

\$3.95

A Let's-Read-and-Find-Out Book™

Glaciers

by Wendell V. Tangborn

illustrated by Marc Simont



The Let's-Read-and-Find-Out Book™ series was originated by Dr. Franklin M. Branley, Astronomer Emeritus and former Chairman of The American Museum-Hayden Planetarium, and was formerly co-edited by him and Dr. Roma Coon, Professor Emerita of Childhood Education, Teachers College, Columbia University. Text and illustrations for each of the more than 100 books in the series are checked for accuracy by an expert in the relevant field. The titles available in paperback are listed below. Look for them at your local bookstore or library.

Air Is All Around You

A Baby Starts to Grow

The BASIC Book

Bees and Beelies

Bits and Bytes

Comets

Corn Is Made

Danger-Iceberg!

Digging Up Dinosaurs

Dinosaurs Are Different

A Drop of Blood

Ducks Don't Get Wet

Fireflies in the Night

Flash, Crash, Humble, and Roll

Fossils Tell of Long Ago

Germs Make Me Sick!

Glaciers

Gravity Is a Mystery

How Your Heart

How a Seed Grows

How Many Teeth?

How to Talk to Your Computer

Hurricane Watch

Is There Life in Outer Space?

Journey Into a Black Hole

Look at Your Eyes

Me and My Family Tree

Meet the Computer

The Moon Seems to Change

My Five Senses

My Visit to the Dinosaurs

No Messes, No Mumps for Me

Oxygen Keeps You Alive

The Planets in Our Solar System

Rock Collecting

Rockets and Satellites

The Skeleton Inside You

The Sky Is Full of Stars

Snow Is Falling

Straight Hair, Curly Hair

Sunshine Makes the Seasons

A Time Is a Plant

Turtle Talk

Volcanoes

Water for Dinosaurs and You

What Happens to a Hamburger

What I Like About Toads

What Makes Day and Night

What the Moon Is Like

Why Frogs Are Wet

Wild and Woolly Mammoths

Your Skin and Mine

Glaciers

Text copyright © 1985, 1988 by Wendell V. Tungbom.

Illustrations copyright © 1989 by Marc Simont.

All rights reserved. No part of this book may be used or reproduced in any manner whatsoever without written permission, except in the case of brief quotations embodied in critical articles and reviews. Printed in the United States of America.

For information address Harper & Row Junior Books, 10 East 53rd Street, New York, N.Y. 10022. Published simultaneously in Canada by Fitzhenry & Whiteside Limited, Toronto.

Published in hardcover by Thomas Y. Crowell, New York.
Revised Edition

First Harper Trophy edition, 1985.

Library of Congress Cataloging in Publication Data

Tungbom, Wendell V.

Glaciers.

Let's-read-and-find-out science book.

Summary: Explains how and where glaciers form, how they move, and how they shape the land.

1. Glaciers--Juvenile literature. I. Glaciers

I. Simont, Marc, ill. II. Title. III. Series.

QB2403.L734 1989 551.3'12 97-47696

ISBN 0-688-04882-0

1985 0-688-04884-7 (lib. bdg.)

[A Let's-read-and-find-out book.]

"A Harper Trophy book."

ISBN 0-688-04882-0 (pbk.)

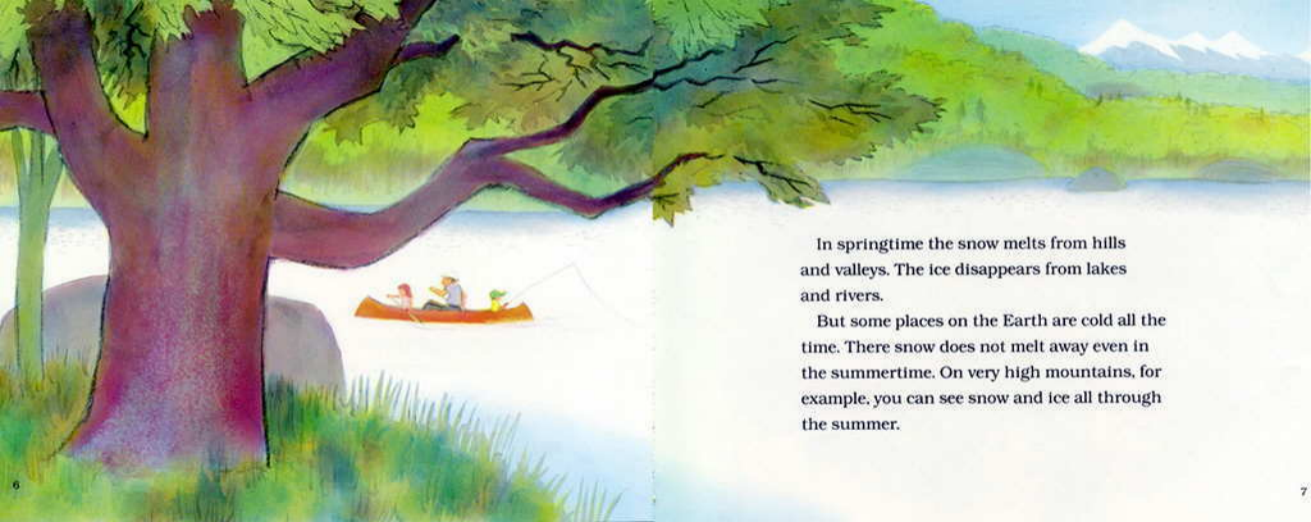
87-45386

To John, Andrew, Inger and Eric—when they were children



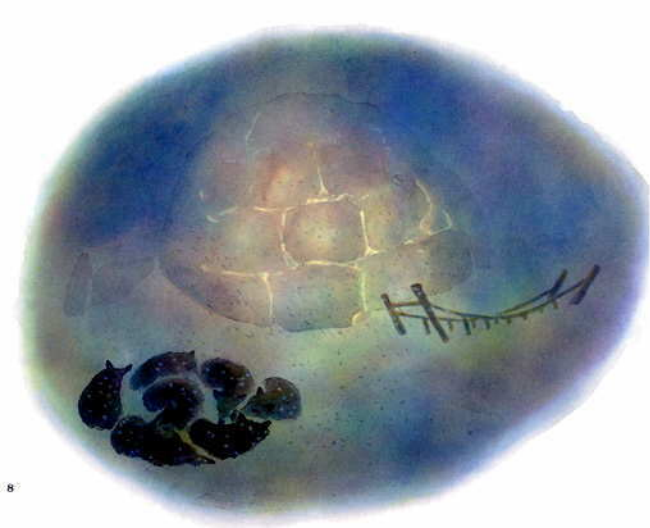


Winters are very cold in many places. Hills and valleys are covered with snow. Big lakes freeze. Ice covers rivers from shore to shore. If the winter stays cold, the ice gets thicker and thicker. The snow piles deeper and deeper.



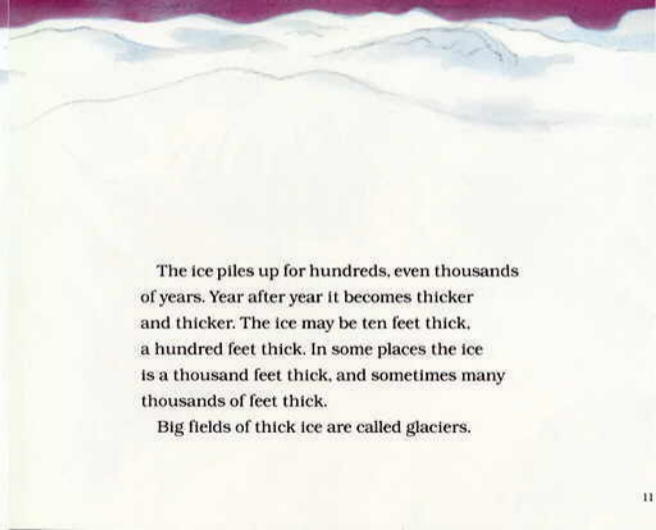
In springtime the snow melts from hills and valleys. The ice disappears from lakes and rivers.

But some places on the Earth are cold all the time. There snow does not melt away even in the summertime. On very high mountains, for example, you can see snow and ice all through the summer.



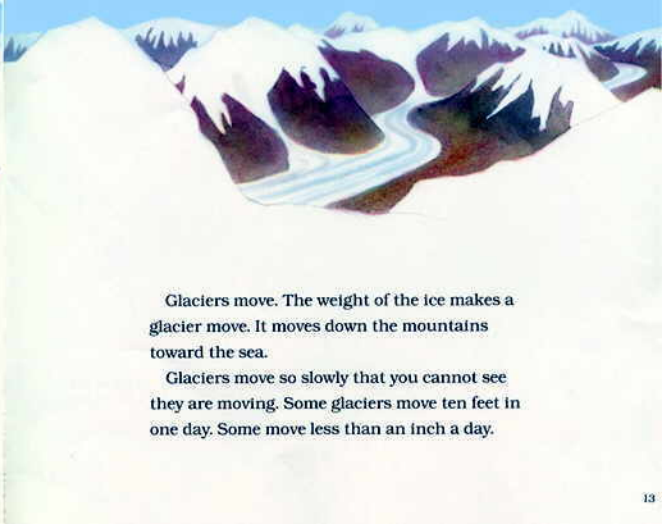
SOUTH POLE ↑

Greenland, near the North Pole, is covered by ice all the time. At the South Pole miles and miles of thick ice cover the land. The snow and ice never melt away. Year after year more snow falls. More snow piles deeper and deeper. Snow that does not melt year after year turns into ice.



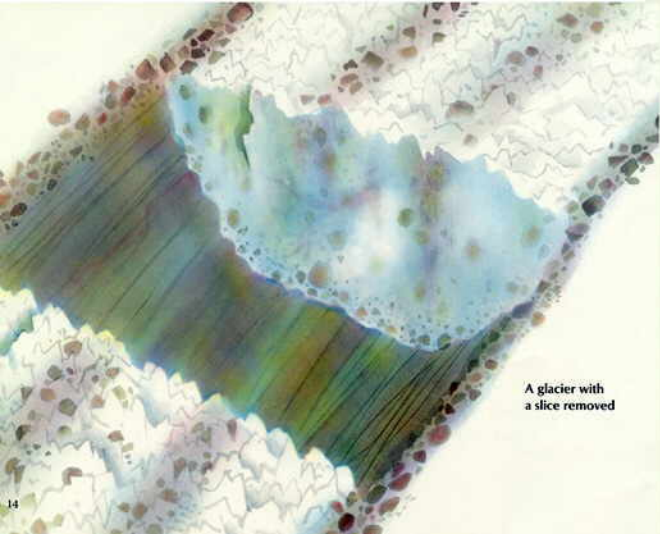
The ice piles up for hundreds, even thousands of years. Year after year it becomes thicker and thicker. The ice may be ten feet thick, a hundred feet thick. In some places the ice is a thousand feet thick, and sometimes many thousands of feet thick.

Big fields of thick ice are called glaciers.



Glaciers move. The weight of the ice makes a glacier move. It moves down the mountains toward the sea.


Glaciers move so slowly that you cannot see they are moving. Some glaciers move ten feet in one day. Some move less than an inch a day.



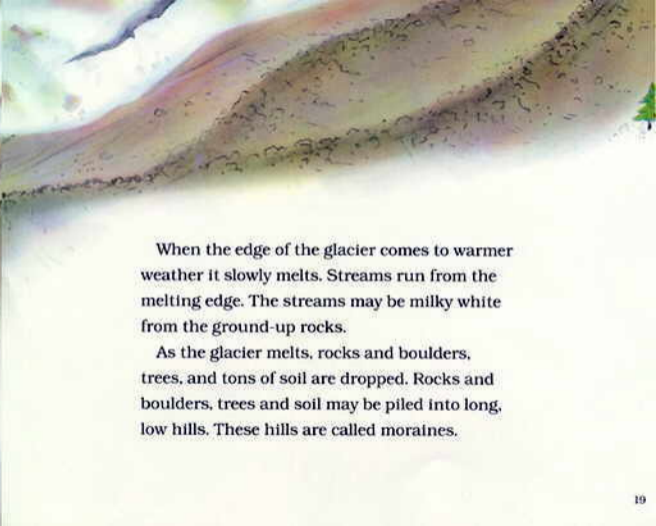
A glacier with
a slice removed

Nothing can stop these big fields of ice from moving. As they move over land they pick up stones and boulders. As they move through valleys they cut them deep and wide. The ice is packed with soil and trees, rocks and boulders. Rocks and boulders, soil and trees are ground together for hundreds and thousands of years. Some boulders are ground as fine as flour.

Slowly, slowly the glaciers move, grinding and crushing rocks, hillsides, trees, and forests. A glacier could push a whole city out of its path. Glaciers move on and on, year after year after year.

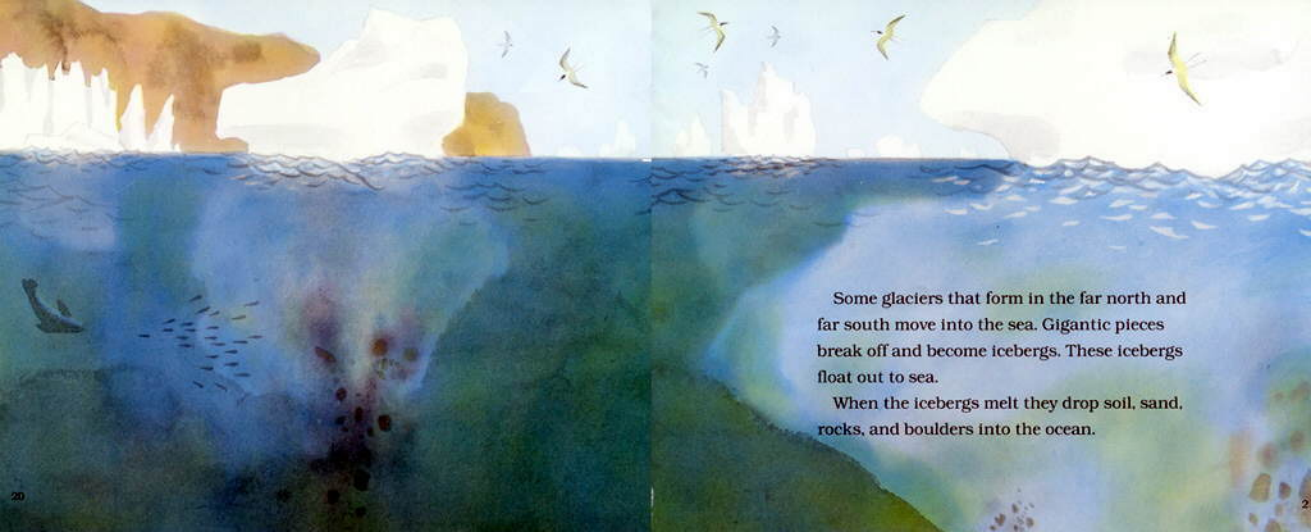
An illustration of a sled team pulling a sled across a snowy, hilly landscape. The sled is on the left, and several dogs of various breeds (including huskies and malamutes) are pulling it. The scene is set against a backdrop of soft, white clouds. The dogs are shown in profile, moving from left to right across the top of the frame. The sled is partially visible on the left side, showing its runners and a red harness. The dogs are pulling the sled with their harnesses, and their tails are slightly raised. The overall scene is bright and airy, with a focus on the dogs and the sled.

Sometimes the ice stretches and makes huge cracks. The cracks may be a hundred feet deep. Some are so wide you could not throw a stone across them.



When the edge of the glacier comes to warmer weather it slowly melts. Streams run from the melting edge. The streams may be milky white from the ground-up rocks.

As the glacier melts, rocks and boulders, trees, and tons of soil are dropped. Rocks and boulders, trees and soil may be piled into long, low hills. These hills are called moraines.



Some glaciers that form in the far north and far south move into the sea. Gigantic pieces break off and become icebergs. These icebergs float out to sea.

When the icebergs melt they drop soil, sand, rocks, and boulders into the ocean.

Thousands of years ago glaciers covered large parts of the Earth. These glaciers were formed during the great ice ages. The white areas on the map show where the Earth was covered by glaciers during the ice ages.

Today glaciers are found only in the polar regions and on high mountains.



Maybe the place where you live used to be under a glacier. Rocks you pick up may have been dropped by a glacier as it melted. They may have been dragged from a faraway place. A big rounded boulder that stands all alone may have been carried by a glacier. Some of the hills you slide down may have been made by a glacier long, long ago in an early ice age.



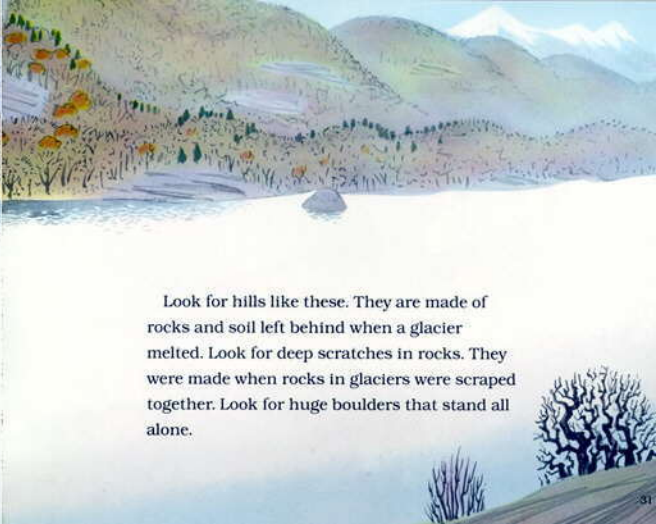
Today parts of the Earth are covered with snow and ice all through the year. Many glaciers that we see are still being formed. The Earth may still be in a Little Ice Age that began about seven hundred years ago.

Glaciers are scraping up rocks and boulders, trees and soil, grinding, grinding, grinding. You can see the places on the map.



As you travel, look for places where there are glaciers today. Look for places where there were glaciers long ago. Look for pits where gravel is dug. The gravel was made by glaciers.





Look for hills like these. They are made of rocks and soil left behind when a glacier melted. Look for deep scratches in rocks. They were made when rocks in glaciers were scraped together. Look for huge boulders that stand all alone.



Much of the land on which we live was shaped by glaciers long ago.