



### No Duplicates

► SNOWS have fallen on the earth during millions of winters—millions upon millions of tiny frozen six-pointed stars in each storm. Human imagination simply balks at the job of calculating how many snow crystals there have been during the planet's long history. Yet, scientists assure us, no two of them have ever been exactly alike.

This declaration, to be sure, is based on a very small sampling. Only a few thousands of snow crystals have ever been actually photographed through a microscope. But it is true that among these thousands of permanent and detailed records no duplicates exist.

It is fascinating to go through the pictured pages of the classic book on snow crystals by Bentley and Humphreys, with its pages upon pages of magnificent snow photomicrographs,

comparing one picture with another. Sometimes you think you almost have twin portraits—but “almost” is as close as you ever get. Always some little detail in size, or lacy sculpturing, or delicate surface marking defeats the search for absolute identity.

It should be possible now to put this no-duplicates dictum to the test, since scientists have shown us how to produce snow crystals at will, and under controlled laboratory conditions, by dry-ice “seeding” of masses of super-cooled water vapor. By using the same degrees of dampness and cold, and the same quantities of dry-ice powder of uniform particle size, it should be possible to

produce quantities of snow crystals of the same general types at least, and perhaps approaching identity in shapes and patterns even if not quite attaining it.

Probably the best chance of finding twins among snow crystals would be found under conditions simulating the deep cold and low atmospheric pressure of the upper snow-forming levels of the air. Natural snow crystals from these severe upper reaches have a Doric simplicity of outline and patterning, as compared with the Rococo filigree-work of the branched and re-branched stars that form in the denser, less cold clouds that form low ceilings on gray winter days.

*Science News Letter, January 3, 1948*

METEOROLOGY

## Snow and Blizzards Made

Climatic chamber of Army Signal Corps, as large as four-room house, has temperatures at 40 degrees below zero and continuous artificial snow.

### See Front Cover

► ACTUAL snow on a continuous basis is being made by man in climatic test chambers of the Army Signal Corps at Fort Monmouth. It is made in sufficient quantities to test military equipment under simulated Arctic conditions, and is believed to be the first accomplishment of its kind on record.

By the use of blowers, made-to-order blizzards are developed. The climatic test chamber used is as large as a four-room house and can hold a truck and trailer. Temperatures can be maintained at 40 degrees below zero Fahrenheit by a giant refrigerator plant. One of these chambers is shown on the cover of this week's SCIENCE NEWS LETTER.

A careful pre-conditioning of the test room precedes the manufacture of snow. This period is of sufficient length to remove much of the heat stored in the inside air and the building itself. Steam at high temperatures is then injected into the room to create an atmosphere saturated with moisture and containing water vapor in suspension. This forms a visible cloud or fog.

This cloud rapidly cools to a temperature below the freezing point of water to form what is called a super-cooled cloud. Dry ice does the rest. When the super-cooled cloud is at a temperature under 10 degrees above zero, a small bag of dry ice, about the size of a finger

tip, is shaken in it. When the cloud reaches a temperature near minus 40, the water vapor crystallizes, forming literally billions of microscopic snow crystals. These unite to form snowflakes that fall to the floor and blanket it.

*Science News Letter, January 3, 1948*

MEDICINE

### Tonsil Removal Doesn't Predispose to Polio

► A tonsil operation does not appear to predispose a child to poliomyelitis, a study at the University of California Medical School indicates.

Dr. Paul M. Pederson, aided by Drs. E. B. Shaw and A. Palermo, said their study of 492 cases hospitalized between 1941 and 1945 in the County Hospital and the Children's Hospital at San Francisco indicated no material difference in the ratio of polio to recent tonsillectomy and the incidence of polio in the general population.

Dr. Pederson found, in the 34 counties from which the patients came, that there had been a total of 2,057 cases of polio and 57,796 known tonsillectomies in the same period of study.

The incidence of poliomyelitis to general population in the epidemic year 1943, for example, was one to 1,960, while the incidence of polio following tonsillectomy for the same year was one to 1,782, or five cases in 8,910.

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