

CONTENTS

6 OUR WORLD | 10 IN FOCUS

14

THE QUEST TO REENGINEER BEER

Biologists in Belgium are modifying yeast to concoct a beverage-industry holy grail: a nonalcoholic brew for beer lovers who hate nonalcoholic brews.

38

TEXAS HORNED LIZARDS ARE EVERYWHERE—EXCEPT WHERE THEY BELONG

The ugly-cute reptiles are Lone Star State icons but disappearing in the wild. A captive-breeding program hopes to change that.

44

ON A MISSION TO KEEP THE BORDERLANDS WILD

As roads, ranches, and a 30-foot-high wall hem in animals near the U.S.-Mexico border, conservationists on both sides strive to protect dwindling wildlife passageways.

70

MAKING THE PERFECT PHOTOGRAPH AT 10,000 FEET

To capture an unforgettable alpine shot, all it took was a grueling Patagonian trek.

72

HOW BRAZIL WENT COUNTRY

With their nation's agricultural economy surging, Brazilians have fallen for the earnest twang of *sertanejo* music—and the cowboy lifestyle it evangelizes.

88

CAN THE BASILICA THAT INSPIRED NOTRE DAME RETURN TO GLORY?

The world's oldest Gothic church is getting its long-lost spire back—although not everyone likes the idea.

96

INTO THE KINGDOM OF SEAHORSES

Seahorses have long been among the ocean's more rarely glimpsed and little understood fish. Now researchers have found a curious Bahamian lagoon flush with them.

108

THE POLES ARE TEEMING WITH MORE LIFE THAN WE CAN SEE

To predict the future of a warming planet, National Geographic Explorer Allison Fong seeks out legions of microbes on ice.

112

THE WOLFKEEPERS

For nomadic Kazakh herders in Mongolia, hunting wolves is both a livestock-protecting necessity and a sacred responsibility.

132 FROM THE VAULT

ON THE COVER

SUBSCRIBER EDITION A lined seahorse bobs in Sweetings Pond, on the Bahamian island of Eleuthera, home to perhaps the world's highest density of the enigmatic fish.

Photograph by SHANE GROSS

NEWSSTAND EDITION At Belgium's KU Leuven Institute for Beer Research, experts are leveraging cutting-edge science in the hope of perfecting nonalcoholic beer.

Photograph by JUSTIN JIN