WINTER'S ICY JEWELS

"Young Bentley" courtesy of National Life Insurance Co.

Have you ever wondered how snowflakes are formed, or marveled at their beauty? Wilson Bentley did, and looked forward to each new storm with anticipation and excitement.

"Snowflake" Bentley, as he was later nicknamed, grew up in Jericho, Vermont, where he was born on his family's farm in 1865. Always full of wonder about the world around him, Wilson became fascinated with snow at the age of fifteen. It was then that his mother gave him a **microscope**, an instrument that opened up a new world for him through magnification, one that would change the course of his life.

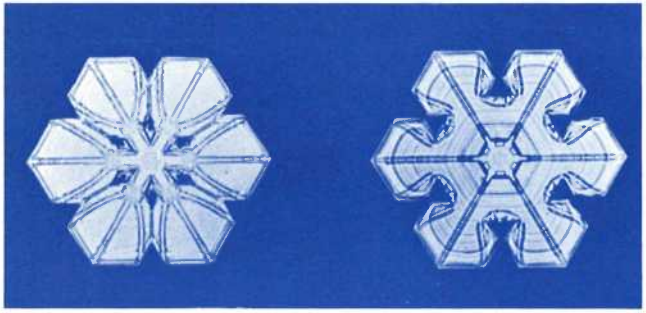
During the first snowfall after receiving the new gift, Wilson caught a flake of snow and looked at it under the microscope. What he discovered was an **intricate** and beautiful **hexagonal** star! He wanted to capture its beauty in order to share it with others. For almost three years he tried drawing the flakes that he saw under his microscope, but he was unable to draw their intricate patterns before the flakes began to melt. Wilson had set up a work space for himself in the family's ice cold woodshed. It was necessary for him to work in these cold temperatures to preserve the flakes. If he so much as breathed near them, his warm breath would distort their shape, or completely melt them. No doubt having to wear bulky mittens did not help his drawing skills. Despite his lack of success with his drawings, he did not give up.

Much to his surprise his parents gave him the thing he had been dreaming of—a camera. He fitted it to his microscope and took it out to his workshop. As the first flakes began to fall, Wilson collected them in the usual way. He held out a receiving board (a board covered with black velvet) and let the flakes fall on it. Then, very carefully, he selected the flake he wished to magnify, and lifted it off the board with a small splinter of wood. Very carefully he would place the flake onto a slide. He was then ready. However, this day was different. For the first time Wilson hoped to photograph the snowflake. His first attempts were unsuccessful, but with determination he continued until at last he did

it! Wilson perfected his techniques and spent nearly fifty years making **photomicrographs**. In all his many years of work with snowflakes, Wilson produced thousands of **plates**, of which no two were duplicates. Each snowflake was one of a kind, except for its standard hexagonal shape. Through steady work, Bentley won worldwide recognition as the first person to photograph snowflakes.

But how do **snowflakes** form? First, they need a seed, or **nucleus** to grow around. This seed may be a particle of dust. Moisture in the atmosphere collects and freezes to this nucleus forming a snow crystal, which when joined with other snow crystals, forms a snowflake. Changes in the temperatures and humidity, through which the snowflakes fall on their way down to earth, effect the shape of the flakes. The varieties, as seen in Bentley's photos, are limitless since no two snowflakes are alike.

If you have never taken a close look at a snowflake, be sure to take advantage of the winter storms this year. All you need is a board that has been painted black or has been covered with a dark colored fabric (a dark coat sleeve will work too); a



hand lens or magnifying glass; and a wintry day with fresh falling snow. According to Bentley, the best snowflakes are the ones that come in from the west in a low pressure system. He also said that some of the tiniest flakes have the nicest designs, where as the big, fluffy, wet snow consists of lots of broken flakes stuck together. It will take some time and practice, and a little patience, but you will be able to spot and examine many a lacey design that is unique to itself! And maybe you too, like Wilson Bentley, will not want to miss a single snowstorm and the icy designs they produce.

VOCABULARY

microscope — instrument that makes magnified images of small objects through lenses

intricate — complex

hexagonal — any six sided figure

photomicrograph — a photograph made through a microscope

plate — a light sensitive piece of glass on which a photographic image is recorded

snowflake — many separate crystals of snow, each formed individually and then attached together

nucleus — central core around which other things are grouped