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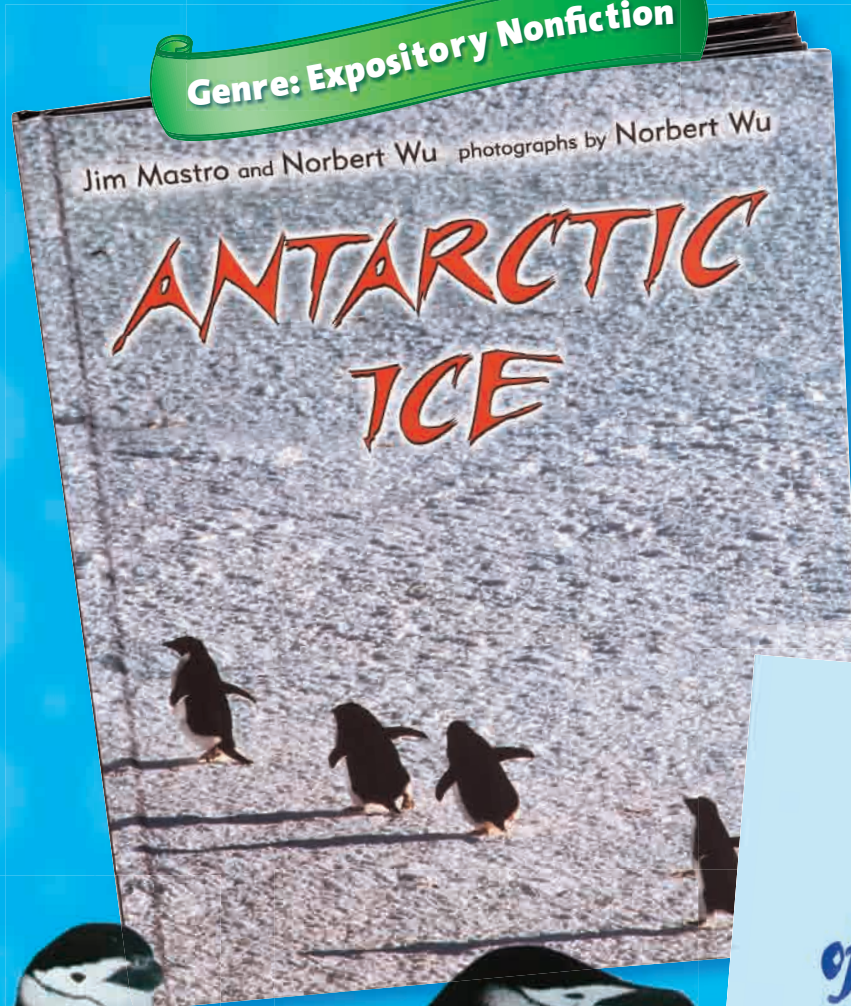
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- Compare texts.
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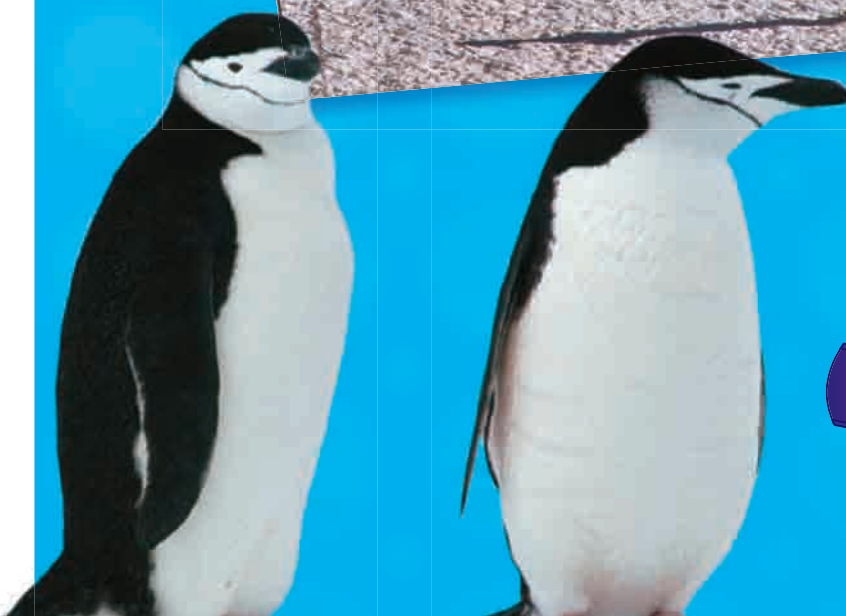
Lesson 21

Genre: Expository Nonfiction



Diary
of a Very
Short
Winter Day

Genre: Poetry





Focus Skill



Sequence

The order in which events happen is called a **sequence**. You can follow the sequence by looking for time-order words. Words such as *first*, *next*, *then*, *later*, and *finally* give clues about the order in which events happen. Dates and times are also clues to sequence. Keeping track of the sequence of events helps you understand what you are reading.



First

Next

Then

Finally



Tip

Think about what has to happen before something else can happen. This can help you figure out the sequence of events in what you read.

Read the article, and tell what is the next thing that happened after Shackleton sailed to Antarctica.

In 1914, explorer Sir Henry Shackleton sailed to Antarctica on a ship called the *Endurance*. He wanted to reach the South Pole, but the ship became trapped in the ice.

Shackleton and his crew walked about 180 miles to Elephant Island. Then Shackleton and five of the crew went by lifeboat to find help. Finally, with a rescue team, they returned to Elephant Island for the rest of the crew.



First, Shackleton sailed to Antarctica in 1914.



Next



Then



Finally, Shackleton returned for the crew.

Try This!

Tell the next thing that happened after Shackleton and his crew became trapped.



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Vocabulary

Build Robust Vocabulary

absence

shelters

permanently

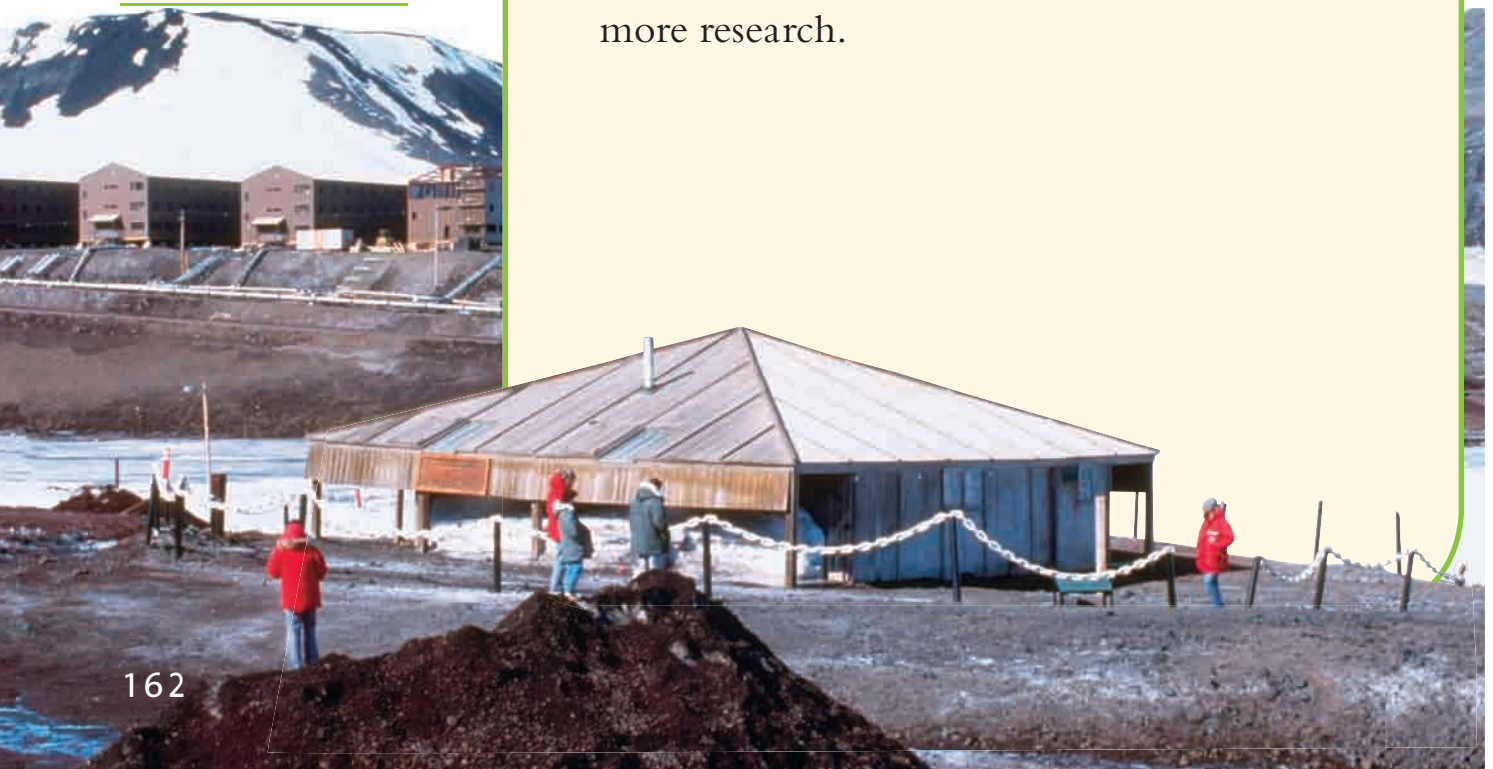
drifts

scarce

dim

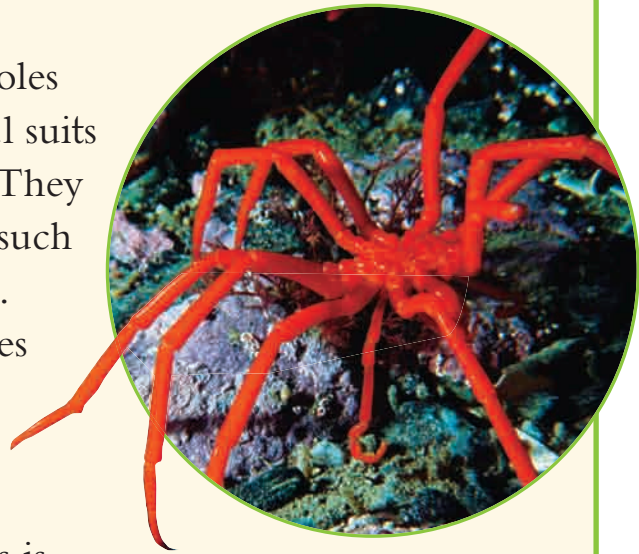
Field Trip in Antarctica

Antarctica is always cold—really cold! The **absence** of the sun makes it extra hard to stay there through the dark, cold winter. Even so, scientists spend months in Antarctica to do research. The McMurdo Station **shelters** them from the worst of the cold. The scientists do not stay at the station **permanently**. When summer comes, they set out to a field camp near the ocean to do more research.



To do ocean research, the scientists must drill or blast holes in the ice. They put on special suits and dive into the cold water. They photograph amazing things, such as a sea spider as it **drifts** past.

The scientists collect samples of many sea creatures. Information about these animals and the chemicals they use to protect themselves is **scarce**. Later, the scientists will study whether the chemicals can be used in medicines.



Scientists use special cameras to film deep-sea creatures in the **dim** light.

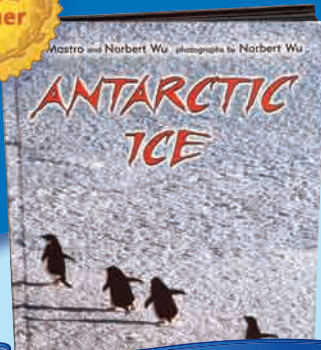


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Word Scribe



Your mission this week is to use the Vocabulary Words in your writing. For example, write a story about what would happen in your community if daylight became scarce. Read your story to a classmate.



Expository Nonfiction

Genre Study

Expository nonfiction explains information and ideas. Look for

- facts and details about a topic.
- events told in time order.

First

Next

Then

Finally

Comprehension Strategy

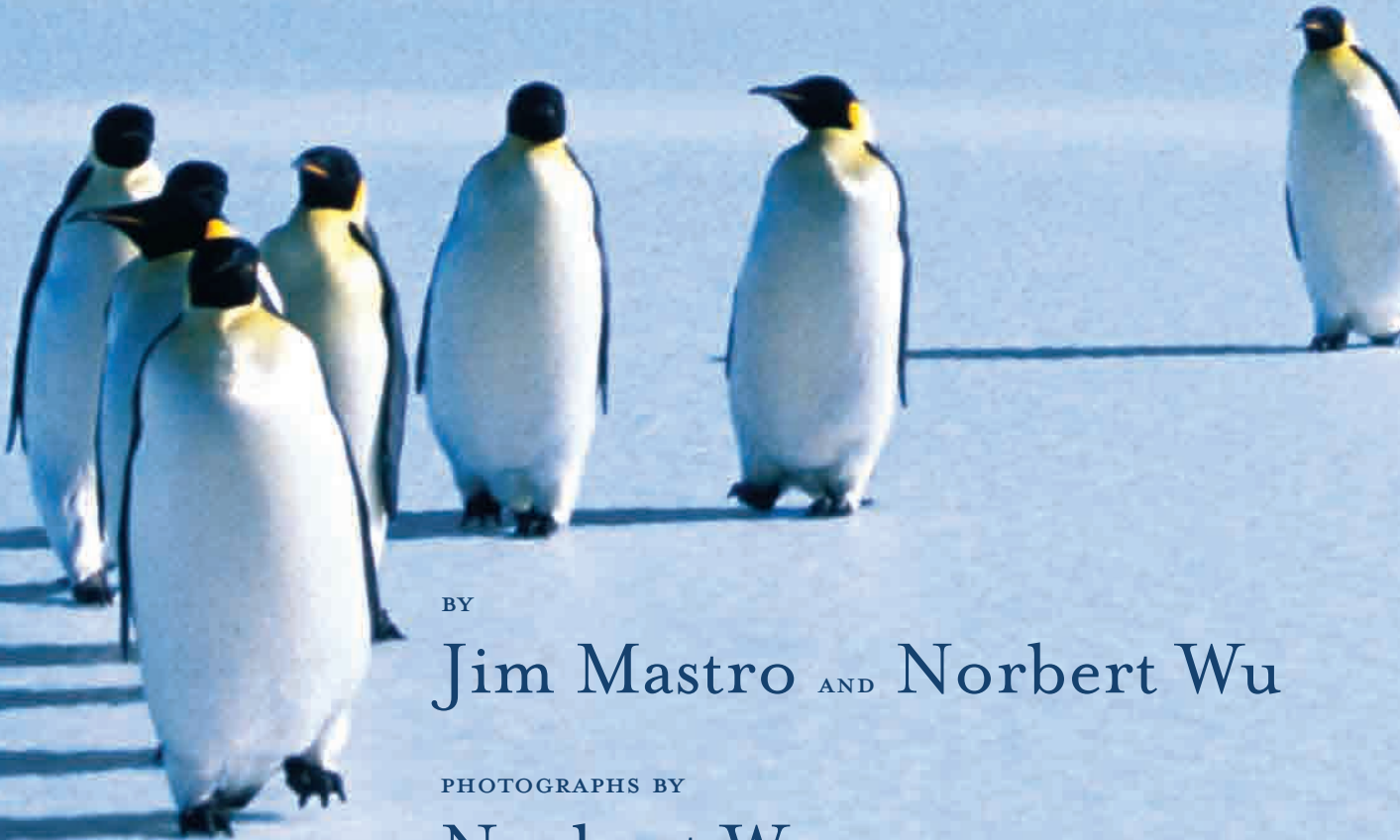


Monitor comprehension—reread information that doesn't make sense the first time you read it.



ANTARCTIC

LOGO

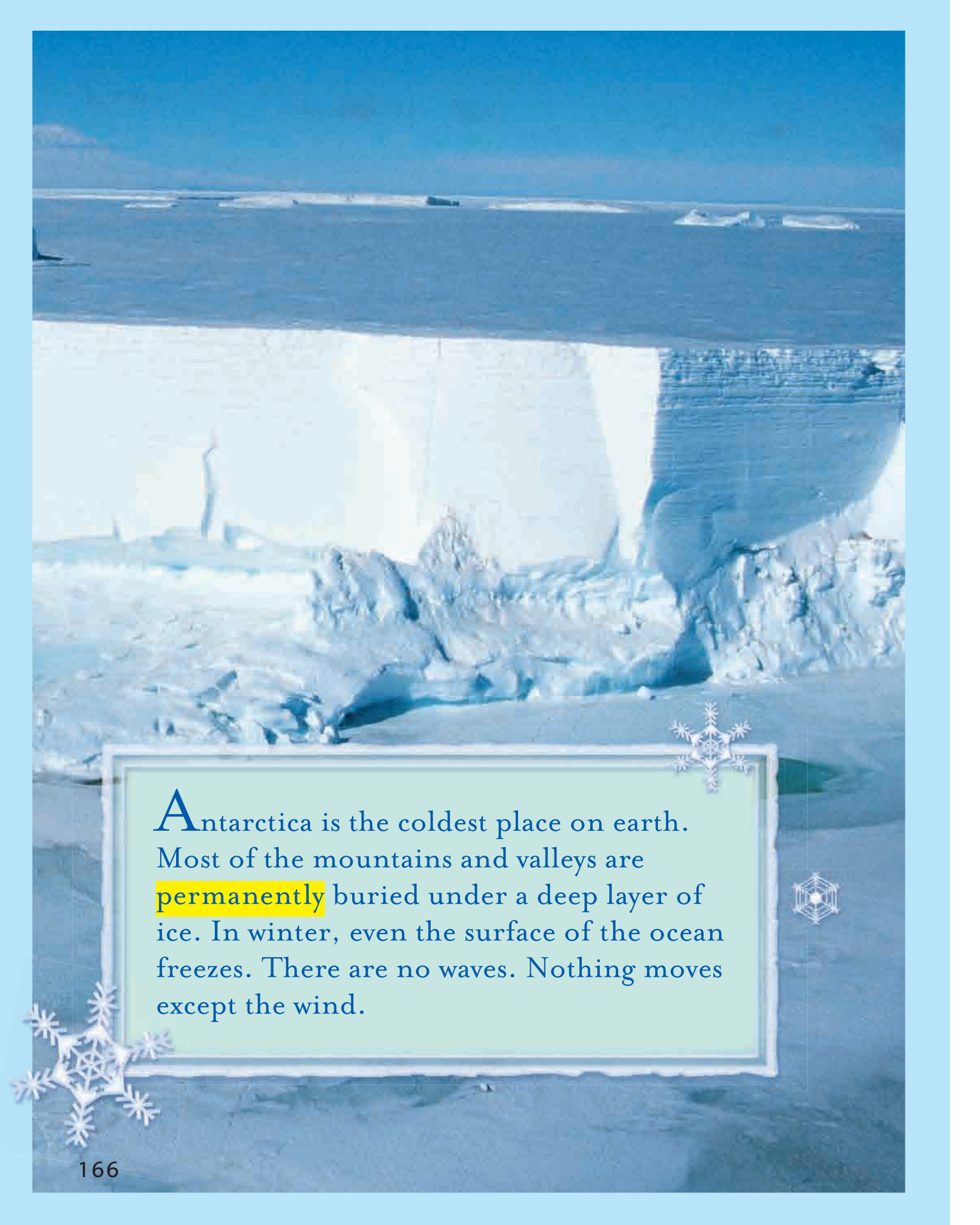


BY


Jim Mastro AND Norbert Wu

PHOTOGRAPHS BY

Norbert Wu




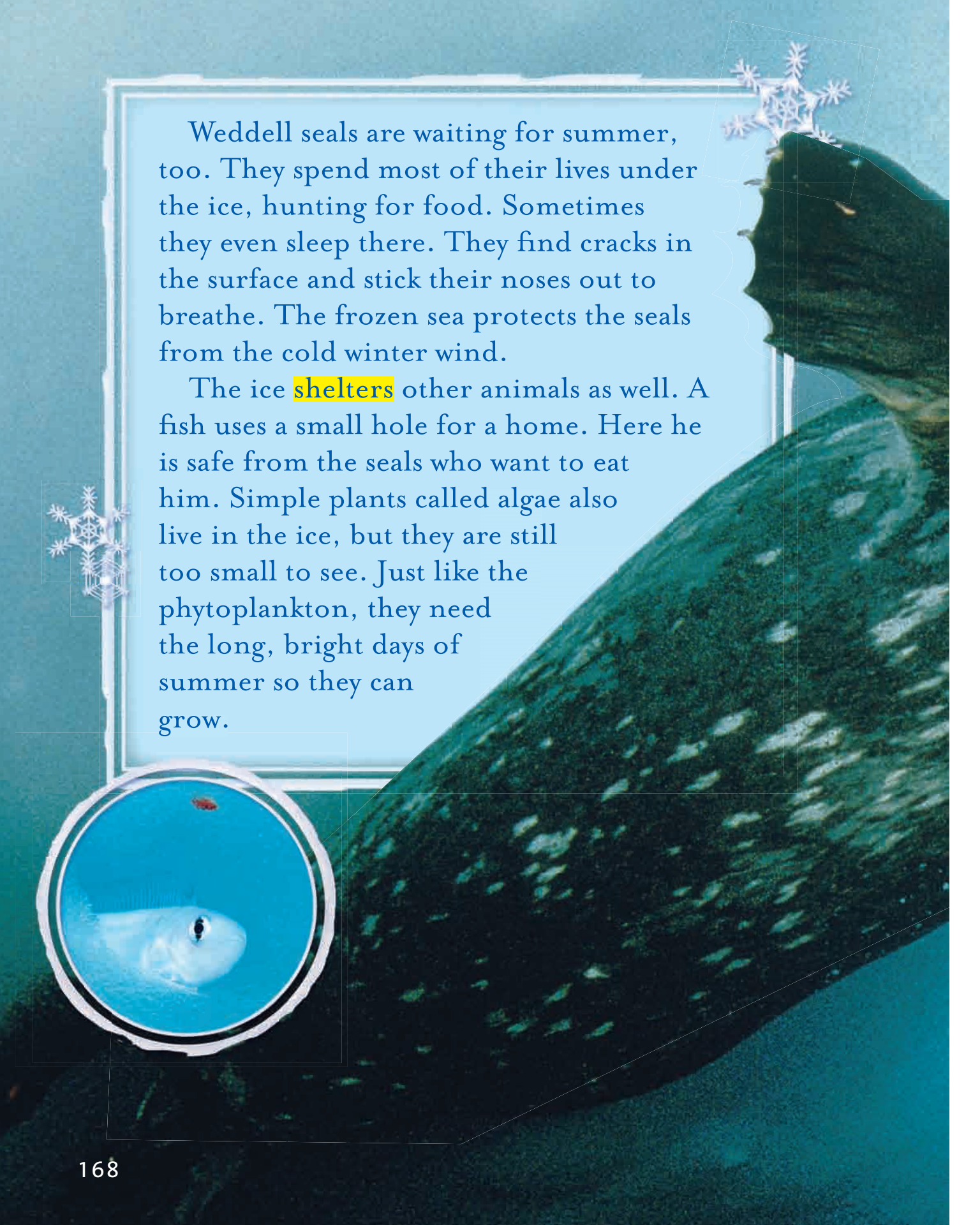
Antarctica is the coldest place on earth. Most of the mountains and valleys are **permanently** buried under a deep layer of ice. In winter, even the surface of the ocean freezes. There are no waves. Nothing moves except the wind.




Under the ice, animals are waiting for summer to arrive. A jellyfish **drifts** through the **dim** light. A giant sea spider crawls over the icy ocean floor. A sea star climbs the stalk of a fan worm. The worm uses its lacy tendrils to gather phytoplankton to eat.

Phytoplankton are the tiny plants that float in the ocean. Most are so small they can only be seen with a microscope. Many animals on the ocean floor eat them, but they are **scarce** right now. Phytoplankton need sunlight to grow, and the sun does not shine in Antarctica during the winter.



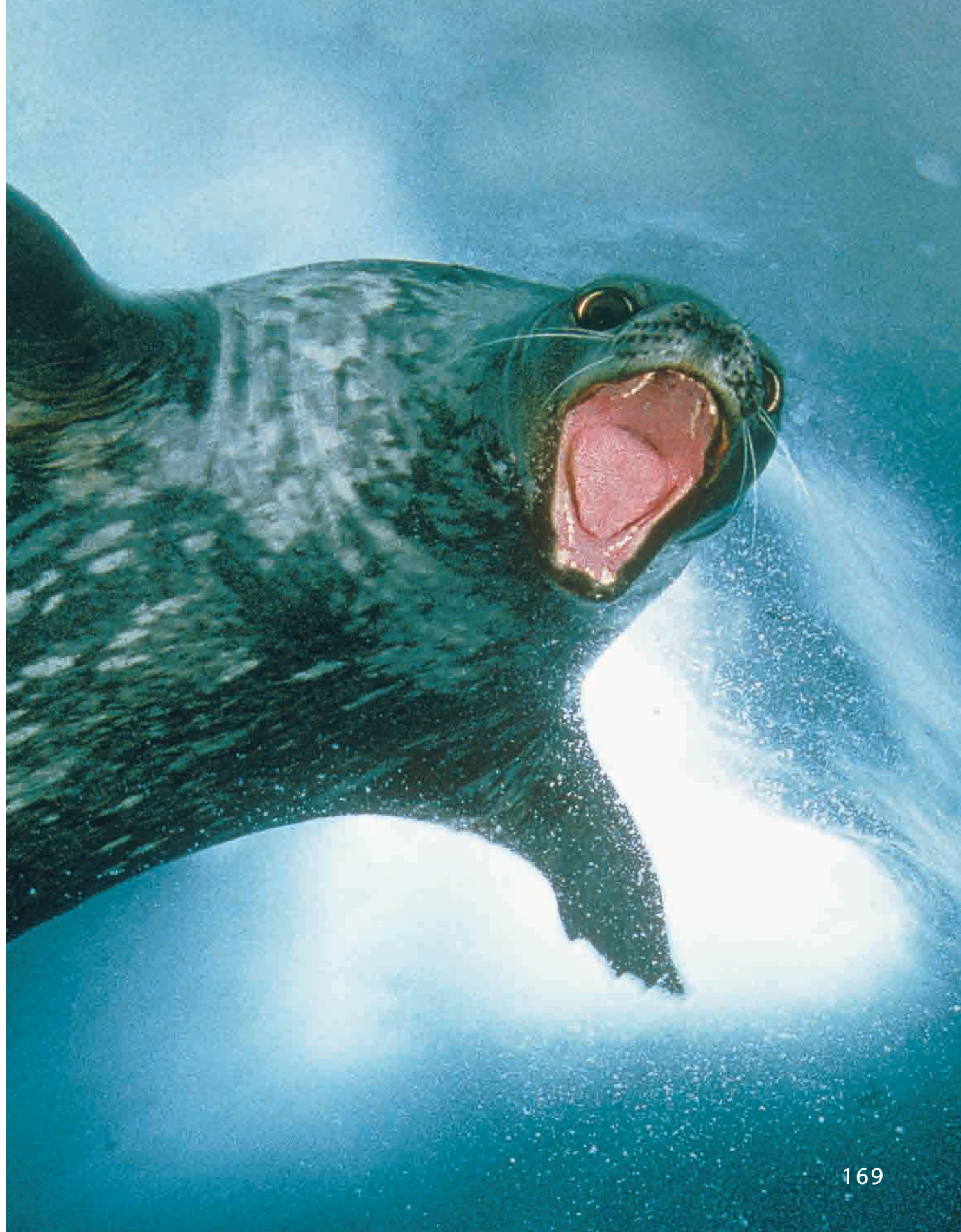


Weddell seals are waiting for summer, too. They spend most of their lives under the ice, hunting for food. Sometimes they even sleep there. They find cracks in the surface and stick their noses out to breathe. The frozen sea protects the seals from the cold winter wind.



The ice **shelters** other animals as well. A fish uses a small hole for a home. Here he is safe from the seals who want to eat him. Simple plants called algae also live in the ice, but they are still too small to see. Just like the phytoplankton, they need the long, bright days of summer so they can grow.



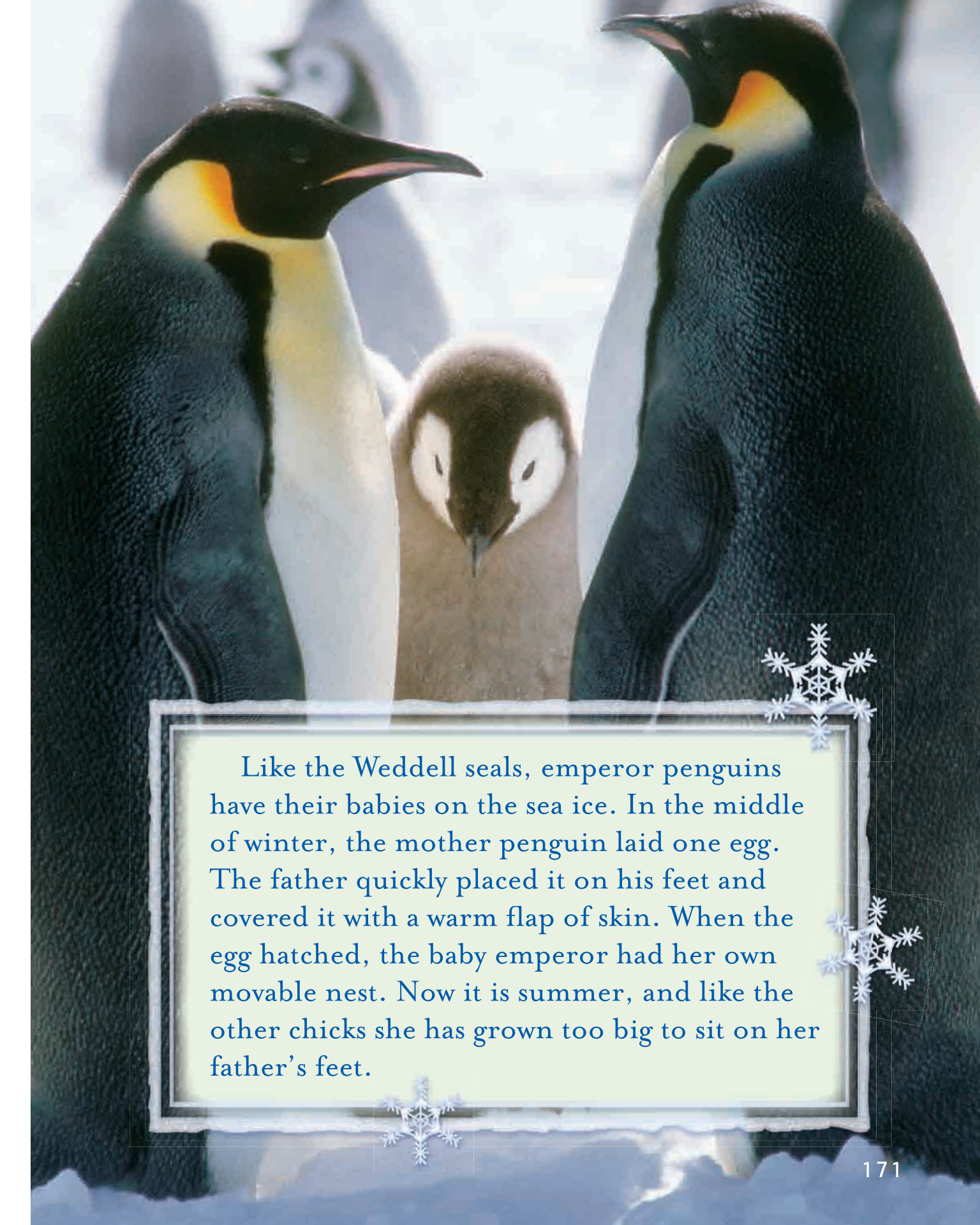




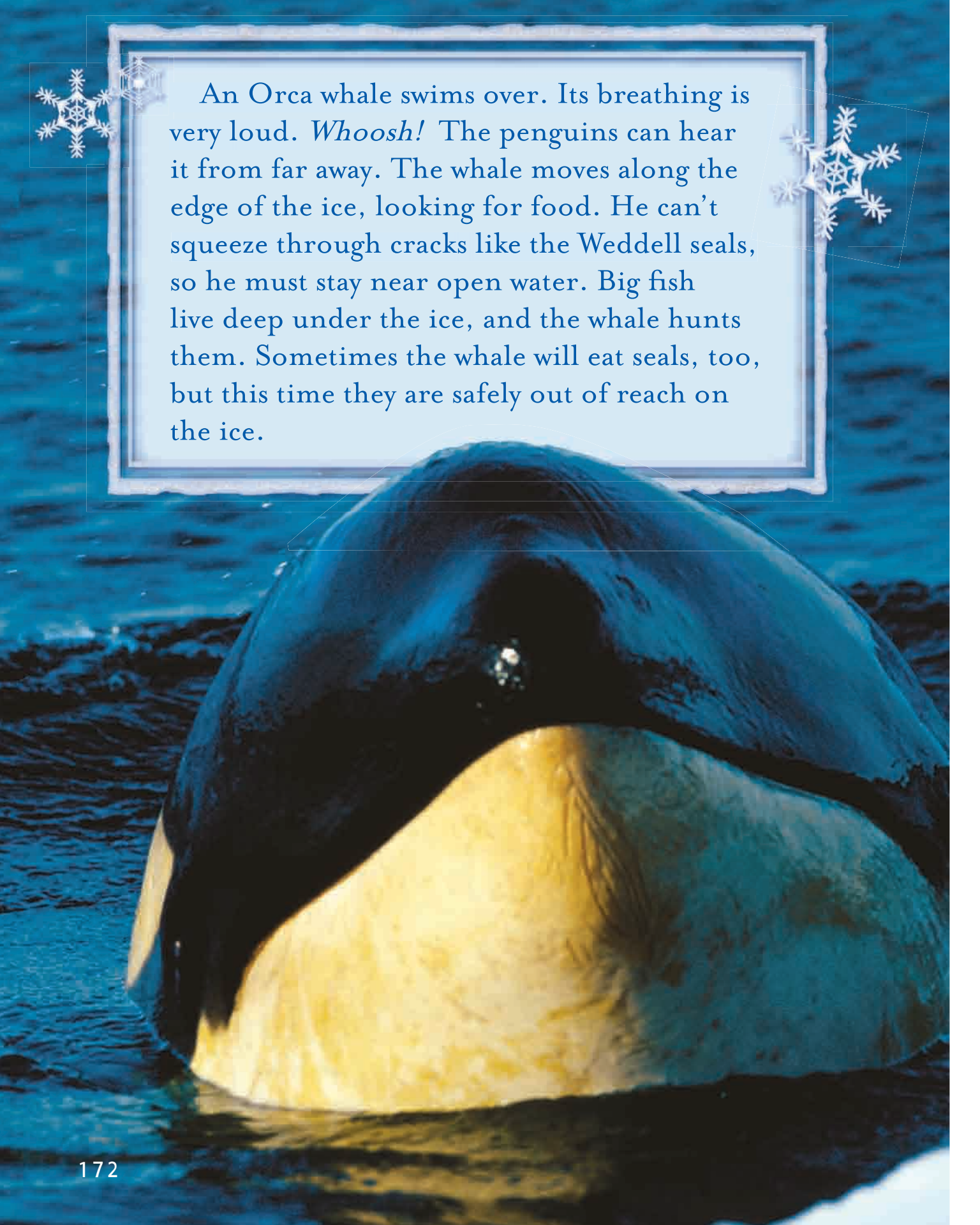
The sun returns from its long **absence**. Each day it rises higher in the sky and shines longer. Soon it is light all the time. There is no night at all. Summer has arrived in Antarctica, but it is still cold enough to keep the ocean's surface frozen.

A mother Weddell seal finds a crack in the ice and pulls herself out of the water. She inches across the frozen surface like a caterpillar. It is time for her to have a baby. The solid ice gives her a safe place to do it. When the pup arrives, he has a coat of thick fur to keep him warm.





Like the Weddell seals, emperor penguins have their babies on the sea ice. In the middle of winter, the mother penguin laid one egg. The father quickly placed it on his feet and covered it with a warm flap of skin. When the egg hatched, the baby emperor had her own movable nest. Now it is summer, and like the other chicks she has grown too big to sit on her father's feet.



An Orca whale swims over. Its breathing is very loud. *Whoosh!* The penguins can hear it from far away. The whale moves along the edge of the ice, looking for food. He can't squeeze through cracks like the Weddell seals, so he must stay near open water. Big fish live deep under the ice, and the whale hunts them. Sometimes the whale will eat seals, too, but this time they are safely out of reach on the ice.



After several days of swimming south from his winter home, an Adélie penguin arrives at the ice edge. He is on his way to the rookery, the place where he and his mate will raise their chicks. The small penguin can take only short steps, so it is a long walk for him.

At last he reaches the rookery. It is on a low hill that has no ice. The male must hurry to build his nest of stones before the female arrives. There aren't many stones around, so sometimes he sneaks over and steals one from his neighbor.



Summer is a very busy time under the ice, too. The tiny algae grow fast in the bright sun and form a brown film on the bottom of the ice. This is the food many animals have been waiting for. Urchins, sea stars, and little creatures called amphipods and krill eat the algae. Fish eat the amphipods and krill, and seals and penguins eat the fish. Penguins eat krill, too.



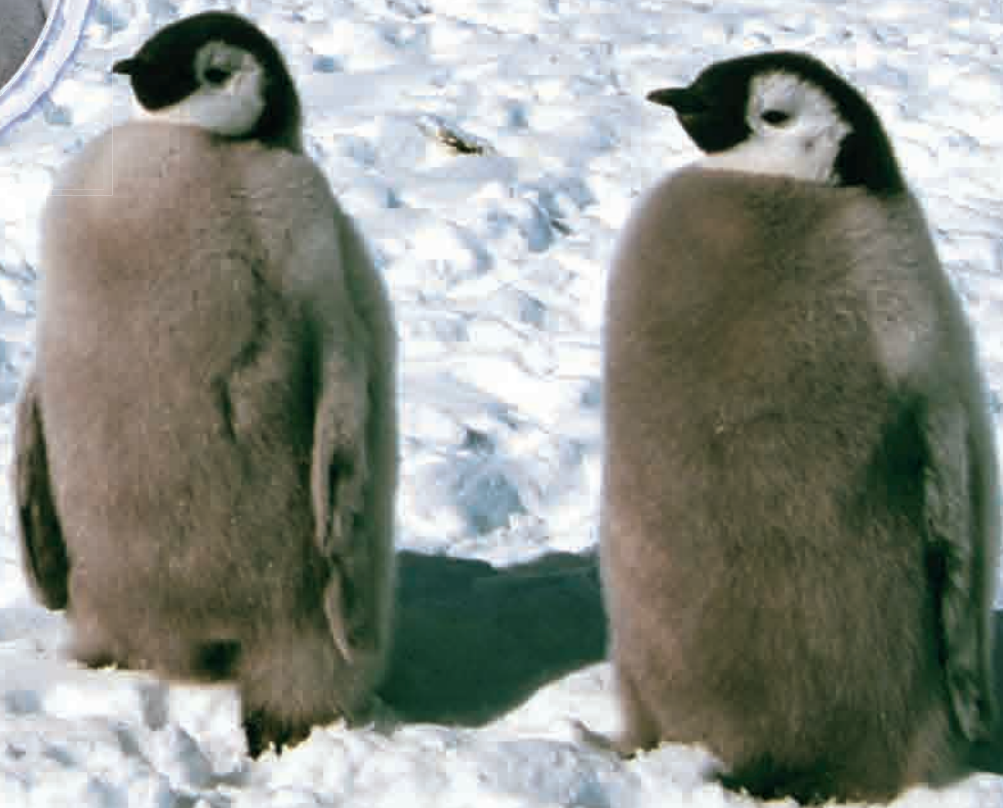


Back on land, the female Adélie penguin arrives at the rookery. To get reacquainted, the penguins sing to each other and wiggle their flippers. The female lays two eggs, then she leaves again. Laying has made her very hungry. She has to go back to the ocean to eat. Off she goes on her long walk over the ice. The male sits on the eggs and keeps them warm.



The emperor chick gets bigger as summer goes on. When her parents leave to go fishing, she joins the other chicks, who have formed a group called a crèche.

The baby emperors are still too young to swim. Without ice to stand on, they wouldn't survive. The parents come back every couple of days with their stomachs full of fish, squid, and krill. They pass some of this partially digested food into the hungry chick's mouth.



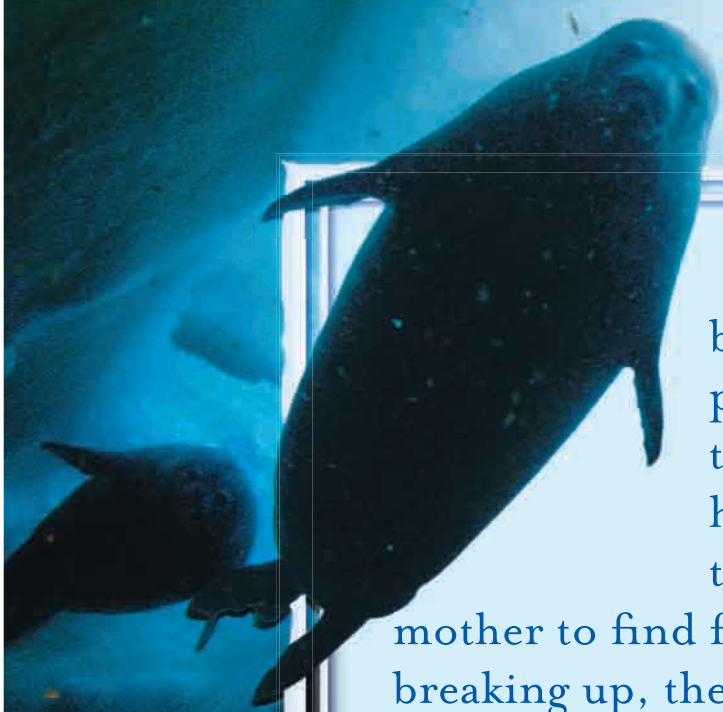


The baby Weddell seal has gotten bigger, too. His mother has decided it is time for him to learn to swim. The two of them slip through a crack into the water. The mother stays very close to protect her pup.

The sea ice softens and begins to melt in the summer sun. Large pieces break off from the edge. More and more of the sea is uncovered. The ice algae are released and drift down to the ocean floor. Sponges and other marine animals sift them out of the water to eat. Everyone depends on the algae, and the algae depend on the ice.

The female Adélie doesn't have quite as far to walk when she returns to the rookery. She replaces the father, who goes off to eat. While he is away, the eggs hatch. The two fuzzy chicks are hungry. Just like the emperor penguin parents, the mother Adélie spits up partially digested food into each chick's mouth.






The cracks in the ice grow bigger. The Weddell seal pup spends more time in the water. He is learning to hold his breath for a long time so he can dive like his mother to find fish. Now that the ice is breaking up, the fish are running out of places to hide.

The animals on the bottom enjoy all the food raining down from the surface. As the ice breaks up, more algae fall down where they can reach it. The bright sun has made lots of phytoplankton grow in the water, and some of this drifts down to the sea floor as well. Even animals that don't eat algae and phytoplankton have a feast. Some sea stars find a nice, juicy urchin to eat.






The brief summer draws to an end. Most of the sea ice has melted. The emperor penguin chicks must quickly learn how to swim before it disappears entirely. The Adélie penguins can now just walk to the shore and jump in.

The sun dips lower in the sky. It is getting colder. The emperor chicks begin swimming north, where they will spend the winter. Once the Adélie chicks grow adult feathers, they too will dive into the ocean and swim north. In just a few days, the nests are empty.










All too soon, the short summer is over. The Orcas and Weddell seal pups have gone north for the winter, but some of the adult Weddell seals have stayed behind. They are used to living in the ice.

Winter arrives quickly in Antarctica. The ocean's surface begins to freeze again. Before long, nothing moves but the wind. Everything is waiting for summer to return once more.



Think Critically

- ① What does the father emperor penguin do after the mother penguin lays an egg?  SEQUENCE
- ② Why are algae important to the food chain? DRAW CONCLUSIONS
- ③ Do you think living in Antarctica would be difficult? Why or why not? EXPRESS PERSONAL OPINIONS
- ④ Which of the animals do you think the authors find most interesting? Why do you think so? AUTHORS' VIEWPOINT
- ⑤ **WRITE** Why is summer an important season for the animals of Antarctica? Give examples to explain your answer.  SHORT RESPONSE

MEET THE AUTHOR

Jim Mastro

When he was a child, Jim Mastro lived in Hawaii for three years. He loved the ocean so much that, when he got older, he studied seals and dolphins. Then one day, he saw photos of Antarctica. He knew right away that it was a place he wanted to visit.

The first time that Jim Mastro visited Antarctica, he stayed for fourteen months. He has gone back many more times. In all, he has spent more than five years there. During those visits, he made more than 250 dives beneath the sea. Jim Mastro now lives in New England with his family. Someday he hopes to return to Antarctica for another visit.



MEET THE AUTHOR/PHOTOGRAPHER

Norbert Wu

Norbert Wu had wanted to study the sea ever since he was in the second grade. That may seem odd, because he was raised far from the ocean, in Atlanta, Georgia.

Today Norbert Wu is one of the world's most famous underwater photographers. He has seen some amazing things while taking photographs under the sea. He has also been bitten by sharks, run over by an iceberg, and stung by sea wasps!

Norbert Wu's work has taken him from the freezing waters of the Antarctic to the warm Pacific. His friends say that he is always the first one in the water and the last to get out!

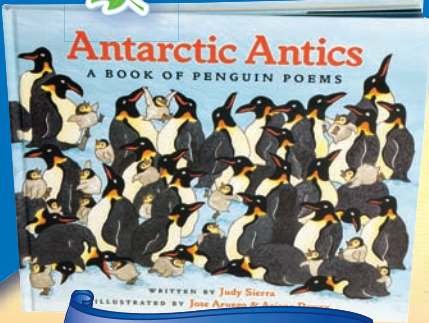


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Science



Poetry

Diary of a Very Short Winter Day

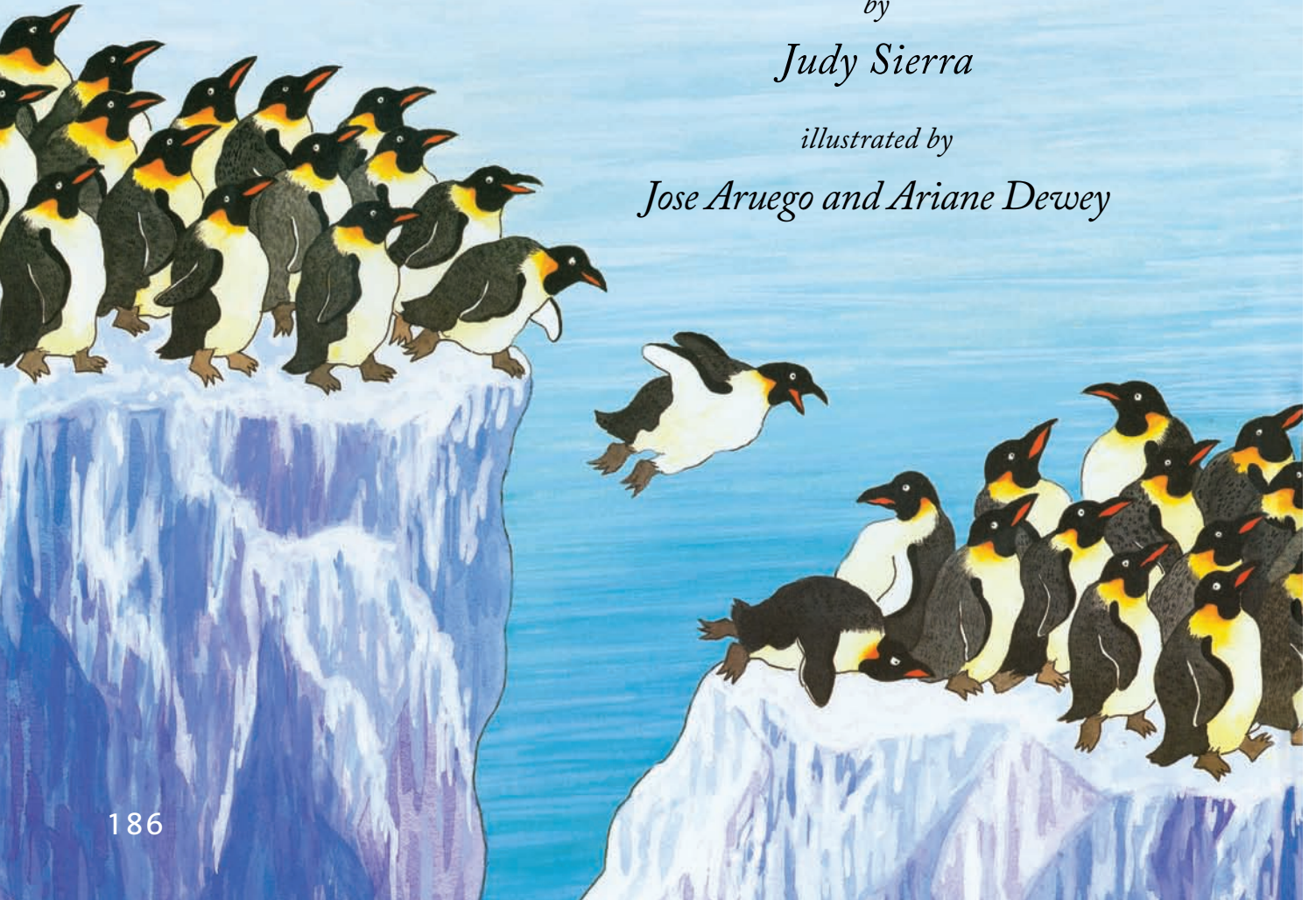


by

Judy Sierra

illustrated by

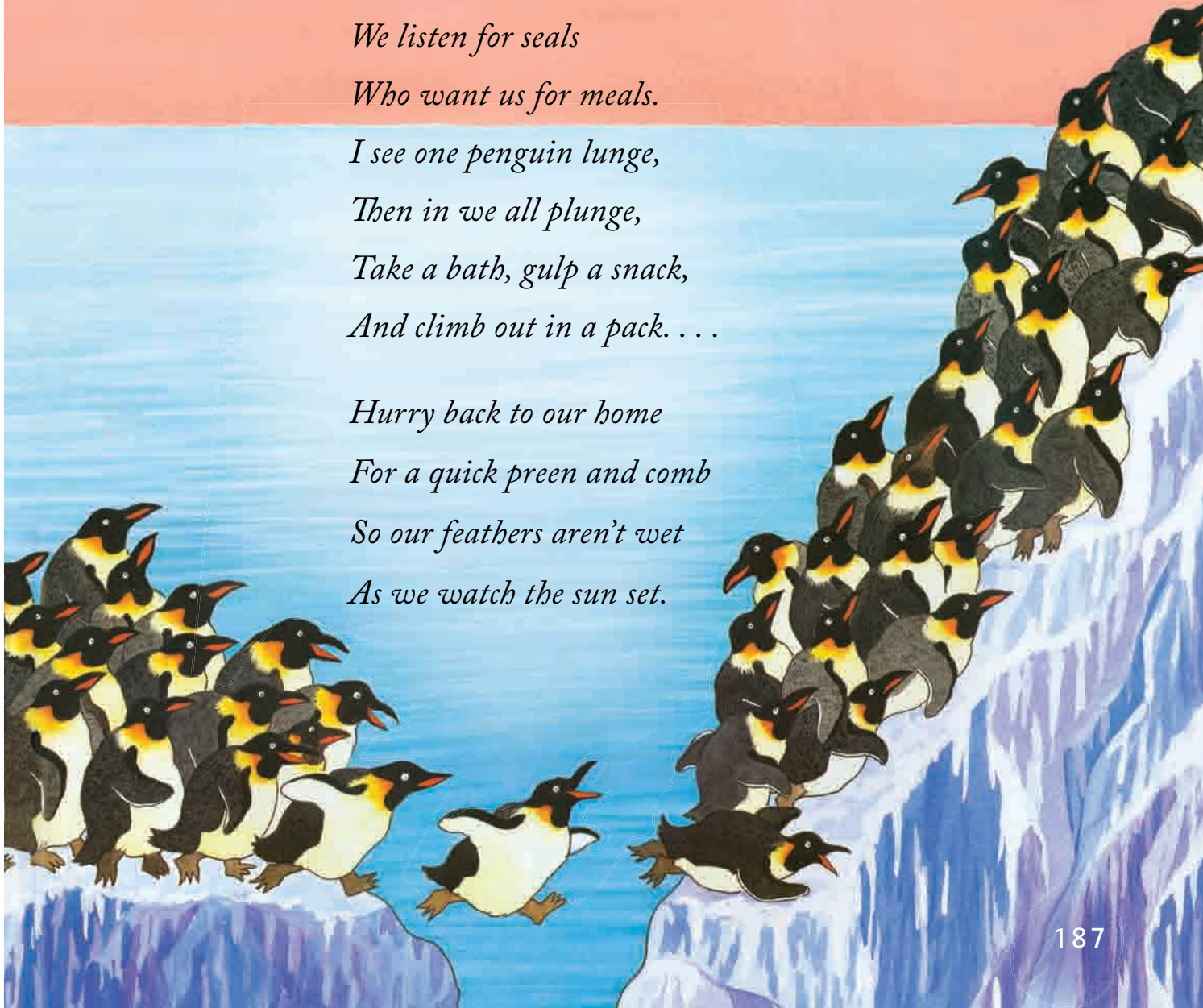
Jose Aruego and Ariane Dewey



*At the first hint of dawn
I awake with a yawn
And follow my cousins
(All thirty-three dozen)
To the end of the land,
Where we stand and we stand,
Playing who'll-dive-in-first,
And, fearing the worst,
We listen for seals
Who want us for meals.*

*I see one penguin lunge,
Then in we all plunge,
Take a bath, gulp a snack,
And climb out in a pack. . . .*

*Hurry back to our home
For a quick preen and comb
So our feathers aren't wet
As we watch the sun set.*

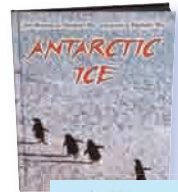




Connections

Comparing Texts

1. How is the author's purpose for writing "Antarctic Ice" different from the author's purpose for writing "Diary of a Very Short Winter Day"?
2. What surprised you about Antarctica? Why?
3. What makes it difficult to survive in Antarctica?



Vocabulary Review

Rate a Situation

Work with a partner. Read aloud each sentence and point to the spot on the line that shows how you would feel. Discuss your answers.

comfortable ————— uncomfortable

- You are in a room with **dim** light.
- An umbrella **shelters** you from the rain.
- You lived in a desert where water was **scarce**.

absence

shelters

permanently

drifts

scarce

dim

Fluency Practice

Partner Reading

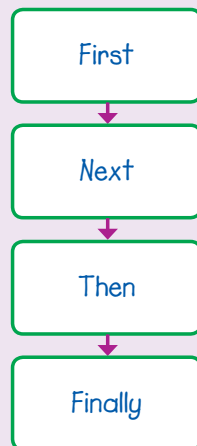
With a partner, choose a paragraph from “Antarctic Ice.” Take turns reading your paragraphs to each other. Remember that when you read nonfiction, you may need to read a bit more slowly. If you make a mistake, reread the sentence correctly.



Writing

Write an Explanation

Think about what Adélie penguins do in Antarctica during the short summer. Write a paragraph that explains the sequence of events.



My Writing Checklist

Writing Trait

Fluency

- ✓ I use a sequence chart to plan my writing.
- ✓ My explanation is clearly written.
- ✓ I use conjunctions to connect parts of my sentences.