Bentley, Wilson Alwyn (1865–1931)

Wilson Alwyn Bentley was an American farmer and amateur scientist known for his study and photographs of snow crystals.

Born on February 9, 1865, on a farm in rural Jericho, Vermont, he was educated at home by his mother, a former schoolteacher, until the age of fourteen. As a teenager, Bentley developed an interest in microscopy, and he began studying the microcosmic world of nature through the lens of his mother's microscope.

Of particular interest to him were snow crystals, more commonly known as snowflakes and typically made up of an aggregation of many crystals. Initially, Bentley made sketches of the snow crystals he observed. Later, after acquiring a new microscope and a bellows camera, he began experimenting with taking photographs through the microscope. On January 15, 1885, at the age of nineteen, Bentley created the first successful photomicrograph of snow crystals. Over the next thirteen years, he created more than 400 photomicrographs of crystals he collected during snowstorms. He worked outdoors and developed a technique in which he moved quickly to avoid melting the crystals.

Bentley's work went largely unnoticed outside his local community, where he was often misunderstood and even ridiculed. But, in 1898, he published his first of many articles in *Popular Scientific Monthly.* His work also appeared in *National Geographic, Popular Mechanics,* the *New York Times Magazine, Life,* and other popular publications. In *Monthly Weather Review,* a science journal published by the U.S. Weather Bureau, he detailed hypotheses of snow crystal formation, relating it to temperature and storm circulation.

During the summer, Bentley turned his attention to raindrops and dew formation. Ahead of his time, he was one of the first people to make detailed studies of raindrops, including their size, formation, and relationship to lightning in thunderstorms. He was also an avid observer of the sky and took detailed observations of local weather conditions three times a day, as well as appearances of the aurora borealis.

Yet it was for his detailed and striking photographs of snow crystals that Bentley was best known. By 1920, he had developed a reputation as "the Snowflake Man" and "Snowflake Bentley." That year, he was elected a fellow of the newly founded American Meteorological Society (AMS), and, in 1924, he received the first research grant ever awarded by the AMS. As demand for reproductions of his photomicrographs grew, he worked under the direction of William J. Humphreys of the U.S. Weather Bureau and spent several years organizing what had grown to nearly 4,000 images, mostly of snow crystals. More than 2,400 images were published in *Snow Crystals* in 1931.

Although he would live to see his life's labor receive the recognition it deserved, he would not have long to savor it. Wilson Bentley died from pneumonia on December 23, 1931, at the age of sixty-six, after walking home in a snowstorm.

Sean Potter

Sources

Bentley, Wilson A., and W.J. Humphreys. *Snow Crystals.* 1931. Reprint, Mineola, NY: Dover, 1962.

Blanchard, Duncan C. *The Snowflake Man: A Biography of Wilson Bentley.* Blacksburg, VA: McDonald and Woodward, 1998.

Climatology

Climatology is the scientific study of climate. The field is closely related to, but differs from, meteorology in that it is concerned with long-term averages of the physical properties that make up Earth's atmosphere rather than the study and prediction of individual atmospheric phenomena or day-to-day weather.

Traditionally, climatology has involved the descriptive analysis of observed meteorological variables at particular geographic locations over specific time periods. In this sense, climatology may also refer to the description of a location's climate. The climatology of a particular location might include the average and extreme values of temperature, precipitation, and other variables that make up that location's observational weather records. Such quantitative description