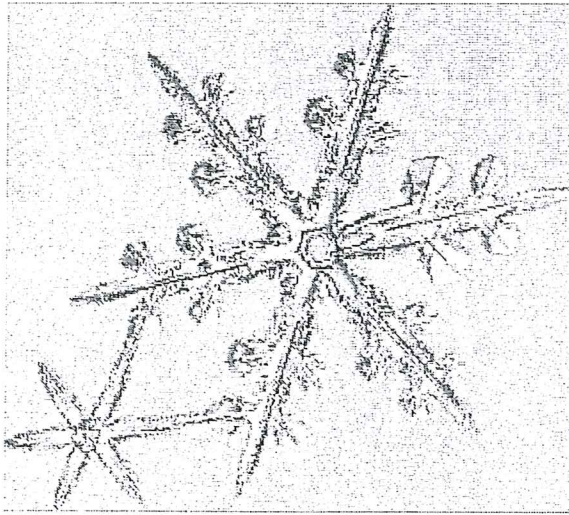


Cool Prize

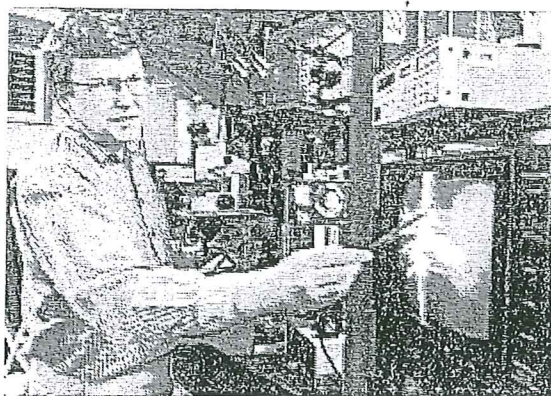
WR News talks to an award-winning snowflake expert.

Most people prefer to stay indoors during a snowstorm, but Kenneth Libbrecht is not most people. When flurries start drifting down from the winter sky, the scientist's work begins. Armed with a magnifying glass, a paintbrush, and a camera, he heads out into the cold.



Kenneth Libbrecht

There, Libbrecht waits for the picture-perfect snowflakes. Sometimes he waits for hours. Finally, the scientist spots what he's been looking for — beautiful, glittering ice crystals. As the shiny snowflakes fall, Libbrecht carefully catches them on his paintbrush. Then he sets the specks of ice on a cardboard backdrop. He points his camera and shoots.



AP Images

Kenneth Libbrecht studies a snowflake in his lab.

Libbrecht's sparkling photos have earned the expert the 2010 Lennart Nilsson Award. The honor is given to science and medical photographers around the world.

The scientist recently traveled to Stockholm, Sweden, to claim his award. "Kenneth Libbrecht's images open our eyes to the ... beauty of nature," say members of the awards committee. "With his photographs of snowflakes, [Libbrecht] turns mathematics [and science] into images of great beauty."

Winter Wonders

Libbrecht takes snapshots of both real and **artificial** snowflakes to learn more about how they get their shapes. Something that is artificial is fake.

Snowflakes form when **water vapor**, or steam, in clouds freezes. Frozen pieces of hydrogen and oxygen stick together to form **hexagons**. Those are six-sided shapes. Every snowflake is a hexagon. However, no two snowflakes have the same shape. Experts are not sure why. Libbrecht hopes he can solve the mystery with his camera.

"Right now, we don't really understand [how the ice crystals] grow," Libbrecht told *WR News*. "It's somewhat **intriguing** [or interesting] why they have the shapes they do."

What experts *do* know is a snowflake's appearance depends on certain weather conditions, such as temperature and humidity. The best-looking ice crystals form in 5 to 10 degrees Fahrenheit, Libbrecht explains. Those are the snowflakes he tries to capture with his camera.

"I'm always looking for just the right temperature," he says. "I'm looking for places that are cold and snow a lot."

Snow Days

Libbrecht has traveled the world in search of such places. He has taken photos of snowflakes in Alaska, Vermont, Canada, and even areas within the chilly Arctic Circle.

The work takes patience, Libbrecht explains. "It doesn't snow all the time, and when it does, the crystals aren't always good," he says.

Besides snapping pictures, Libbrecht also takes careful measurements of snowflakes. Once he's collected enough data, he returns to his lab in California to review his research. There, he compares his snowflake pictures with the artificial ice crystals he grows.

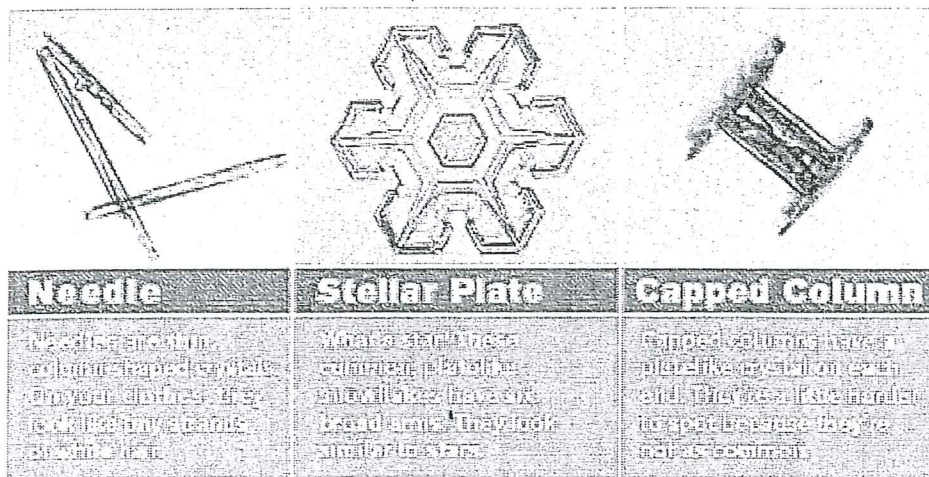
Since developing his interest in snowflakes, Libbrecht has taken about 10,000 images. This winter he plans to hunker down in the lab to study what he's gathered so far.

The scientist's snowy, outdoor adventures are far from over, though. Libbrecht hopes to one day photograph ice crystals in Siberia. The northern Asian region is one of the coldest places on the planet.

"I really enjoy going out and watching the snow fall and trying to see what I can find," he says. "It's a bit of a treasure hunt."

Frosted Flakes

Watch for some of these types of snowflakes the next time you walk through a winter wonderland.



Kenneth Libbrecht

Meet the Snow Man

Scientist Kenneth Libbrecht has a (snow) ball when flurries start to fall! Read to learn more about the scientist's snowy work.



Kenneth Libbrecht

WR News: Have you always been interested in snowflakes?

Kenneth Libbrecht: I grew up in North Dakota, so I did have some fondness of snow.

WR: What is your process for photographing ice crystals?

KL: When I find a good one, I'll [catch it] using a paintbrush. I then stick it under my microscope and take a picture. I repeat this hundreds of times!

WR: What advice do you have for kids who want to study snowflakes?

KL: You don't need a lot of fancy equipment. With a simple magnifying glass on a snowy day, you can really see quite a bit if you just stop and look.

Paired Text Questions

Texts

"Cool Prize"

Snowflake Bentley

Part 1: "Cool Prize"

1. According to the passage, why does Kenneth Libbrecht take snapshots of snowflakes?
2. In 2010 Kenneth Libbrecht received the Lennart Nilsson Award. What reasons did the awards committee give for honoring him?

Part 2: *Snowflake Bentley*

3. Why did Willie Bentley take photographs of snowflakes?
4. Did other people think that Willie Bentley's photos of snowflakes were important? Explain why or why not.

Part 3: "Cool Prize" & *Snowflake Bentley*

5. How are Kenneth Libbrecht and Willie Bentley alike?
6. Why are the snowflake photos taken by Kenneth Libbrecht and Willie Bentley important?