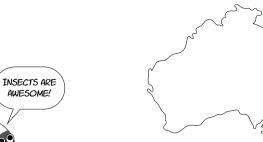
The BUG that saved **AUSTRALIA**



A true story



SCIENCE MMM

just didn't do well in Australia. the idea of cochineal. The little bug After a few years, farmers gave up on kept getting eaten by other insects. nb cochineal farms, but the cochineal Australia. The plants were used to set them on a boat, and carried them to pear plants from South America, put So several farmers took prickly

plants from one area to another. no regulations about transporting didn't exist at this time. There were The concept of an invasive species

who wanted to produce cochineal. was brought to Australia by people In the late 1800s, the prickly pear

But the prickly pear grew great. People planted the cactus as an ornamental around their houses or farms. It was easy to propagate. If you broke off a pad or branch and put it into the dirt, soon you'd have a new

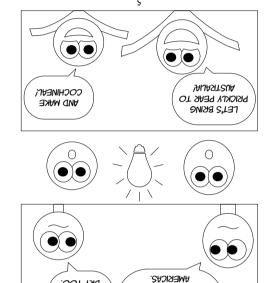
The cactus was spread by birds too: when they ate the fruit, the seeds would pass through, landing with a nice helping of fertilizer miles away from where the parent plant had grown.

After just a few years, people realized that they has a big problem: the prickly pear grew too well in Australia.

acres were cleared of cactus. in Australia, more than 7 million a year of releasing the cactoblastis can eat a lot of cactus. Within just A very hungry caterpillar that



AND THE CACTOBLASTIS



ANA TOH 21

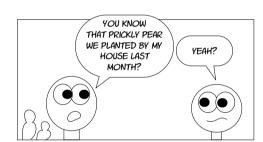
AUSTRALIA

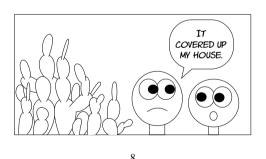
CLIMATE OF THE

IN THE HOT AND DRY

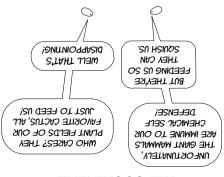
GROWS REALLY WELL

PRICKLY PEAR





perfectly edible to humans. from other insects—but is me" chemical that protects them of carmine, a bright red "don't eat These little scale insects are full



THE COCHINEAL

And there you have a true story that starts and ends with insects:

The prickly pear is a cactus native to the Americas. It is edible, and both the tender new pads and the fruit are used as a source of food. In Mexico the fruit are called *tuna* and the pads nopal.

Prickly pears grow very well in warm climates and are well adapted to drought. They don't have leaves (except for a very brief period when new pads sprout). The stem tissue grows into what are called pads. If these flat disk-like segments are cut off and placed on the ground, they will form roots and grow into a new plant.

CACTUS PLANT. JUICE OF THE DRINKING THE SONS STLLI TAY YJJAUTDA SEE THAT THEY'RE OF MOLD. CLOSELY, YOU'LL WHITE SPLOTCHES BUT IF YOU LOOK COVERED WITH **COOK LIKE ITS** THOM UPA SIHT AT FIRST GLANCE,

At the height of the prickly pear infestation, it covered more than 60 million acres of land. That's bigger than the entire country of Great Britain! It was spreading so quickly, that each year an additional TWO MILLION acres of land were being covered in prickly pear. Entire farms and houses were abandoned because they'd been swallowed up by the cactus.

It grew into dense spiny forests that were enormous. Sheep and cattle couldn't eat the cactus because of the spines, so the cactus ruined the land ranchers were using to graze their animals.

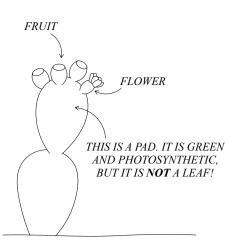
> TOOKING WOLH **CKEK-BKOWN PLAIN** LHE VDOLL:

15

MILH BTYCK SLKIBES OKYNCE CYLEKHITTYK THE LARVA:



Scientific name Cactoblastis cactorum

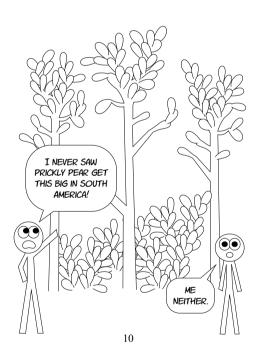


Opuntina ficus-indica IS THE MOST COMMON SPECIES. BUT THERE ARE MORE THAN 120 DIFFERENT SPECIES OF PRICKLY PEAR, MANY OF WHICH CAN HYBRIDIZE AND INTERMIX, GIVING HUNDREDS OF DIFFERENT VARIETIES.

the prickly pear cactus. cocpineal insect, which in turn eats esten the (purified) remains of the carmine or cochineal, then you've colored with E120, Natural Red 4, If you've ever eaten anything

still used in candy and cosmetics and used it to dye cloth, and today it is dye. The Aztec and Maya people pe one of the main sources of red This little scale insect happens to

(scientific name Dactylopius coccus). to a certain bug called cochineal beobje, the prickly pear is rather tasty In addition to being a food for



П

control. and successful examples of biological This story is one of the most famous

infestation was no longer a problem. releasing the moth, the prickly pear pear pads. Within just a few years of moth eats the inside of the prickly The caterpillar of the Cactoblastis

to Australia named Cactoblastis. a group of scientists brought an insect year the infestation grew worse, until seem to make any difference. Each grew back so fast, these efforts didn't and poisoning the prickly pear. But it People tried burning, bulldozing,

\mathbf{B}	A		
B			
F	E	E	b
E	G		