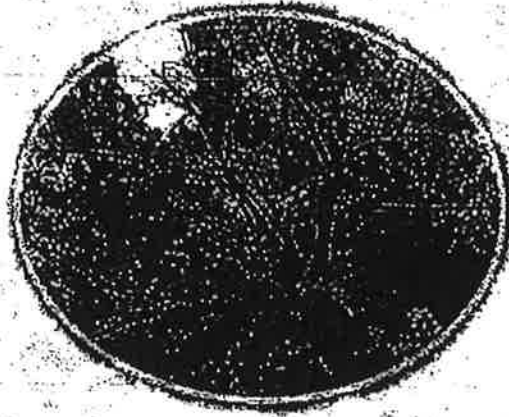


The Life Cycle of a Tree

by Luke Bierman

HOUGHTON MIFFLIN HARCOURT

The Life Cycle of a Tree



by Luka Berman



HOUGHTON MIFFLIN HARCOURT

PHOTOGRAPHY CREDITS: R Creation/Getty Images; 1 ©Design Pics Inc./Alamy; 2 Corbis; 3 © Stephen Street/Alamy; 4 ©Daniel Dempster Photography/Alamy; 4 ©Organics image library/Alamy; 4 ©Ellen McKnight/Alamy; 4 ©david tipling/Alamy; 4 ©Peter Titmuss/Alamy; 5 DAI/Getty Images; 6 ©Design Pics Inc./Alamy; 7 ©Dennis Flaherty/Alamy; 8 ©zdspics/Alamy; 10 ©Cody Duncan/Alamy; 11 ©Dennis Frates/Alamy; 12 ©Robert Harding World Imagery/Alamy; 13 ©Philip Scalla/Alamy; 14 ©Geoff du Feu/Alamy.

Copyright © by Houghton Mifflin Harcourt Publishing Company

All rights reserved. No part of this work may be reproduced or transmitted in any form or by any means, electronic or mechanical, including photocopying or recording, or by any information storage and retrieval system, without the prior written permission of the copyright owner unless such copying is expressly permitted by federal copyright law. Requests for permission to make copies of any part of the work should be addressed to Houghton Mifflin Harcourt Publishing Company, Attn: Contracts, Copyrights, and Licensing, 9400 South Park Center Loop, Orlando, Florida 32819.

Printed in the U.S.A.

ISBN: 978-0-547-88980-4

1 2 3 4 5 6 7 8 9 10 XXXX 21 20 19 18 17 16 15 14 13 12

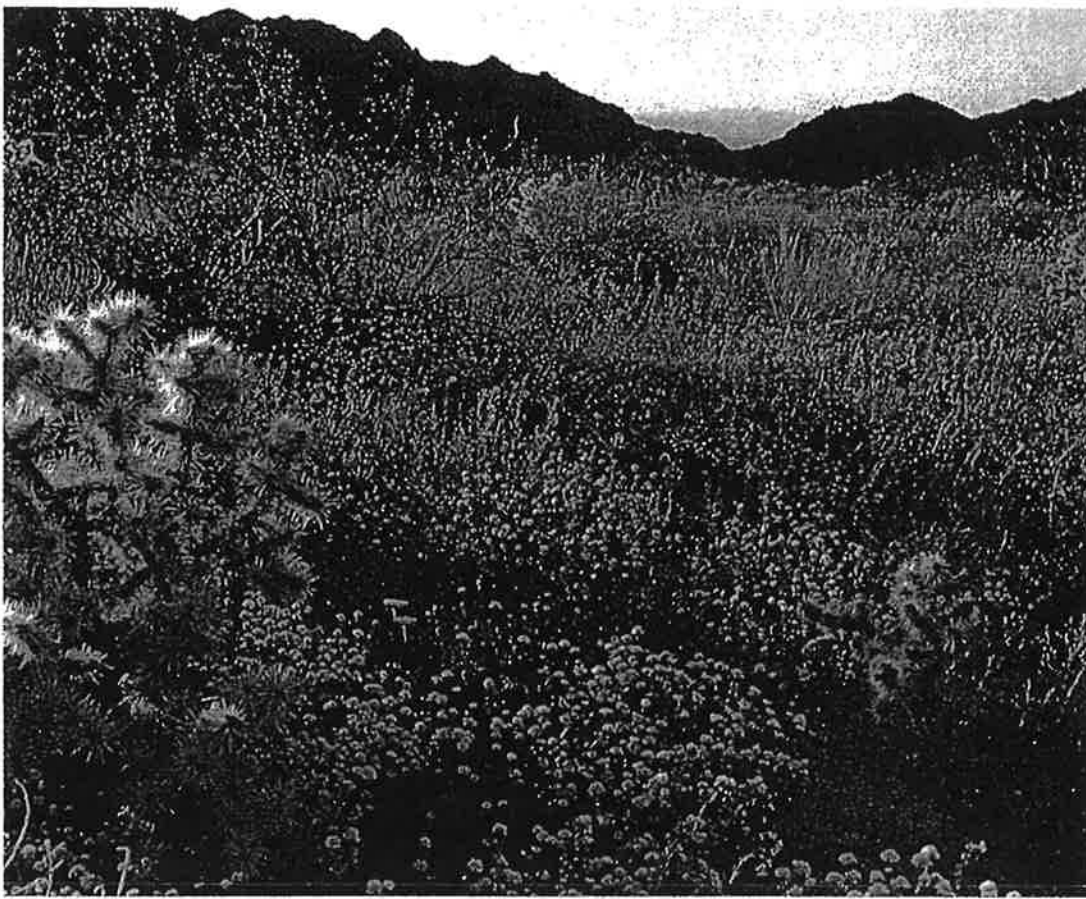
4500000000

A B C D E F G

If you have received these materials as examination copies free of charge, Houghton Mifflin Harcourt Publishing Company retains title to the materials and they may not be resold. Resale of examination copies is strictly prohibited.

Possession of this publication in print format does not entitle users to convert this publication, or any portion of it, into electronic format.

Copyright © 2017 by Houghton Mifflin Harcourt Publishing Company



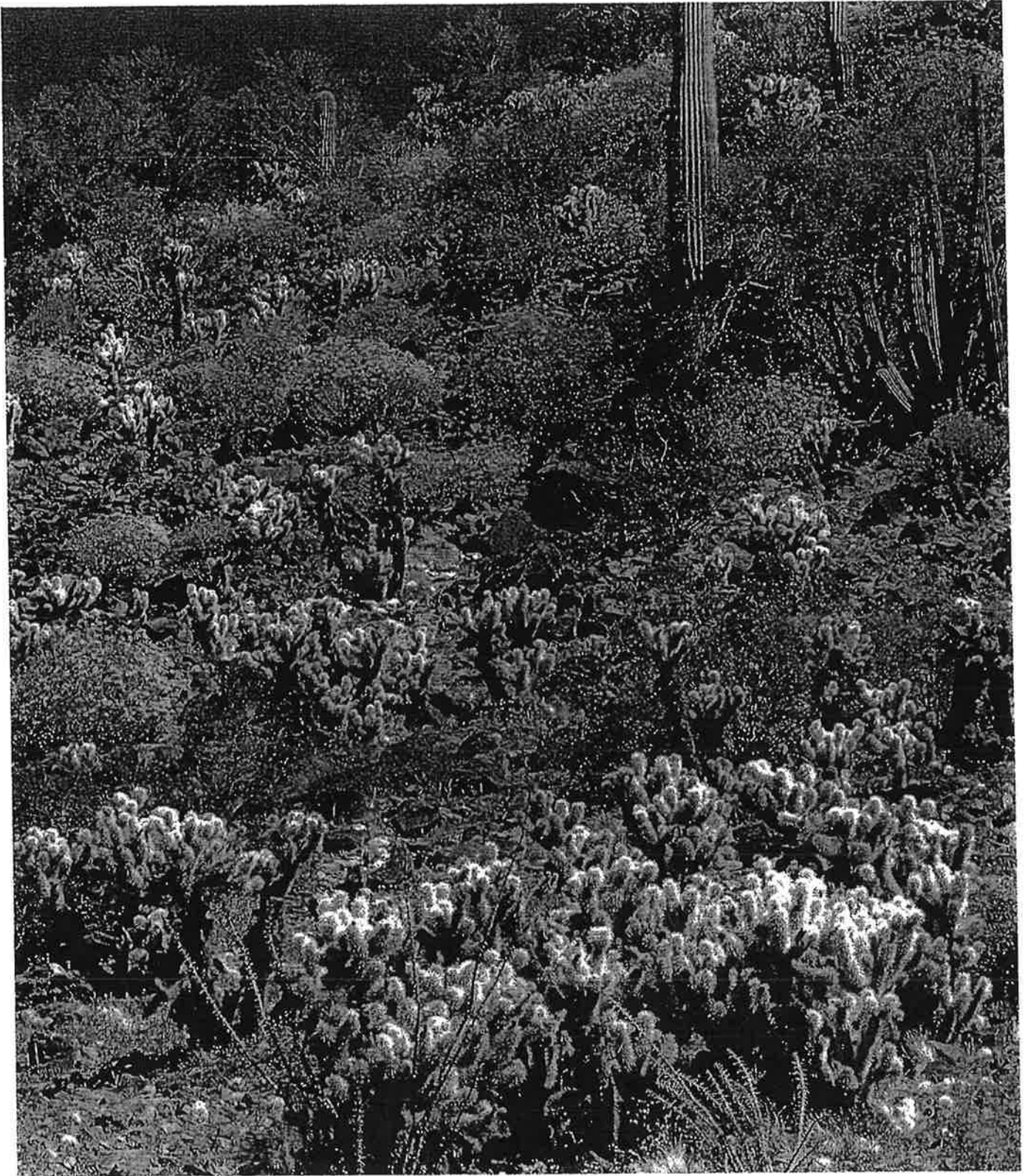
A Plant Called Cactus

The desert is a hot, dry place. It gets very little rain. Plants need water to live. How do plants survive in the desert?

Only some kinds of plants can grow in a desert environment. These plants have adapted to the hot temperatures and lack of rain.

The most common desert plant is the cactus. Take one look and you can tell a cactus is not like other plants. For one thing, it usually has no leaves! There's a good reason for that.

**Many types of cactus grow
in the desert.**



Copyright © 2017 by Houghton Mifflin Harcourt Publishing Company

Finding Water and Food

Water evaporates easily through a plant's leaves. That means the water goes out into the air instead of staying in the plant. Without leaves, a cactus can keep more water inside it.

Leaves help most plants get their nutrition. Leaves make food from sunlight, air, water, and minerals. Since a cactus often has no leaves, its stem and outer surface do the job of making food.

A cactus is unlike other plants in another way. It has short roots. Why? A cactus's short roots are close to the surface of the ground. That means they can soak up rain almost as soon as it falls. The faster, the better!

outer surface

stem

roots

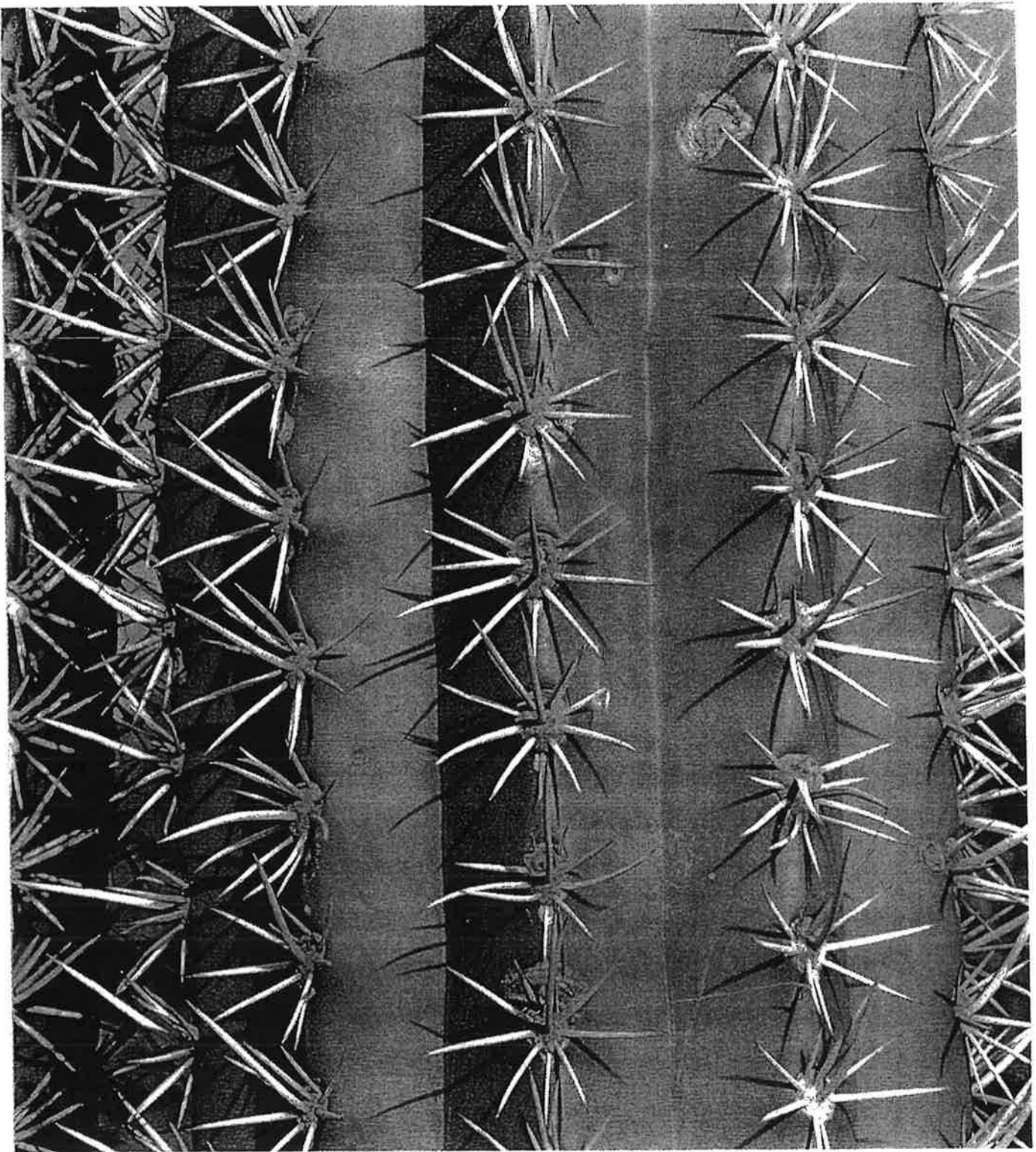
Surviving in the Desert

After the cactus's roots absorb water, they can store it for a long time. The cactus stem can store water too. The stem has a waxy skin, or outer layer. That also helps hold water in. When you think about it, a cactus is almost like a large, prickly water bottle.

A cactus can survive for years from the water it collects in just one rainfall! That's a useful skill in the desert.

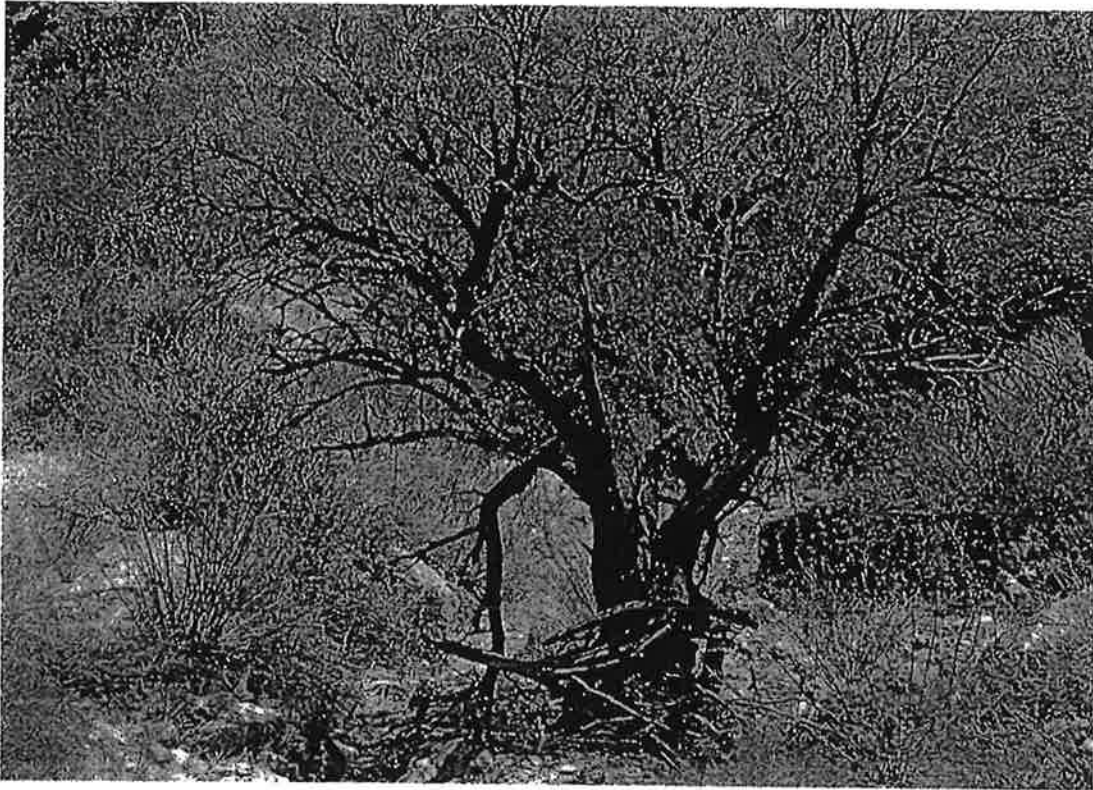
Many kinds of cactus have sharp spines. How does being prickly help a cactus survive? Spines help absorb water when it rains. They also give the cactus some shade from the hot desert sun.

Most importantly, spines protect the cactus from hungry desert animals. Animals may think the cactus looks tasty. They will have a hard time taking a bite out of it, though!



Prickly spines help protect the cactus.

**Trees have special ways
to survive in the desert.**



Desert Trees

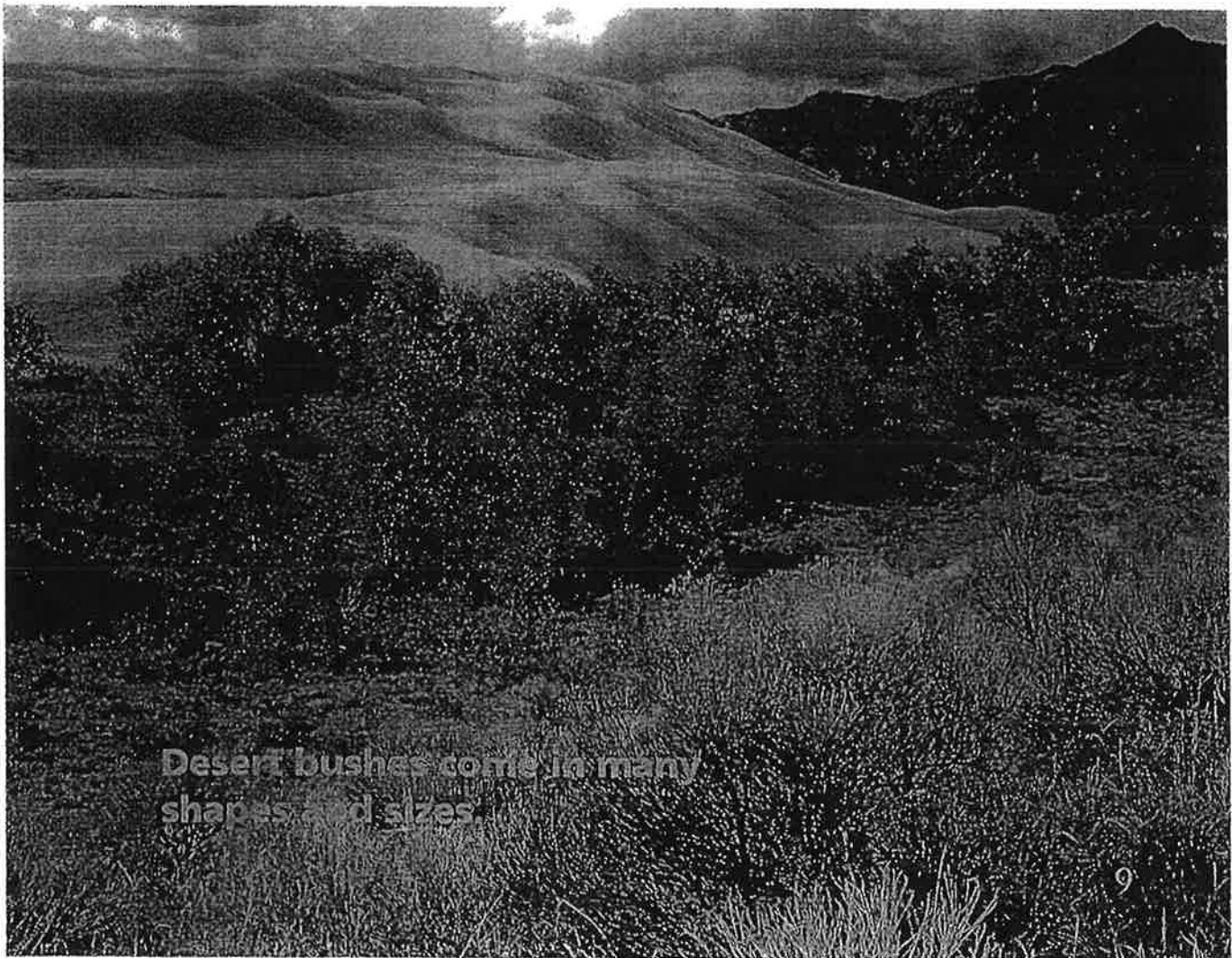
The cactus may be the most famous desert plant, but it is not the only one.

Trees grow in the desert too. Unlike a cactus, a desert tree has long roots. Why? Long roots help desert trees reach water that is deep underground. One type of desert tree has roots that are up to 80 feet long!

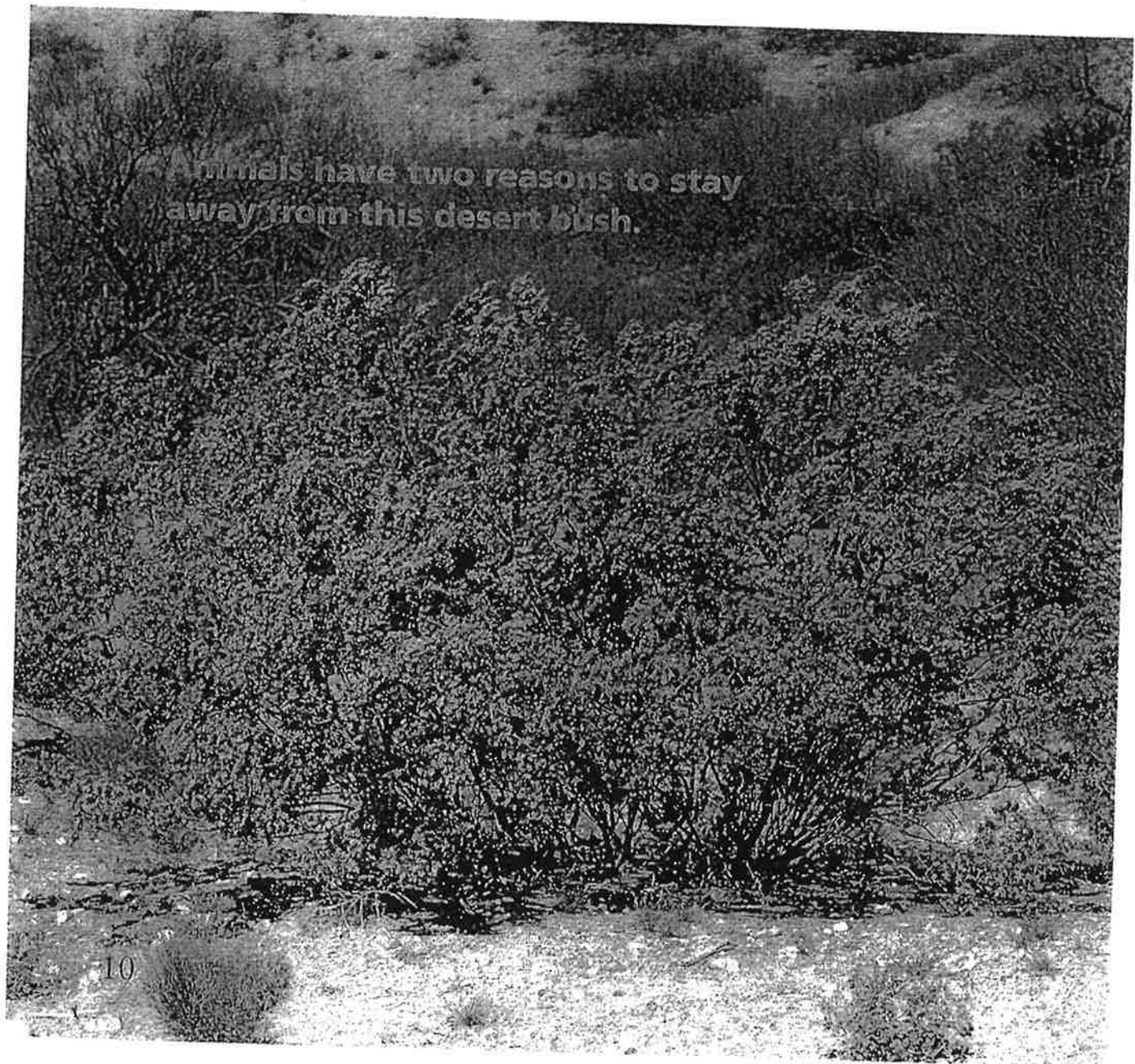
Desert Bushes

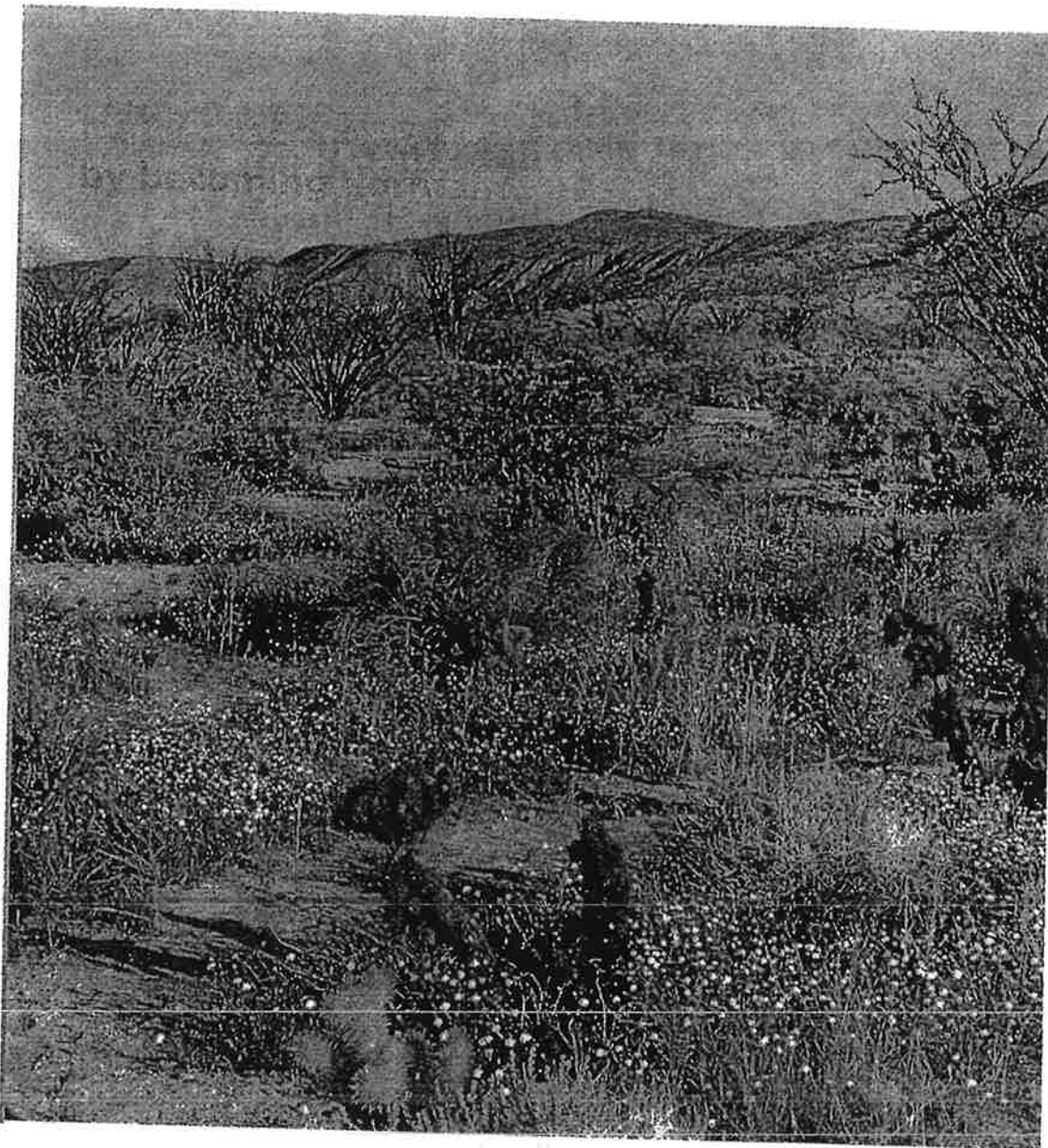
Bushes grow in the desert too. Some of them have adapted to the hot, dry environment even better than the cactus or desert trees. What is their secret?

Some desert bushes have short roots, like a cactus. They also have very long roots, like a desert tree! That means they can soak up new rainfall as well as water deep underground.



One type of desert bush has a special way to protect itself from hungry animals. It doesn't have spines, like a cactus. Instead it has a very bad smell! Some animals ignore the smell and bite into the bush. Then they get a surprise. The bush has a very bad taste, too!





Waiting for Rain

Other desert plants have their own special ways to survive. Some plants become dormant during long periods without rain. Being dormant is a lot like hibernating. That's what bears do in the winter.

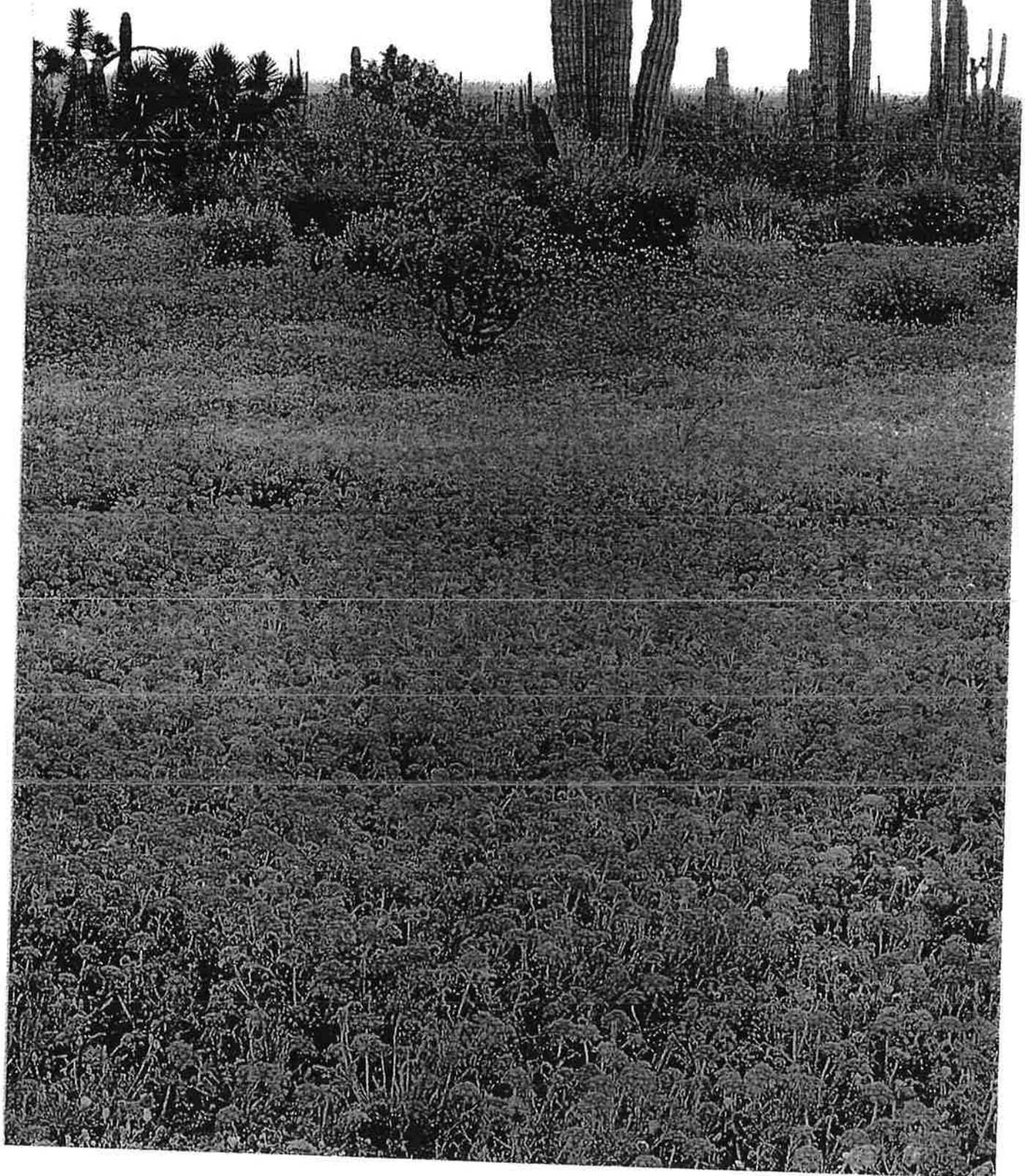
After the Rain

When desert plants are dormant, they don't need to take in water or make food. They rest and save energy. Then, when the rain comes again, the plants wake up!

Some kinds of desert plants grow and die very quickly. In the spring, when there is just the right amount of sunshine and rainfall, these plants suddenly sprout up from the sandy desert soil.

The small shoots appear and then blossom in only a few days' time. The plants are not large, but they are colorful. Their beautiful flowers brighten and soften the desert landscape.

**In spring, the desert
comes alive with color.**



Copyright © 2017 by Houghton Mifflin Harcourt Publishing Company

https://www-k6.thinkcentral.com/content/hsp/reading/journeys2014/na/gr2/strategic_intervention_9780547896175/_lr/al/lesson25/index.html

Bats and bees visit the flowers. They carry away grains of pollen. These creatures will spread some of the pollen to other flowers. That will help the flowers make seeds. After the flowers fade, seed pods appear. Seeds drop from the pods, or the wind picks them up and blows them across the desert.

Meanwhile, the small plants die as quickly as they appeared. Some of them live only a few weeks! Soon, though, many new, amazing desert plants will grow!

