

often been copied for fabric designs, jewelry and ornamentation.

It is actually snowing at all times high in the atmosphere—even on summer days over the temperate zones or over the tropics. In cirrus clouds 60,000 to 70,000 feet high, ice crystals form which may melt or evaporate before they reach the ground. Everlasting snow keeps brushing against mountain peaks poking high in the air, such as Mt. McKinley, Mt. Fujiyama, or Ruwenzori, the "Mountains of the Moon" which lie near the equator in east Africa.

Snowflakes usually fall individually, but if the temperature is just above freezing, they might collide and cling together as they fall, sometimes forming a flake four inches in diameter. On reaching the ground, the flakes gradually lose their crystal shape and become ice granules.

Eskimos have a subtle appreciation for snow forms that shows up in their language. They seldom say the simple word "snow," preferring to use specific names for specific types of snow—soft snow, snow crystals, falling snow, snow freezing as it falls, deep snow, snow for making houses, drifting snow, uneven snow after drifts, and many other types of snow.

The idea of a transient beauty, forming once, only to be lost forever in a few minutes is strangely appealing. But a method has been perfected by Vincent J. Schaefer, research consultant in Schenectady, N. Y., to preserve these fragile crystals.

The basic equipment needed is well-chilled black velvet, glass slides, a solution of polyvinyl formal resin dissolved in

ethylene dichloride, which can be bought at a pharmacy, and patience.

The method is simple: catch the flakes on the velvet, dip a glass rod in the solution and put a drop onto a slide. Immediately touch a captured snowflake gently with the rod and transfer it to the drop on the slide. The solvent evaporates in a few minutes, leaving the resin film covering the crystal without distorting it.

Ice crystals from the refrigerator can be preserved also, as well as the frost that creeps across window panes in delicate patterns of ferns, fungi and Christmas trees.

Winter Peace

Winter offers other spectacles of beauty that have long been regarded as symbols of renewed hope and life at a time when the world seems dark. High in the branches of oak trees hang bunches of mistletoe with shining green leaves and white translucent berries.

Winter is the season when the female holly tree bears her young—clusters of gay red berries. Across the snowy fields, the strange plant called the Christmas rose puts forth seven or eight white roselike blooms tinged with pink—not a rose at all, but a member of the crowfoot family.

The splendor of iridescent crystals on an iced evergreen; the shining of bright stars at night through frosted bare branches; the exquisite shapes of snow, frost and ice upon silent trees reflect nature's own profound peace and beauty—unmarred by noise and clutter of civilization.

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AGRICULTURE

New Aid For Crops

► FARMERS ARE URGED to save their steps and use the air to count their sheep, watch their crops or inspect their forests.

Modern technology offers man new benefits in surveying his lands by taking photographs from the air.

Aerial photography can greatly benefit agriculturists, foresters, soil specialists and agricultural geographers—if the technique is handled properly, said Prof. Robert N. Colwell of the University of California, Berkeley.

To the trained eye, photographs can show the amount of vigor of crops growing in each field, he told the 12th annual meeting of the Agricultural Research Institute in Washington, D. C.

Loss of vigor due to black stem rust on wheat or oats, or blight on potatoes, or frostbite on artichokes can be indicated on photographic film sensitive to the near-infrared part of the spectrum—at wavelengths ranging between 700 and 900 millimicrons.

Infrared photography is excellent for detecting the loss, but not for determining which agent is responsible for the loss.

Agricultural soils can be classified and mapped by this method. Photographed landforms, drainage and erosion patterns and vegetation often give valuable clues to aid the soil chemist in his field work.

Aerial photography can determine certain

diseases on cereal crops, tomatoes, cotton, orange trees, peach trees and pear trees; as well as the extent of flood water damage to crops, houses, barns, machinery and roads; and the damage on crops and grasses caused by drought.

Horses and cattle on the open range can be counted on aerial photos, even at scales as small as 1/20,000—provided they are in full sunlight and not hidden. Sheep, goats, pigs and other smaller animals can be counted, but on larger photographic scales. Color films are being used to determine how plump these animals are, so the farmer can plan taking them to market.

Surveys of forest ranges can be made with aerial photography, stated Dr. Colwell, who stressed the dangers of trying to use this system without knowing how. Many workers, he said, have had "miserably unsuccessful" first efforts because they have expected too much from the technique and have known too little of how to use this great boon to modern agriculture.

Man has been making aerial photographs for more than one hundred years—first from balloons and then from aircraft.

But the technique was not used for agriculture benefits until 25 or 30 years ago, he said. Since then there has been a steady increase in the amount of useful information these photographs give agriculturists.

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AGRICULTURE

Plant Diseases May Be Stored In Seeds

► TINY SEEDS, those compact storage houses for future generations of plants, also can store many plant diseases.

The disease is usually a fungus but occasionally a bacterium, nematode or virus, stated Dr. W. F. Crosier, department of seed investigations of the University of Cornell at Geneva, Switzerland.

If the disease is located deep within the seed, it is protected from damage and drying and can live as long as the embryo. If it is borne immediately underneath the seed-coat, the disease may die within one or two years, said Dr. Crosier who has been working on seeds of sweet peas, asters, bells of Ireland and many other flowers.

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AGRICULTURE

Valuable Fruit Tree Stock From Russia

► BUD SHOOTS from wild apple, pear and cherry trees were some of the new fruit tree stock brought back recently from Russia by two United States horticulturists who were the first American plant explorers allowed in Russia since 1929.

Drs. John L. Creech and Donald H. Scott of the U.S. Department of Agriculture also brought back cultivated varieties of many fruits that can stand exceptionally cold weather. The wild and cultivated fruit collections should prove valuable to U.S. breeders in their search to develop harder, more drought-resistant root stocks.

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Nature Note

► OF ALL the familiar Christmas greens, none is appreciated quite as much by all generations as the semiparasitic evergreen bush with white berries called the mistletoe.

With the holly, it was the favored plant for the winter celebration of the Druids, who originated the term "Yule." Later, Christian missionaries made mistletoe a part of the celebration of Christmas.

In ancient days the mistletoe was a symbol of the mysteries of religion, because the plant itself was mysterious even to the wise men of the day. It grew on other trees, with no root that could be seen; it had no flowers and yet bore fruit; no one could tell how it got from one tall tree to another.

Nowadays botanists know that it is a semi-parasitic plant robbing from its host; it has tiny inconspicuous yellow flowers that become white berries, and its seeds are transported from tree to tree because the sticky pulp found in the berries sticks to the beaks of birds.

Although scientists have exploded the mystery of the mistletoe, they adhere to pagan tradition when they see a pretty girl under mistletoe at Yuletide.

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