

# MYSTERIES OF ANTARCTICA

by Karen Lewis

Welcome to  
Antarctica!

Some call this place a penguin's playground, the end of the Earth, or the frozen frontier.

Temperatures here never climb above freezing. Only a small amount of the land is free from ice, including several active volcanoes.

If you visit the South Pole, you can "walk around the world (visit every time zone and longitude) in just a few steps," according to Scott Sandford, a scientist who has been there. (To find out how he does it, look at Antarctica on a globe.)

Summer at the South Pole is from October to March, with daylight 24 hours a day. In the winter months, darkness rules. "During the dark winter months, we often see an auroral display. Green, orange, and red clouds of gas dance their way across the sky," notes Neil Farnell, a young electronics engineer. He lives on the Brunt Ice Shelf at Halley Station, where the British Antarctic Survey collects information about weather, the air, and the planets. Antarctica is our driest continent, with only about three inches of snowfall each year. Even so, Antarctica's glaciers hold

Emperor penguins.



about three-fourths of all the fresh water on Earth. Icebergs larger than the big island of Hawaii sometimes break off from the ice shelves.

"There are special winds in Antarctica called the katabatics. The wind blows up to 200 miles per hour, and the chill factors are very low," says Diane Di Massa, an oceanographic engineer.

"This makes it difficult and dangerous to do research here."

Despite the harsh climate, Antarctica is home to some very small life forms. Algae live along the coastlines inside sea ice. They survive in salty brine channels during the dark winter. In springtime, when sea ice melts, algae flow into the ocean. These cells, also called phytoplankton, absorb sunlight and carbon dioxide to grow. They are the basis of an important food chain.

Next on the food chain are krill, which look like small red shrimp. Krill are a favorite food of Earth's largest mammal, the endangered blue whale. Blue whales migrate to the southern oceans to eat this rich

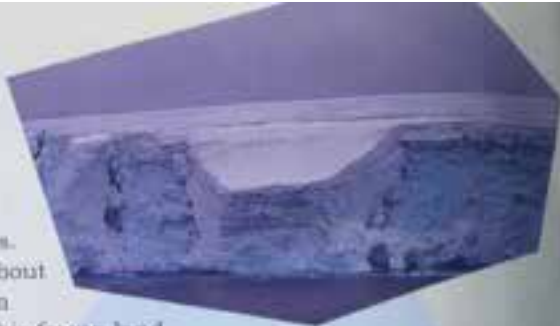


food. Other animals that visit Antarctica include penguins, seabirds, seals, and other types of whales.

Each summer, about 4,000 scientists from many nations visit this frozen land to do research. Antarctica is not "owned" by any one country. Instead, it is governed by an international treaty. People live on ships, called ice breakers, or at land-based research stations. Their supplies and food must all be shipped or flown in. The

scientists work hard to make sure that human visitors do not pollute this fragile place.

Since 1976, the Antarctic Search for Meteorites program (ANSMET) has hunted for clues about how and when our solar system formed. Scott Sandford has been a team



Elephant seals and King penguins.



member on three ANSMET field trips. "I've probably found over 300 meteorites, and I get excited every time," he says. "One of our team's most surprising discoveries was a meteorite that was a piece of Mars. Another was a piece of the Moon."

One reason so many meteorites can be found on Antarctica is that the background is white or blue ice. The uneven shape and dark, often glossy surface of a meteorite stands out.

Dinosaur fossils have also been found. Millions of years ago, Antarctica was not covered with glaciers. Plants and trees grew in a warm rain forest. Scientists think that at that time, the southern continents were linked as one land mass called Gondwanaland.

Even though Antarctica is no longer connected with other continents, we all are linked by fragile ocean systems, the atmosphere, and a special place in the universe. Humans have been exploring Earth for thousands of years, yet we still have

many mysteries to solve.



Emperor penguins.

