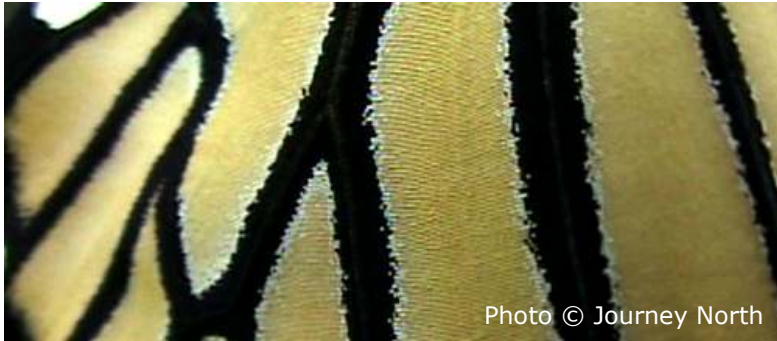
Each butterfly wing has a name.



This monarch is only a few hours old. Its wings are in perfect condition.



Now let's take a close-up view. The colors on a butterfly wing are actually made of tiny scales.



The scales overlap like the shingles on a house. The wings are like wax paper underneath.



Although this is not the wing of a monarch, the scales on monarch wings do look similar to this butterfly wing when magnified.

Monarchs eventually lose their color because the scales get scraped off over time. An old monarch looks like a ghost of its former self. When you see a butterfly, look carefully. You can get an idea of its age based on the condition of its wings.



Here is a fresh, new monarch and one that is about 7 months old.

What happens to butterfly wings?
Here is one example. A predator
tried to take a bite! Guess what
kind of predator might scratch a "V"
like this in the wing. (Then see the
answer below.)

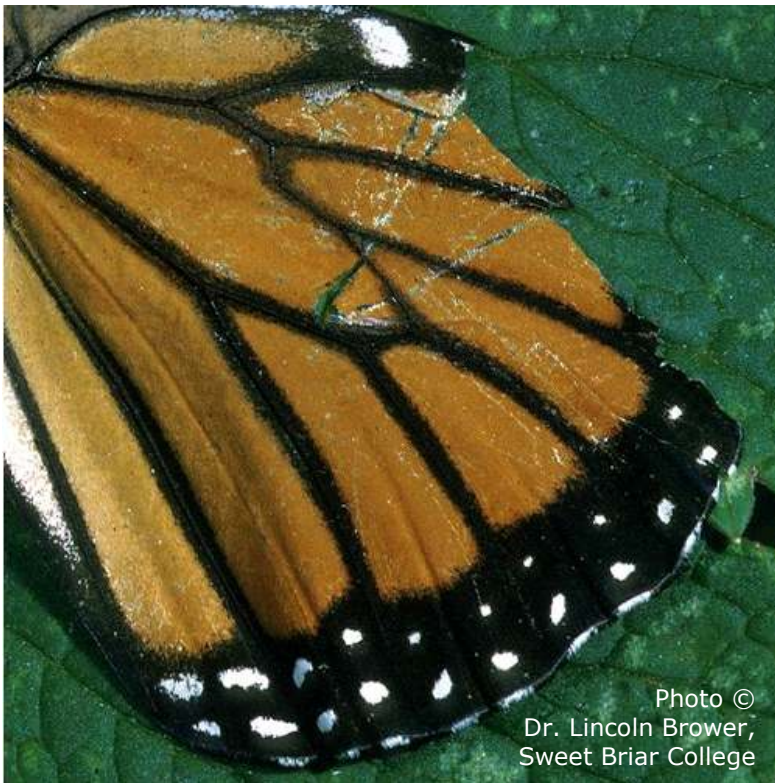


Photo ©
Dr. Lincoln Brower,
Sweet Briar College

*A bird bit this monarch's wing! You can see
the mark made by its sharp beak.*

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"I'm amazed at how worn some
monarchs look, with nicks, tears,
scratches and worn spots," says Dr.
Karen Oberhauser. "We saw some
butterflies in Mexico that were
missing over half of their wing
area, but they could still fly!"

What might cause scratches and
scrapes to the butterflies pictured
here?



*It's fun to inspect the wings of monarchs
that are wintering in Mexico. Imagine how
far these wings have traveled!*

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Now let's see some of the ways monarchs use their wings. Are you ready for pictures and clues?

The monarchs in this picture are using their wings in an important way. Try to guess, then read the answer below.

- Hint: The monarch at the bottom of the picture is *not* using its wings this way.



The monarchs in this picture are using their wings to hide! When their wings are closed the monarchs are camouflaged against the tree.

How can bright orange butterflies hide? This picture reveals the secret. Monarch wings are brightly colored on the upper side only. The undersides are a dull orange. Butterflies keep their wings closed when they are not flying or basking. That's how their camouflage works.



How are the monarchs in this picture using their wings? Try to guess, then read the answer below.



These monarchs are using their wings to bask in the sun! Dark colors absorb solar energy well. Basking is a way butterflies can warm their flight muscles. Monarch butterflies can't fly until their muscles are at least 60°F.

"Notice how many are holding their wings at the same angle. You can tell by the shadows that the sun is shining on the wings directly," says Dr. Lincoln Brower.

Butterflies use their wings to fly, to hide, and to bask in the sun. The scales on the wings let the butterflies shed moisture, so the wings aren't too heavy for flight. The orange color of monarch wings warns predators that monarchs are poisonous.

These are just a few of the many ways to look at butterfly wings. You can make observations like these yourself.

Try This: Go Wing-watching!

Here are questions you can ask when looking carefully at a butterfly's wings:

- Is the butterfly young or old?
- Is it a male or female?
- Has it had a narrow escape from a predator?
- Was it well fed as a young caterpillar? (Wings don't grow after a butterfly emerges, so size reflects diet as caterpillar.)

Also Try...

The Wing-wear Quiz!

<http://www.learner.org/jnorth/tm/monarch/WingWearQuiz.html>