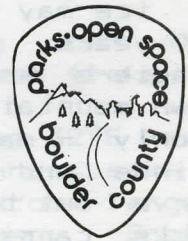


WINTER
1986



Nature Detectives

by

Ann Cooper, Ann Armstrong, and Carol Kampert

"Who's been here?" "What were they doing and why were they doing it?" "When did it happen?" *Nature Detectives* try to answer questions like these by looking for clues and evidence of the activities of creatures in the outdoors.

Have you ever wondered about teeth marks on the trunk of a tree, or strange footprints in the snow or mud? If you have, then you are already a nature detective.

THEME:



SNOW & ICE

As White As Snow

"How white is it?" "As white as snow," is the common reply. But is snow always white?

Each crystal of snow is as clear as glass, but snow flakes massed together look white because they reflect light from all their crystal surfaces. Snow can sometimes be colored too. Not just dirty from street-splashings, but a delicate pink! Up in the mountains as the winter snows melt, some of the last snow banks become rosy pink with growing 'algae', tiny organisms with pink colored cell walls. Sometimes called watermelon snow, this pink snow even smells a bit like watermelon, but is never safe to eat - it collects radiation, and causes stomach aches.



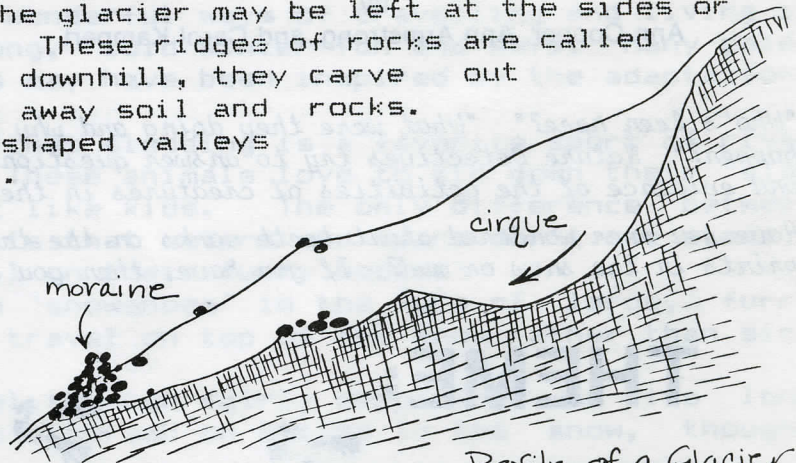
Glaciers...Rivers of Ice

Glaciers form when winter snows are deep and summer days are not warm enough to melt all of the snow. Star-shaped snowflakes fall on the mountain, but gradually the points wear off each snowflake, and they clump together. New snow falls on top of the old, pushing down on it until a solid sheet of ice forms on the bottom. The changing of snow to ice may take a long time - in a very cold place it may take over 100 years.

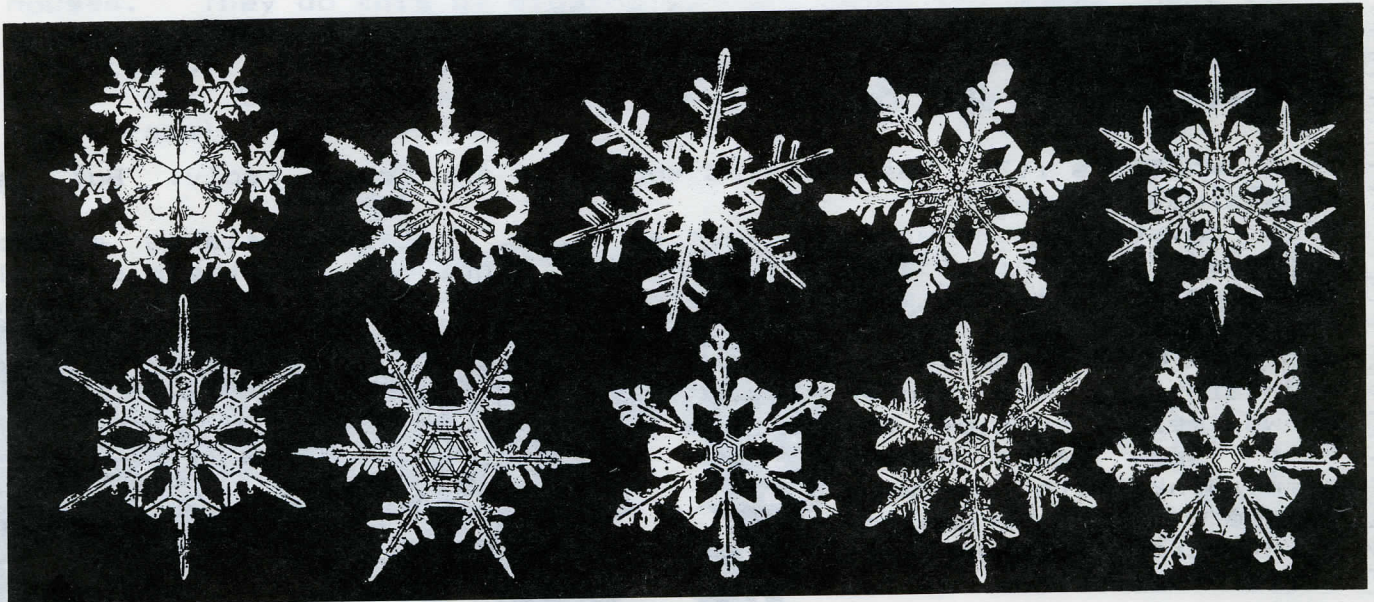
Glaciers are frozen rivers of ice but instead of tumbling and rushing down mountainsides like a stream, the glacier's ice moves heavily and slowly - maybe only half an inch a day! As the glacier moves, it grinds and scours out rocks and carries them along. Young glaciers carve out bowls on the sides of mountains known as cirques. Piles of rocks carried downhill by the glacier may be left at the sides or at the end as the ice melts. These ridges of rocks are called moraines. When streams rush downhill, they carve out V-shaped valleys by washing away soil and rocks. Glaciers carve broader, U-shaped valleys as they move slowly downhill.

You can see glaciers in Boulder County in the Indian Peaks Wilderness Area and also nearby in Rocky Mountain National Park. The town of Boulder gets its drinking water from a glacier (Arapaho Glacier). Not many towns can say that!

You may have heard of rainwater rinses - how about glacier water showers?



Profile of a Glacier



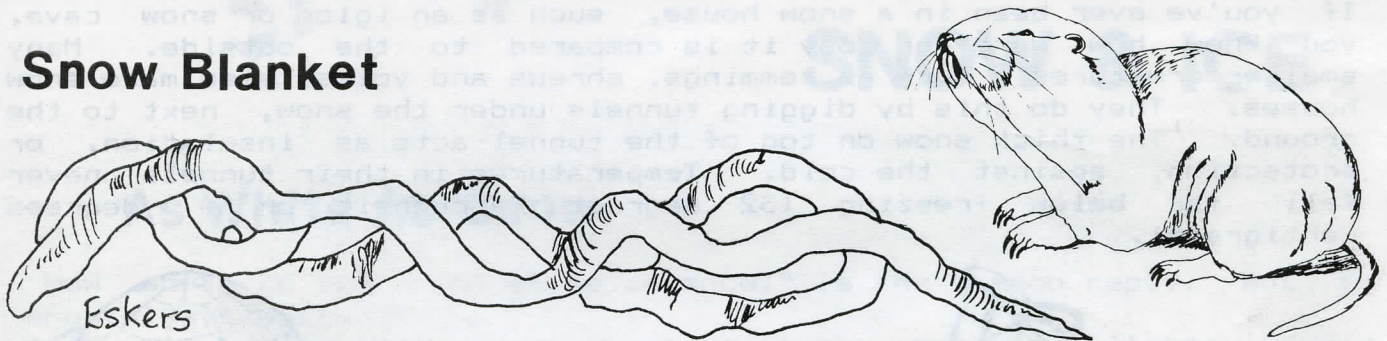
Look at snow crystals through a hand lens or magnifying glass if you have one. It is said that no two crystals are exactly alike. Can you find any look-alikes in the snowflake puzzle? What about look-alikes in real life? The best way to study crystals is against a dark background - a dark jacket or sweater sleeve, or a piece of black paper or cloth (cool it down outside first). How many different crystal types have you seen?

Frosted Flakes

They are called snowflakes, those fluffy globs drifting down from winter clouds like feathers from a torn pillow. But each flake is made up of many snow crystals.

Snow crystals form in clouds when the temperatures are from 32°F down to -39°F. Super cold, minute droplets of water gather round specks of dust and begin to grow into crystals. As the crystals become larger, they fall, sometimes hitting other crystals on the way down. Broken bits become 'nuclei' or centers for new crystals to begin, until enough crystals are falling to make a snow storm. Crystals at warmer temperature stick together making big flakes. When it reaches the ground, this warmer, wetter snow is good for building.

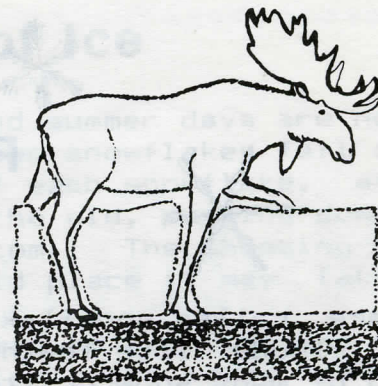
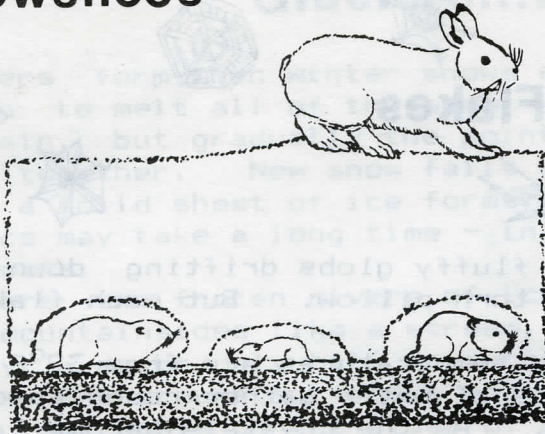
Snow Blanket



Can you imagine anything as cold as snow keeping you warm? It really can. Even if the wind is howling and the air temperature dives to way below zero, the snow is a blanket that keeps in the warmth of the ground. Grouse and ptarmigan, mountain birds that live here all year long, will dive into the snow to make their own snow caves to get out of the wind. With their fluffed up feathers covering even their feet, they keep warm on the iciest of nights.

Gophers, those tiny rodents of the tundra, don't hibernate. In the winter they are busy tunnelling along beneath the snow, finding roots and bulbs to eat. They even make nesting chambers in the snow pack, come spring, for the ground below is often saturated with snow-melt water. When the gophers dig into the soil to find food, the soil of the dig is pushed up into the snow tunnel to get it out of the way, leaving long, winding mounds of earth (like sausages), called eskers, that are there to see long after the snow has all melted. All this digging makes the soil loose, and grows gopher gardens full of wild flowers come summer.

Snowshoes



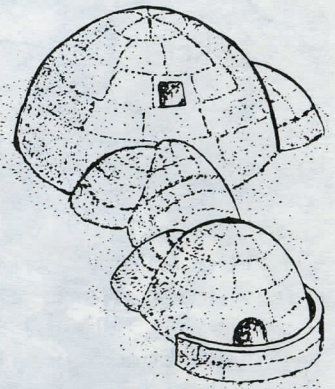
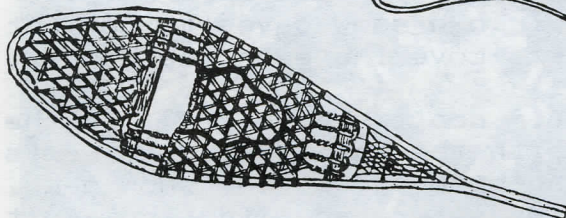
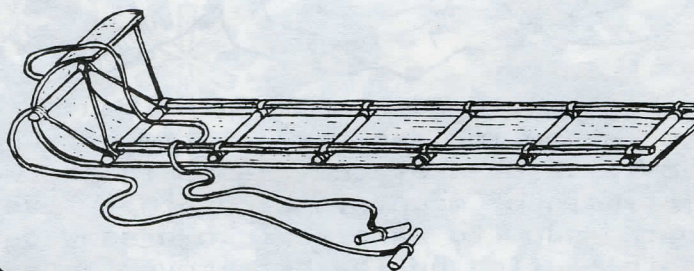
People have developed many wonderful ways of travelling and living in snow, ways of making the long, cold winter fun and safe. Many cold-weather inventions of humans may have been inspired by the adaptations of other animals to snow.

Did you know, for instance, that sledding is a favorite sport of river otters and grizzly bears? These animals love to zip down their "sled runs" again and again, just like kids. The only difference between these creatures and people is that otters and bears don't use sleds - they just slide down the hill on their furry bodies!

Snowshoe hares have built-in "snowshoes" in the form of large, furry feet, which allow them to travel on top of the snow rather than sink into it.

A moose is able to travel through fairly deep snow on its long 'stilts'. (I've never seen a person on stilts in the snow, though, have you?)

If you've ever been in a snow house, such as an igloo or snow cave, you know how warm and cosy it is compared to the outside. Many smaller creatures, such as lemmings, shrews and voles, also make snow houses. They do this by digging tunnels under the snow, next to the ground. The thick snow on top of the tunnel acts as insulation, or protection, against the cold. Temperatures in their tunnels never fall far below freezing (32 degrees Fahrenheit or 0 degrees Centigrade).



 * SATURDAY, FEBRUARY 22: THINK SNOW! Explore the properties of this
 * winter blanket and see how animals survive in it.
 * Details in the calendar section of Images.
 *

