

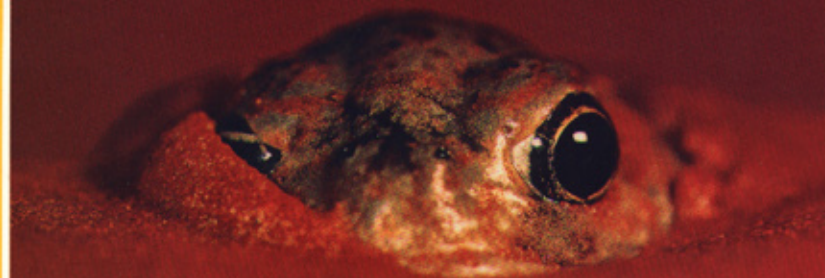
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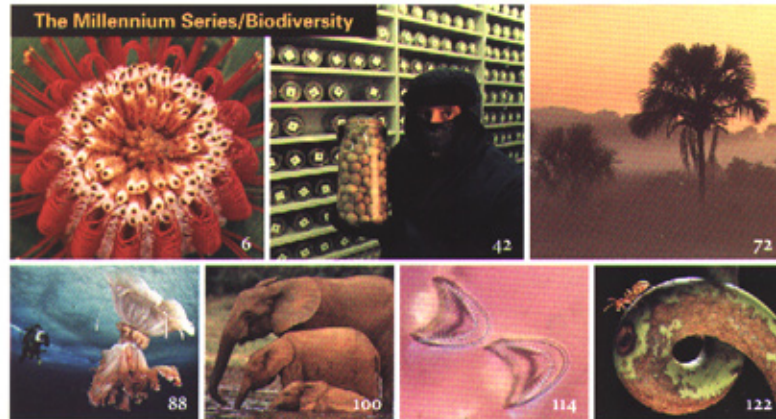
BIODIVERSITY

The Fragile Web

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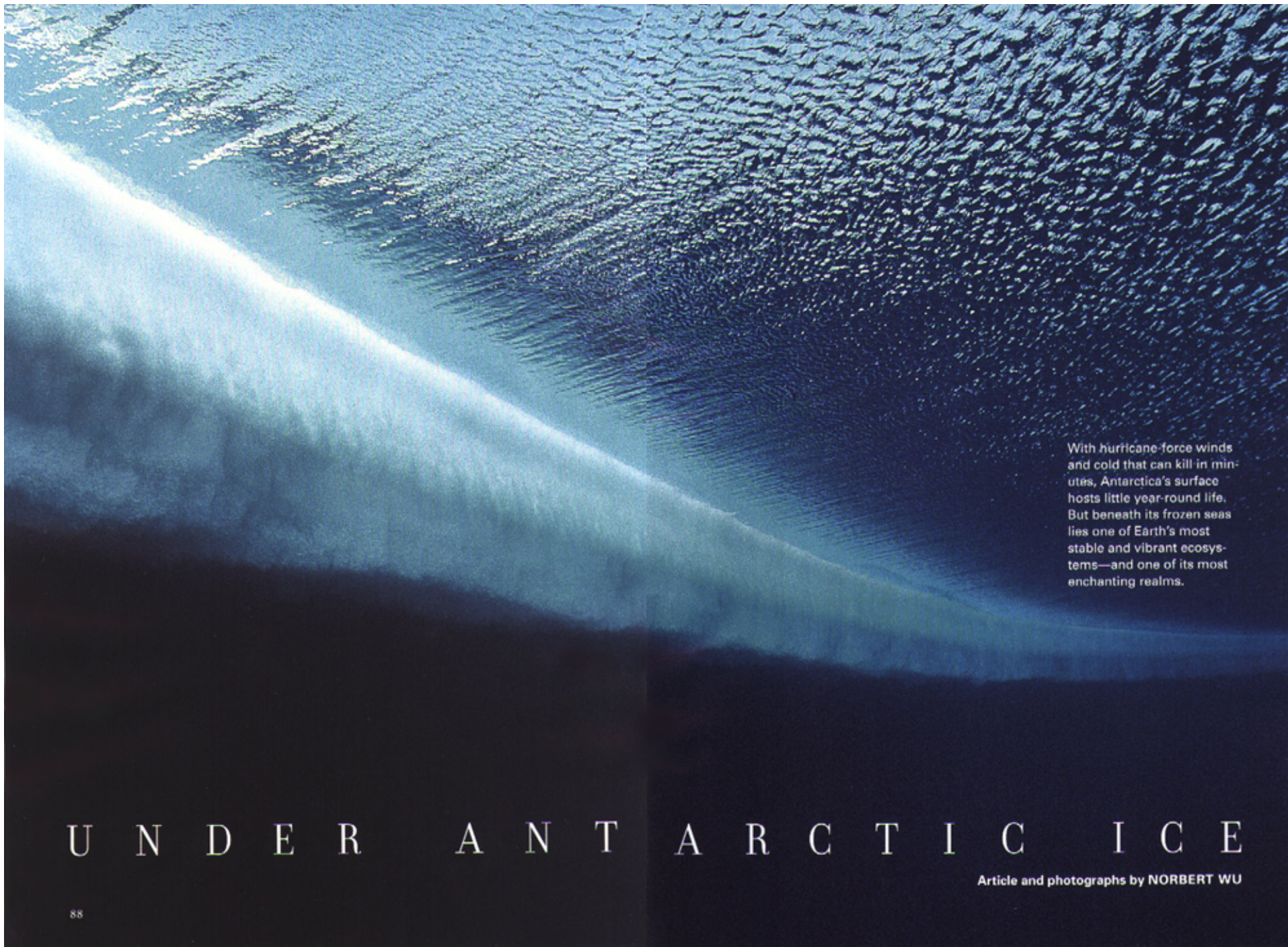
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The Cover

Peering out from red Australian sands, a desert spadefoot frog emerges for a rare drink of water. Photograph by Frans Lanting

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With hurricane-force winds and cold that can kill in minutes, Antarctica's surface hosts little year-round life. But beneath its frozen seas lies one of Earth's most stable and vibrant ecosystems—and one of its most enchanting realms.

U N D E R A N T A R C T I C I C E

Article and photographs by NORBERT WU

"It was like being suspended in space,

as if we were birds flying around in a big room."

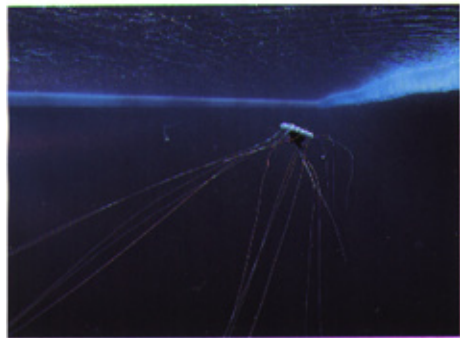
—PETER BRUEGGEMAN

There's something special about peering beneath the bottom of the world. When Antarctica's summer diving season begins in September, the sun has been largely absent for six months, and the water, virtually free of phytoplankton, has become as clear as any in the world. Visibility is measured not in feet but in football fields. "There was no visual awareness of there being water," says my diving colleague Peter Brueggeman. "It was like being suspended in space, as if we were birds flying around in a big room." It felt as cold as outer space too. With its freezing

point lowered by salt, the seawater is as cold as it can get—28.8 degrees F—an equipment-breaking, head-numbing reminder that this is a merciless realm. Yet even an encounter with Antarctica's treachery—when my leg cramped on a dive and the current almost swept me away—couldn't keep me

from falling in love with the place. Of the hundreds of spots I've dived, this one, with its invisible water and crystalline ceiling, stands apart. Only here can you orbit an electric-blue iceberg (right) while being serenaded by the eerie trills of Weddell seals. Only here will you see huge invertebrates—sponges the size of bears or jellyfish with 30-foot tentacles (above). Indeed, these seas are full of surprises. Until recently scientists thought that Antarctica's waters, like the Arctic's, had a relatively low diversity of life; it now appears that Antarctic biodiversity is richer than they had imagined. But you'd never guess it from the surface, and it's this contrast that marine ecologist M. Dale Stokes says struck him most about our dives: "There's this large, active, colorful community under the ice, and then you come up through a hole into a raging blizzard."

Photographer and filmmaker NORBERT WU specializes in ocean exploration.





Weddell seals stake their claim as the world's southernmost mammals by keeping year-round

airholes in the ice. Safe from open-sea predators, this mother and pup show no fear of divers.

Sea stars gather beneath seal holes to feed on feces and other debris. In the barren shallows

where ice crystals form on anything that doesn't move, animals can't afford to be picky.

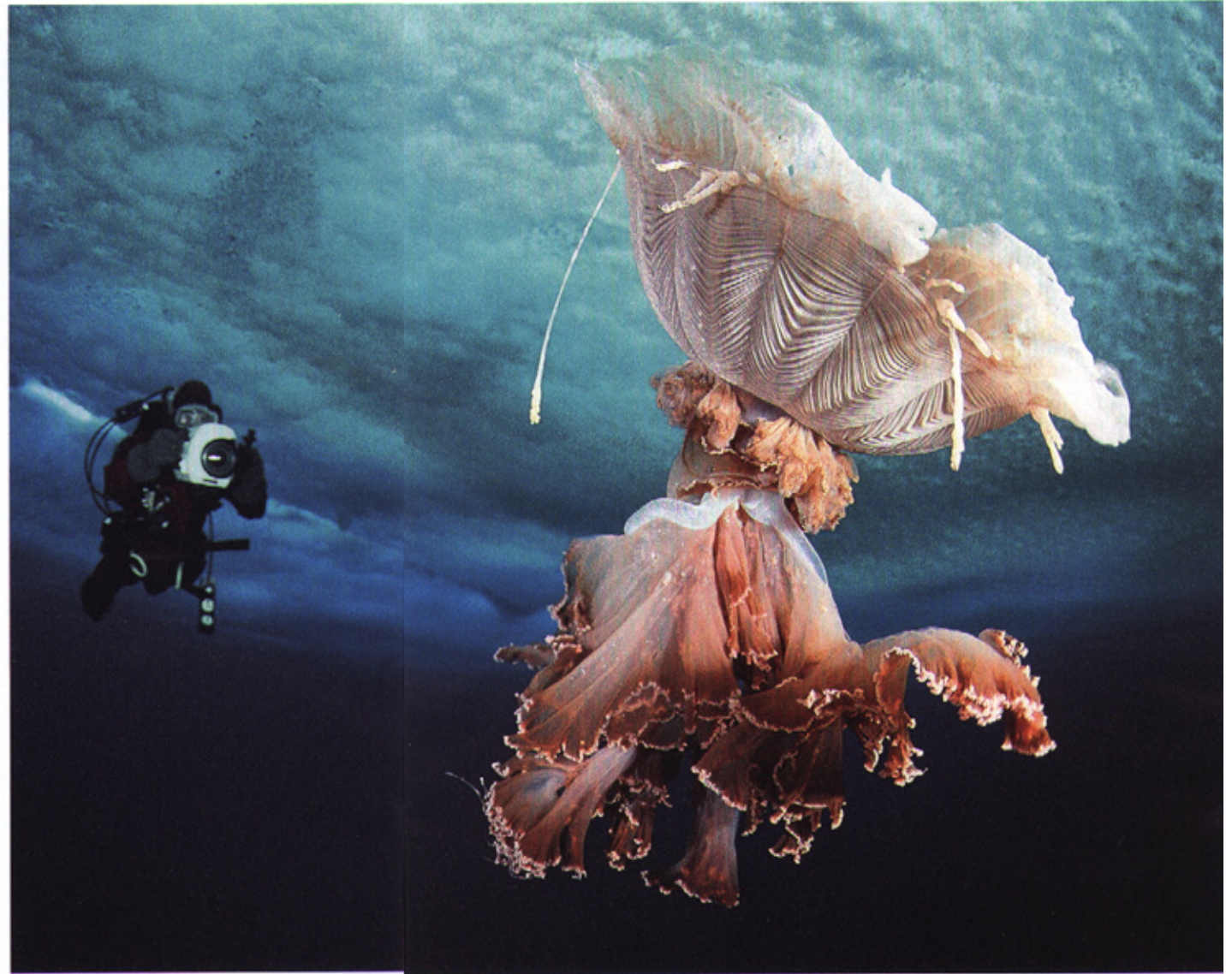


Because it's hard to study life under ice, many Antarctic

creatures are as novel to science as they are to the eye.



With a flamenco flourish, a jellyfish the size of a barrel attracts the camera of oceanographer Stokes. "It was huge—just this big pulsating living thing," he says, "not a helpless little drifter like you think of most jellyfish." With slow metabolisms and relatively few predators, many Antarctic invertebrates grow exceptionally large and live years longer than their cousins in warmer water. The pycnogonid, or sea spider, pictured above is the size of a human hand; most of the 600 pycnogonid species worldwide are smaller than a fingernail. The sea stars on the preceding pages may live as long as 20 years.





Emperor penguins weave contrails of bubbles through a sapphire sea. They need not be so

agile above the ice; all the action—hunting and being hunted—lies beneath it. □