

SCIENCE ILLUSTRATED



**HIDDEN CITIES
OF THE
AMAZON**
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The Brain Explorers

Inside the Cutting-Edge Quest to Map the Human Mind

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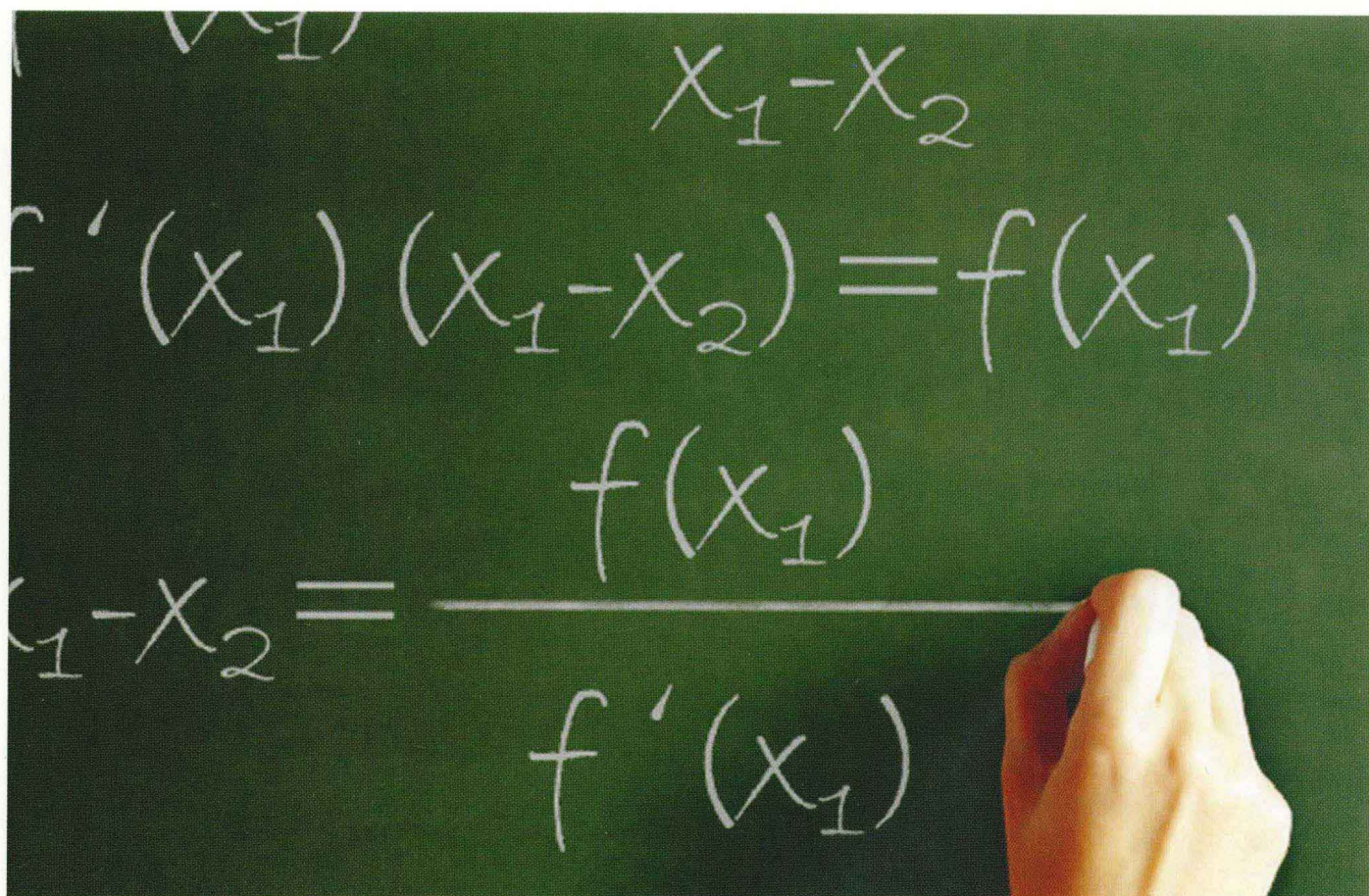
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**The
Odd**

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of the
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March/April 2010 US \$4.99
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Learn how geneticists can engineer a better world, one DNA snippet at a time.

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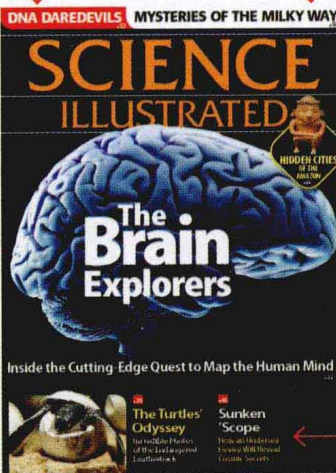
The Spitzer Space Telescope is giving us a new perspective on our own galaxy.

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Meet the innovators behind the most detailed diagram of the brain's circuitry.

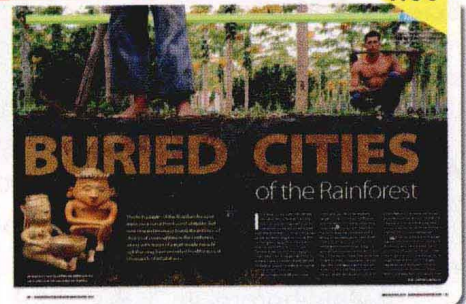


"The more we learn,
the clearer it
becomes that the
brain is more than
the sum of its parts."

常州人书藏
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ARCHAEOLOGY

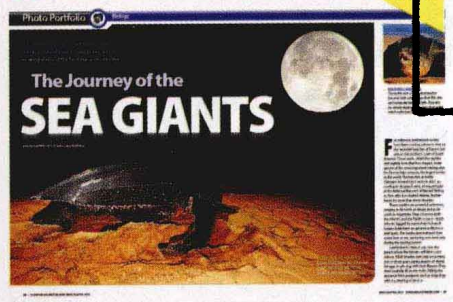
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Did mysterious soil help feed long-lost inhabitants of the Amazon rainforest?

BIOLOGY

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It's a matter of life and death for leatherback turtles on the beaches of French Guiana.

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Find out how detectors at the bottom of the sea are capturing elusive subatomic particles.

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Inside a unique effort to keep flesh-eating worms from invading the U.S.

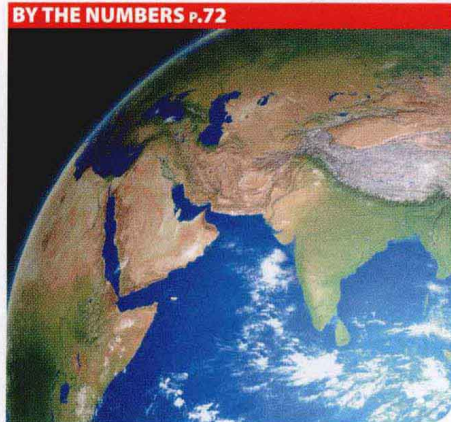
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Bull's-Eye p.6

This month's gallery of amazing images: a cell gone awry, a sky-high burial, a blossom of unusual size, and an engine that burns bright.

Science Update p.15

A car for the blind, Mars's ancient lake, slithering snakes, monkeys on a diet, how our brains got big, and storms that prevent quakes.

Ask Us p.25

You asked, we answered: Can mountains form overnight? How did the heavy elements arise? Why are tropical flowers so colorful?

By the Numbers p.72

A look at the Earth's vital statistics.

Contrast p.74

We compare the barren Dry Valleys of Antarctica with the ocean's fertile coral reefs.

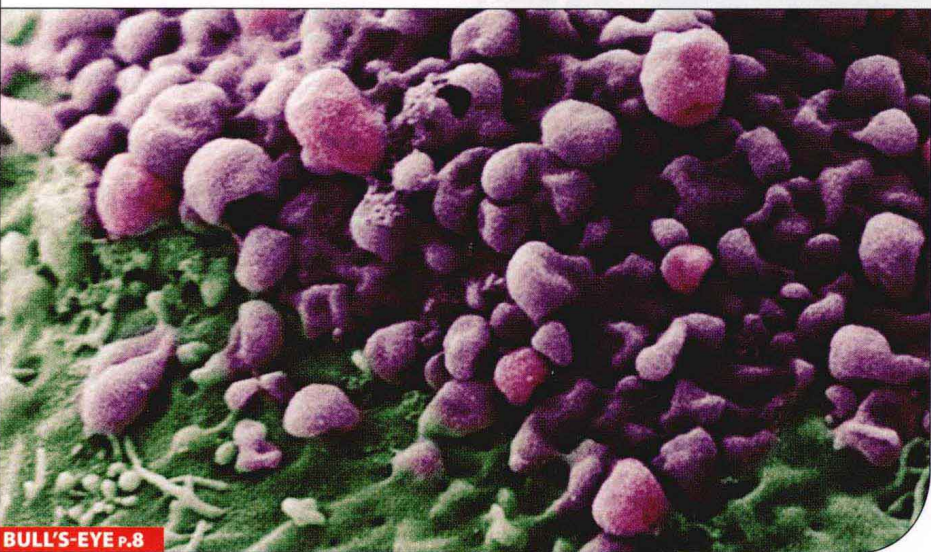
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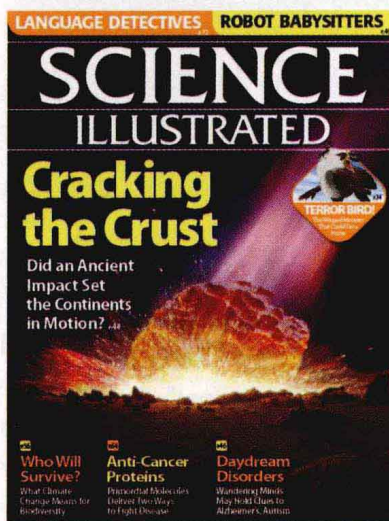
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Coins enlarged to show detail.

From the Editors

This month we're excited to unveil some changes in *Science Illustrated* that we think further our mission to deliver fascinating topics in the most visually engaging way. Every issue, we'll highlight the innovative Tools + Techniques used by researchers in a particular field, like genetic engineering (page 52). In *By the Numbers*, we'll give you vital statistics on a scientific topic—the Earth, for example (page 72). Finally, the images in *Contrast* will showcase the contradictions inherent in nature and technology (Barren versus Fertile, page 74). We'd love to hear what you think of these new sections.

E-mail us at letters@scienceillustrated.com



The Lowdown

In "Who Will Survive?" [January/February], you state that pikas live at altitudes from 8,000 to 13,000 feet. Yet other populations have recently been found at elevations well below 8,000 feet, according to Emere Hall of the Teton Science Schools's Conservation Research Center in Jackson, Wyoming. This shows that they are

capable of living at a broader range in the Greater Yellowstone Ecosystem than previously thought.

Marilyn Stone Via e-mail

Darwin Debate

"Origins of a Revolution in Hardcover" [November/December 2009] was most interesting. In the 1926 authorized edition of *The Origin of Species*, however, the final sentence actually reads: "There is grandeur in this view of life, with its several powers, having been originally breathed by the Creator into a few forms or into one; and that, whilst this planet has gone cycling on according to the fixed law of gravity, from so simple a beginning endless forms most beautiful and most wonderful have been, and are being evolved." By editing the quote [to remove "by the Creator"], you continue to foster the unnecessary debate between science and religion.

Richard J. Erdlac, Jr. Via e-mail

EDS: Darwin added "by the Creator" to the book's second edition. Modern edits of his first edition, the article's subject, do not include these words, according to science historian Ronald Numbers of the University of Wisconsin.

Corrections

The London Underground has 155 miles of train tracks, not 250 [World of Science, Nov./Dec. 2009]. It still holds the record for the longest distance traveled by different routes by slightly more than 10 miles.

Sea-ice decline is threatening some polar bear populations in the Arctic, not in Antarctica ["Who Will Survive?", Jan./Feb.].

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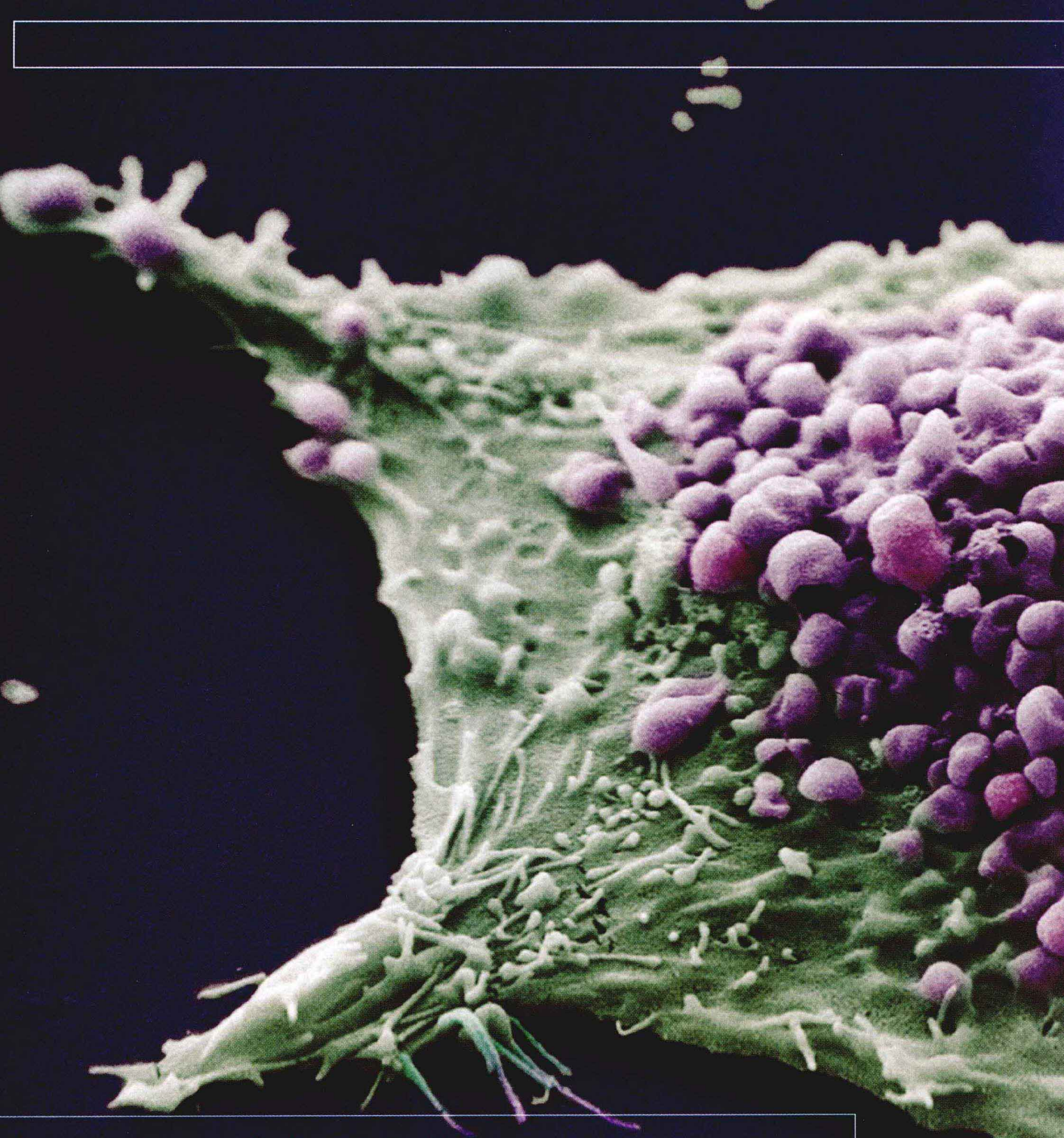
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For the Birds

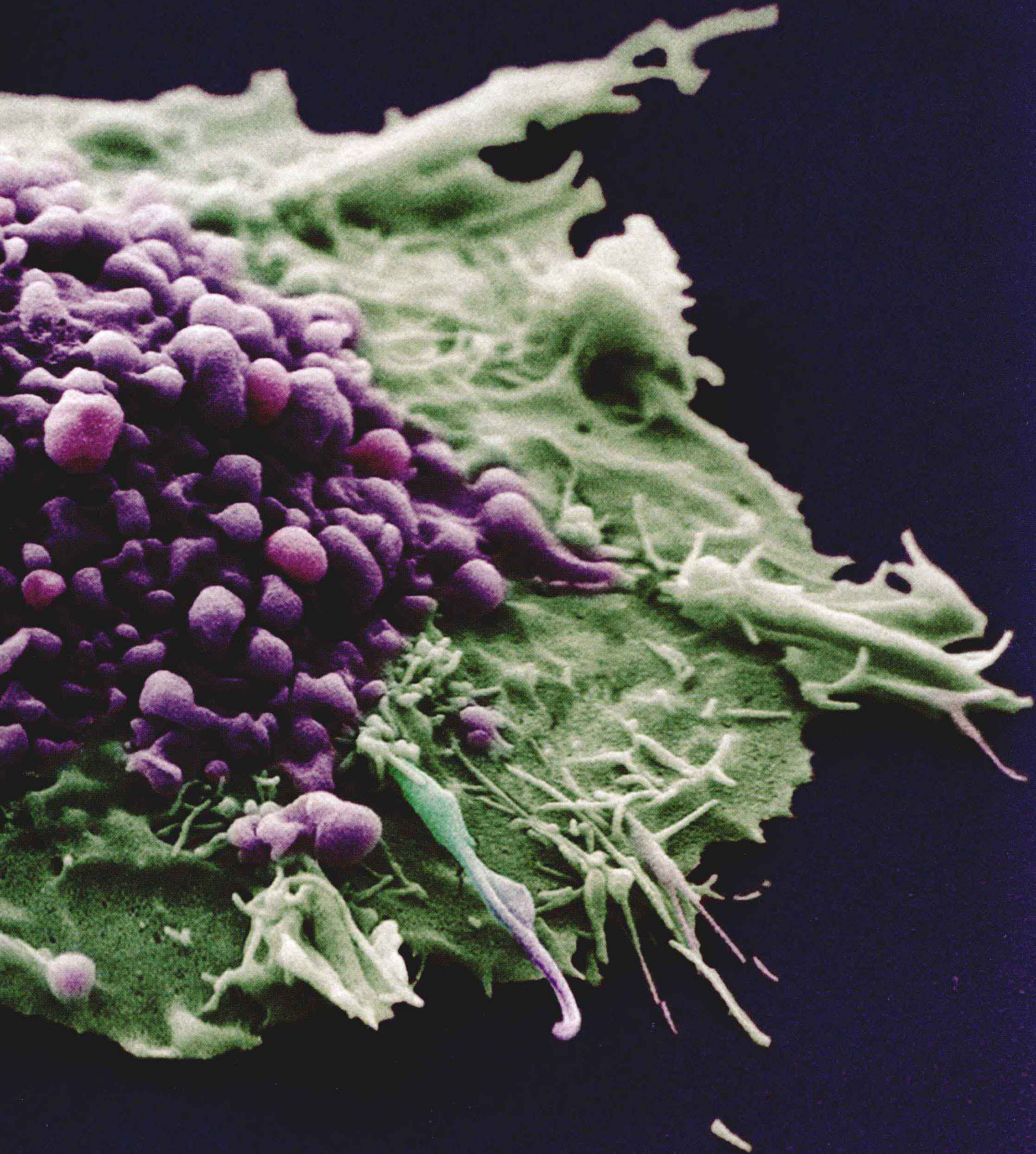
Vultures eat the remains of the deceased as part of a Tibetan Buddhist “sky burial” in northwestern China. After a death, monks pray over a person’s body to help the soul transition to a new existence. The corpse is then dismembered and, as the deceased’s final act of charity, left on a mountain in an area frequented by vultures. Historians believe the ritual may have had practical origins in the high altitudes of Tibet, born from a lack of timber for cremation or the difficulty of interment in the rocky terrain.



Invasion of the Bleb

This lone lung-cancer cell, shown with enhanced color, is topped by purple blebs, bubbles that form when a cell's structure degrades, divides, or is placed under physical or chemical stress. During this process, the cell membrane detaches from the cytoskeleton, the scaffolding that maintains a cell's shape, and forms spherical bulges. Scientists at Cancer Research UK are using such images to examine how cells maintain normal functioning and to learn how cancer cells disrupt the process. This microscopy image, by researcher Anne Weston, won a 2009 Wellcome Image Award, given for outstanding scientific and medical photography.

ANNE WESTON/
LRI/CRUK/Wellcome Images



Itty-Bitty Blossom

So thin that they're nearly transparent, the blooms of one of the world's smallest orchids measure just over 0.08 inch across. Lou Jost, an ecologist with EcoMinga, a plant-conservation foundation, discovered the yet-to-be-named species in a cloud forest at an altitude of almost 10,000 feet on the Cerro Candelaria mountain in Ecuador. The minuscule orchid, shown here beside a ruler, was flowering among the roots of a larger orchid that Jost had brought back to his greenhouse for study.



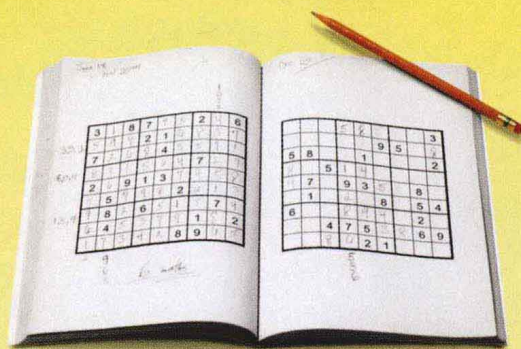






Start Your Engines

A jet of flame shoots out of the *Lynx* rocket's main engine during tests in the Mojave Desert last March. XCOR Aerospace hopes to make a splash in the budding space-tourism market with the craft, which is designed to take a pilot and a passenger to suborbital altitudes of up to 200,000 feet. Roughly the size of a small plane, *Lynx* is powered by four engines that burn liquid oxygen and kerosene. The company is still testing the main engine, with the rocket's first test flight scheduled for later this year or early next.



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