FORSCHUNGSPROJEKT

„Picturing Snowflakes“

FLORIS WINCKEL

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Why study snowflakes?

For his doctoral project, Floris Winckel looks at how snow crystal science developed across the northern hemisphere since the beginning of the 17th century. Carrying out this research in the context of the International Doctoral Program “Rethinking Environment”, he aims to uncover how scientific knowledge of nature is shaped by human practices, values, and the environments they work in.

The eclectic journey of snowflake science

What do a 17th-century astronomer in Prague, an 18th-century doctor in Middelburg, a 19th-century whaler off the coast of Svalbard, and a 20th-century farmer in Vermont have in common? They all studied and wrote about snow crystals at some point in their lives, contributing to a large and varied body of work on the science of snowflakes.

This research project is the first to systematically explore this body of work, revealing the links between the study of snowflakes and our knowledge of the natural world writ large. It focuses on the practices of observing and visualizing these objects, and their relationship to different environments. The narrative that emerges is one of change and continuity. On the one hand, environments of study constantly shifted: from homes to remote places, from the atmosphere to the laboratory, snowflakes have been observed in a variety of spaces. Each space has played a different role in shaping the knowledge of these objects. On the other hand, there are remarkable continuities throughout this history. Observers justified their studies with reference to the intellectual value of learning about these small but complex objects. They marveled at their beauty and sought to reproduce it. They looked for ways to turn a frivolous object into a useful scientific tool. Analyzing the value people saw in these objects is informative for understanding the broader ways in which we make knowledge about our environments.

Aligning with the International Doctoral Program’s emphasis on “transforming disciplines” and “transforming science”, this project treats the science of snowflakes as a historically trans-disciplinary area of research. Throughout history, these objects have managed to catch the attention of scholars of various ilks, as well as travel seamlessly between the sciences and arts. To do justice to such variety, this history of science project draws inspiration from other disciplines represented in the International Doctoral Program, including environmental history, philosophy, anthropology, as well as the arts and climate sciences.

What snowflakes can teach us

Their size makes them visible to the naked eye but difficult to study in detail, placing them on the interface between human and instrument-aided vision. Their ephemerality makes them difficult to preserve, elevating the importance of images and artificially controlled environments. Their apparent frivolity underlines the need to pay attention to the ways in which observers have sought value in their studies of nature. Ultimately, the snowflake offers a compelling opportunity to examine how we make knowledge about the natural world, and to experiment with the ways in which the history of natural science is usually written.

“Bentley with camera”
Wilson Alwyn Bentley photographing snowflakes on his farm in Vermont, before 1930.

Mehr zum Elitestudiengang:

www.elitenetzwerk.bayern.de

https://rethinking-environment-idk.de/