VOICES OF EARTH—MAN'S ENVIRONMENT

CALIFORNIA STATE SERIES

VOICES OF LIFE

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CONTENTS

TO THE STUDENTS

You and your teacher will find many ways to use *Voices of Earth—Man's Environment.* To help you get started, here are some ideas for using each part of the book.

THE PICTURES. The pictures are an important part of every Learning Unit in the book.

Before you do any reading, study each picture carefully. Then ask yourself:

What is this a picture of?

What time and place are represented?

Why is this picture in this Learning Unit?

THE GLOSSARY BOXES. These boxes contain definitions of words in the text. Each word in the glossary boxes is printed in *italics* in the text.

> **italic type**—printed letters that slope to the right.

THE DISCUSSION CIRCLES. In these circles, you will find questions to think about and discuss with the other students in your class. For many of the questions, there is no "right" answer; the questions are there chiefly to help you launch your class discussion.

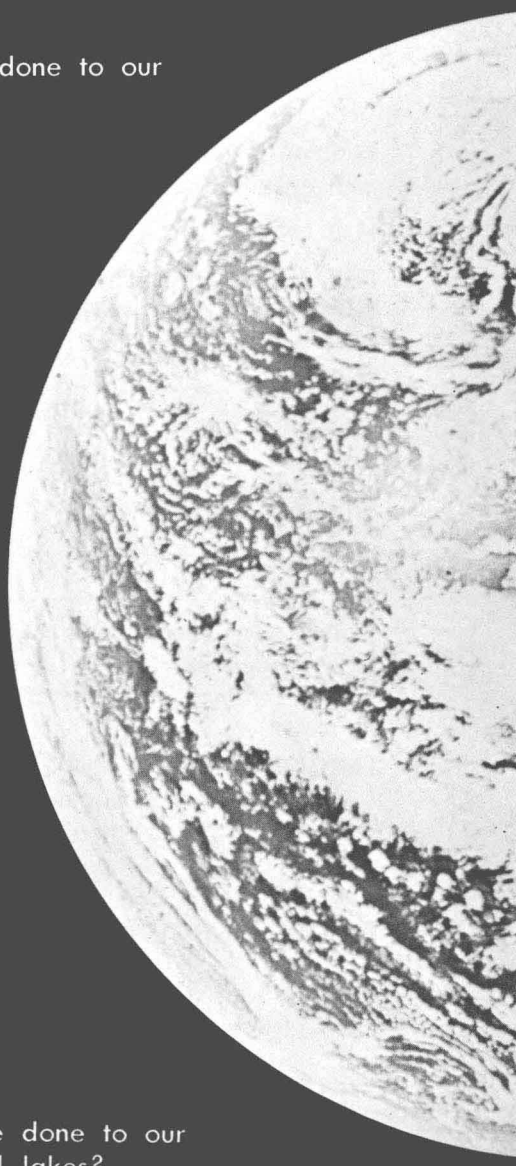
THE RESEARCH TRIANGLES. In these triangles, you will find instructions for conducting your own research on something that is closely related to the text.

THE DISCOVERY BOXES. In these boxes, you will find instructions concerning something to do that will increase your understanding of the Learning Unit as a whole.

What have we done to our
air?

What have we done to our
trees?

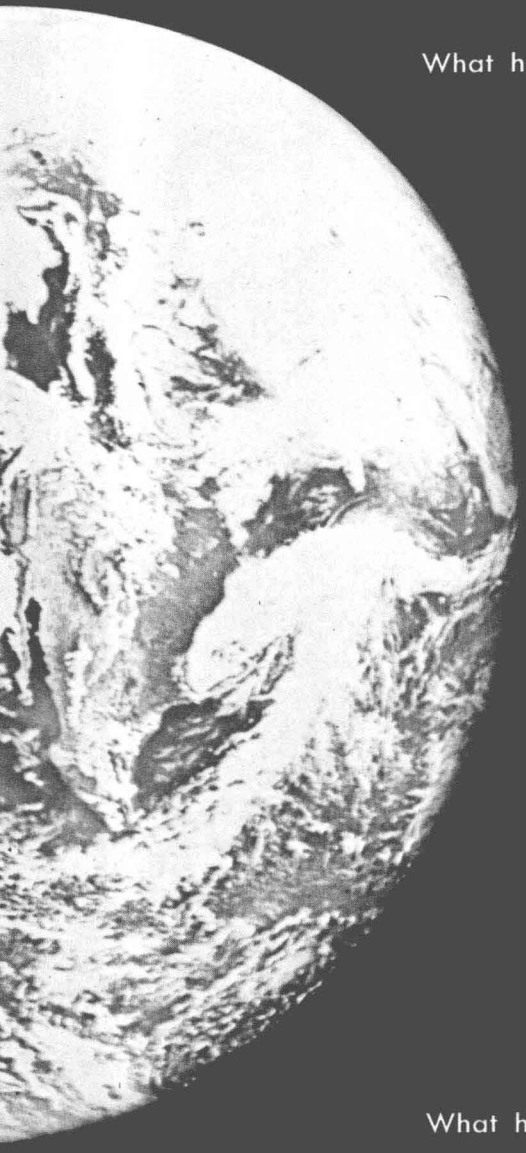
What have we done to our
other plants?



What have we done to our
rivers and lakes?

What have we

TO OUR PLANET EARTH?



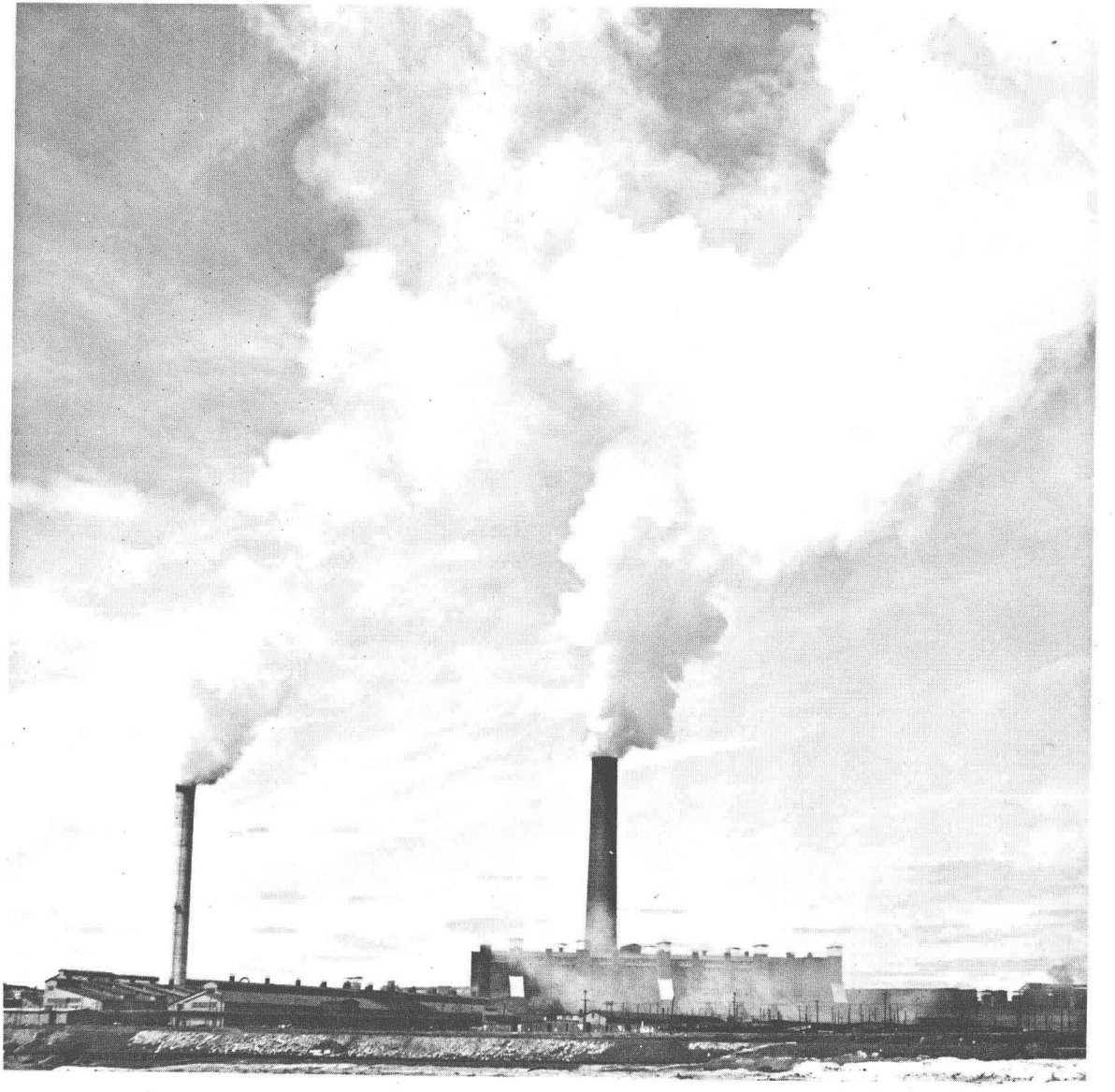
What have we done to our
oceans?

What have we done to our
hills and mountains?

What have we done to our
fields and valleys?

What have we done to our
cities?

done to our quiet?



Section One

What Have We Done to Our Air?

What is air? Why do we need it?

What is food? Why do we need it?

Find out what makes green plants green.

Find out how many people in your family know that green plants produce oxygen.

Plant two similar plants in separate flowerpots. Put one plant in the light and one plant in the dark. Watch to see what happens.

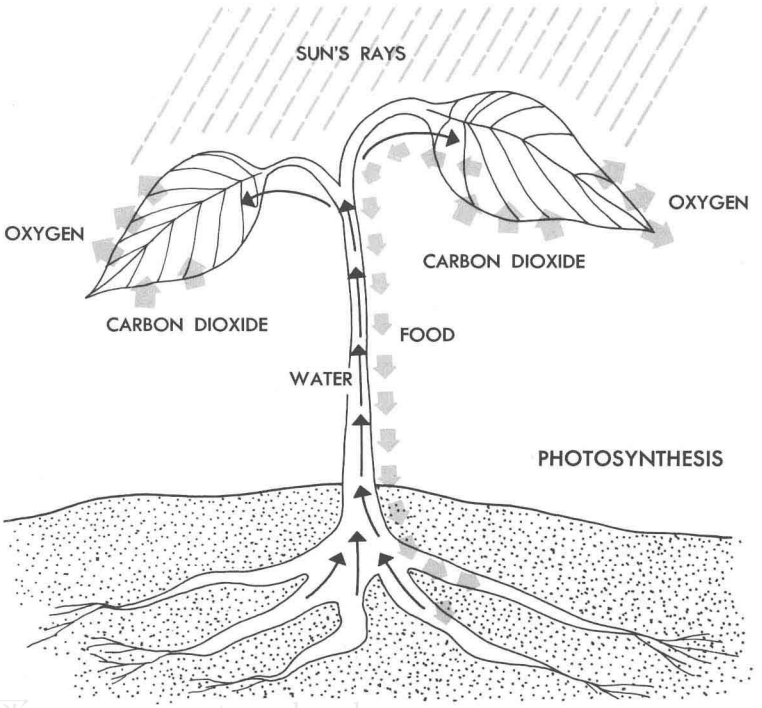
Without air, there would be no life on our planet Earth.

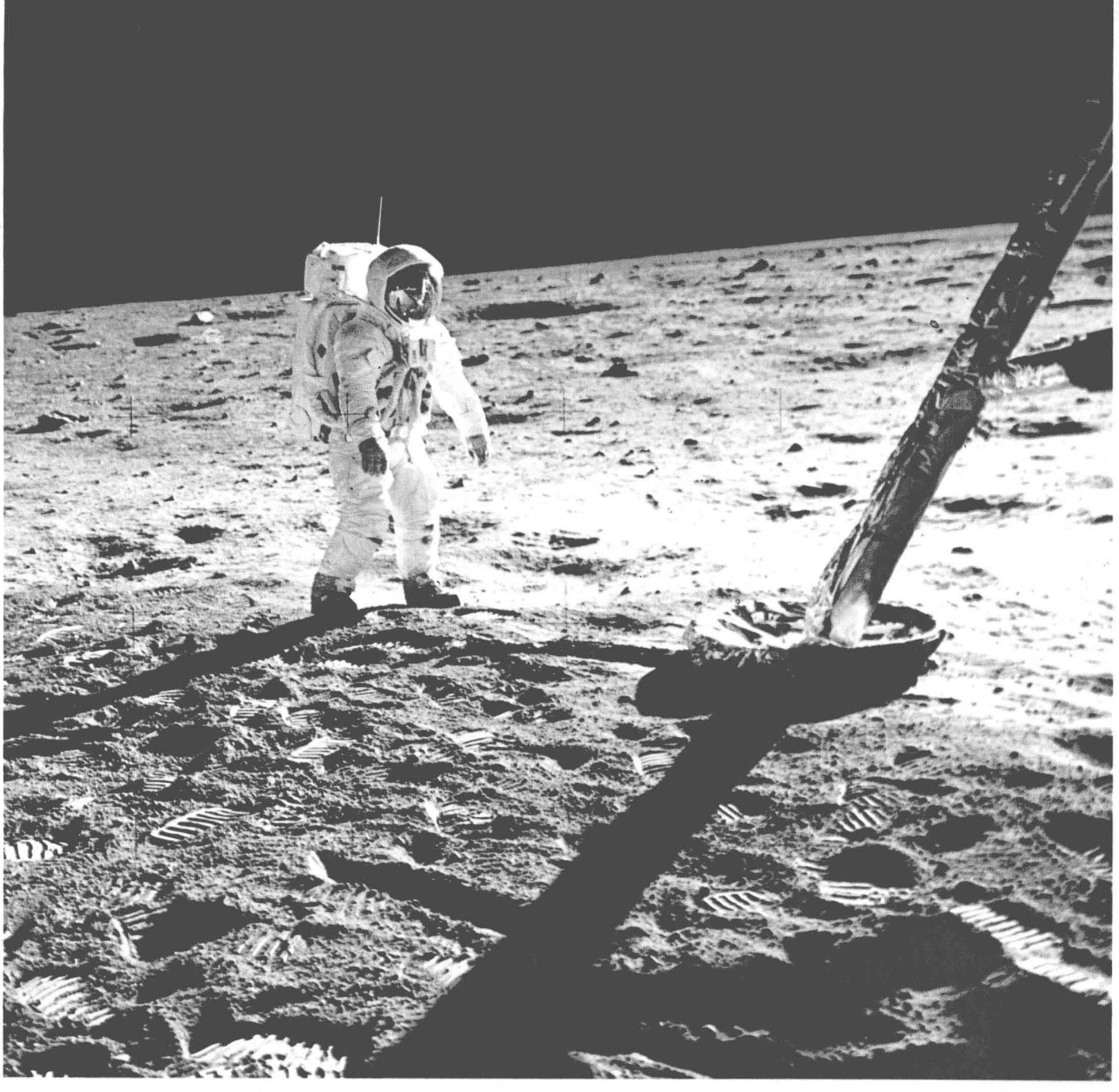
If there were no air, man could not breathe. If there were no air, green plants could not grow.

If there were no green plants, there would be no way of getting enough *oxygen*. If there were no green plants, there would be no food for man and other animals to eat.

Without air and plants, the surface of Earth would be as bare as the surface of the moon.

oxygen — a colorless gas that makes up about one-fifth of air.





Astronaut Aldrin on the Surface of the Moon

How and why does man pollute the air?

How do internal-combustion engines pollute the air?

Find out why some automobile engines pollute the air more than others do.

Find out how the city of London, England, got rid of the worst of its air pollution.

Hold a piece of clean white paper near the end of an exhaust pipe while the engine is running. What happened?

Post on your class bulletin board newspaper stories about air pollution.

In spite of the fact that man needs good, clean air in order to be healthy, man *pollutes* the air. In and near large cities, a heavy layer of smog often hangs over everything. Sometimes the smog is so bad that people's eyes burn, and they have trouble with their breathing.

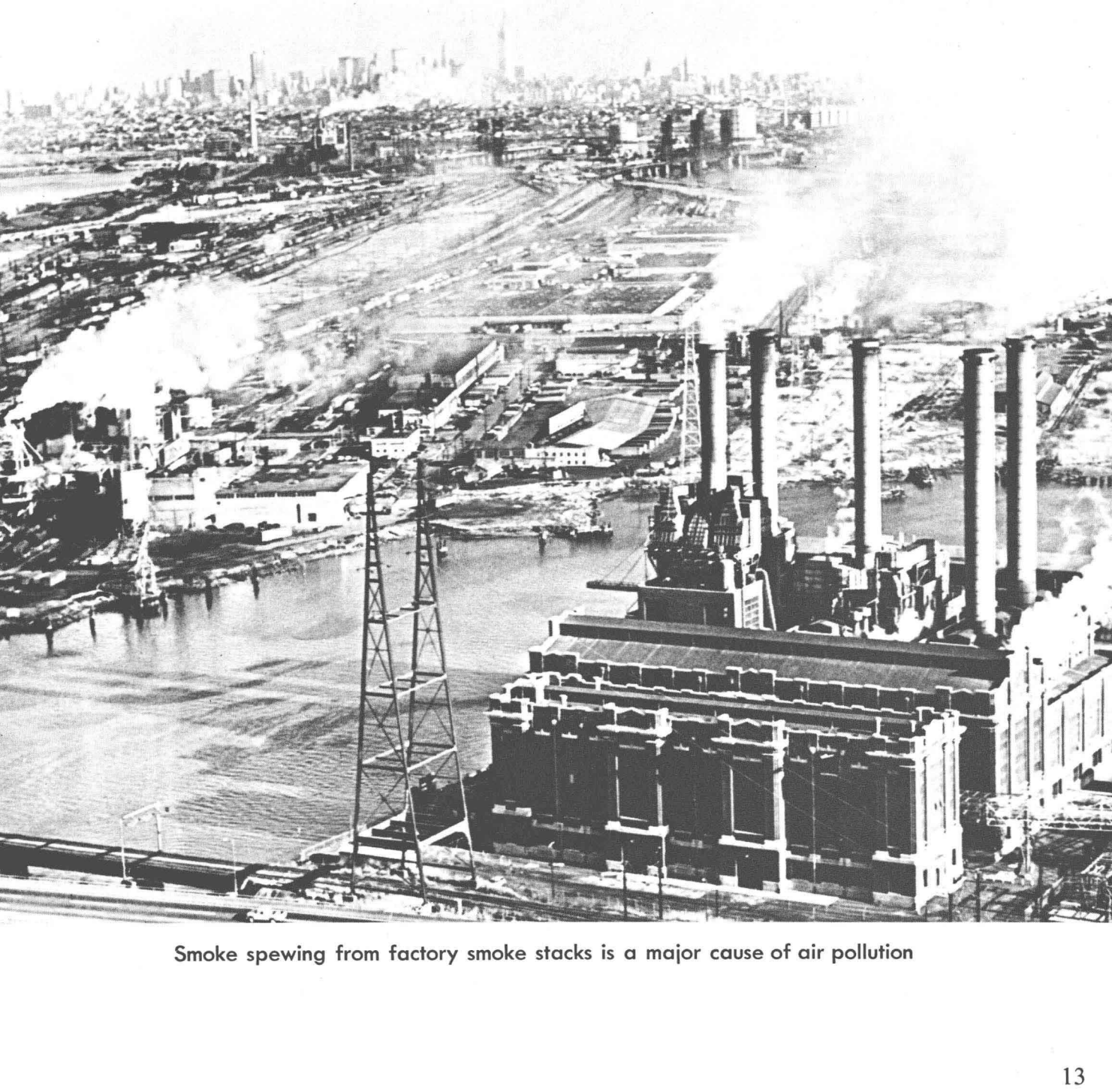
What causes smog? Automobiles, trucks, and buses are the biggest source of smog. Their *internal-combustion* engines pour out gases and soot that foul the air.

The internal combustion engine is not the only cause of smog. Factories, oil *refineries*, and other parts of industry also foul the air. Backyard burning causes smog, too.

Many cities have passed laws to stop backyard burning. Some cities have stopped the worst of air pollution from factories. But very little has been done so far to cut down on *exhaust* from internal combustion engines.

pollutes — makes dirty or impure.
internal-combustion — pertaining to a heat engine in which heat is produced by burning inside the engine.
refineries — places where raw materials are purified to produce usable products.
exhaust — the gases and other matter that escape from an engine while it is running.

Make a picture booklet showing how man pollutes the air. Take your booklet home to show to your family.



Smoke spewing from factory smoke stacks is a major cause of air pollution

Why are poisonous sprays dangerous?

How do sprays pollute air, water, and food?

Find out if there are sprays that are not poison.

Draw a small circle on a big sheet of paper. Spray the circle with a can of spray paint. What happened?

Another thing that pollutes our air is spraying. In fields, orchards, and *vineyards*, farmers spray plants to kill insects and plant diseases. Farmers and other people also use sprays to kill weeds.

When plants are sprayed, part of the spray goes into the air and drifts away. People who are some distance from the spraying are often made very sick from breathing the drifted spray.

Some of the *poisonous* spray also gets on the parts of plants that people eat. Often it is impossible to wash this poison off with water.

Poisonous sprays get into the soil, too. Part of the poison is sometimes washed into rivers and lakes. This poisons the water that people need.

vineyards — places where grapevines are planted.
poisonous — containing poison.

Fluoride Injury to a Cherry Plant

In addition to polluting air, food, and water, spraying can upset the balance of nature in still another way.

Some insects eat plants that man wants, such as fruits and vegetables. Man sprays the plants to kill harmful insects. Man kills insects—both harmful insects and helpful insects.

Bees and ladybugs, for example, are helpful insects. When bees and ladybugs are killed, man has killed his friends as well as his enemies. In doing this, man has upset the balance of nature.

What is the balance of nature?

How can killing insects upset the balance of nature?

Find out why bees are important in the plant world.

Find out why some flowers need to be pollinated by insects.

Find out what makes ladybugs man's friend.

Find a plant with ladybugs on it. Are there any aphids on the plant?

Watch bees flying to and from flowers. What are they doing?