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BIOFUELS

Grassoline at the Pump

By George W. Huber and Bruce E. Dale

Scientists are turning agricultural leftovers, wood and fast-growing grasses into a huge variety of biofuels—even jet fuel. But before these next-generation biofuels go mainstream, they have to compete with oil at \$60 a barrel.



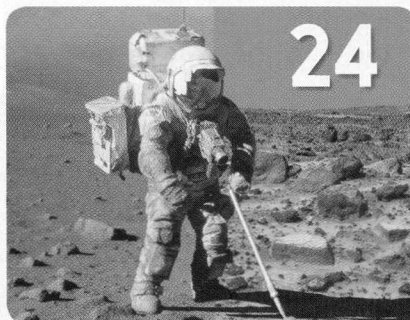
KENN BROWN

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24 From the Moon to Mars

By Harrison H. Schmitt

The only scientist and field geologist ever to visit the moon offers some pointers to those who will one day visit Mars.



MEDICINE

32 New Ways to Squash Superbugs

By Christopher T. Walsh and Michael A. Fischbach

Scientists are using new tools and tactics in the race to discover novel antibiotics.



NEUROSCIENCE

48 Origins of the Left and Right Brain

By Peter F. MacNeilage,

Lesley J. Rogers

and Giorgio Vallortigara

The specialization of the two cerebral hemispheres for certain tasks was once thought to be uniquely human. In fact, it evolved from brain asymmetries in vertebrates that lived half a billion years ago.



ON THE COVER

Grasses and other plants are rich in cellulose that can be converted into alternatives to gasoline—but at what price?

Image by Kenn Brown, Mondolithic Studios.

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CONSERVATION

The Ivory Trail

By Samuel K. Wasser, Bill Clark
and Cathy Laurie

The illegal slaughter of African elephants for ivory threatens their existence. DNA-based forensic tools can help stop the cartels behind this bloody trade.

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ECONOMICS

The Science of Bubbles and Busts

By Gary Stix

Economic theory posits that people are rational investors—a basic assumption that is now being revisited in light of the worst economic crisis since the Great Depression.



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SLIDE SHOW:

LIFE AT THE MARINE MONUMENTS ▼

The U.S.'s three new national marine monuments host a bounty of life that is now protected.

More at www.ScientificAmerican.com/jul2009



D. BRUMBAUGH Center for Biodiversity and Conservation, American Museum of Natural History



60-Second Science Blog

Monkey See, Monkey Regret

Researchers used a simian version of the game show *Let's Make a Deal* to test whether monkeys, like humans, wonder about what might have been.



Slide Show

Seven Artificial Valves That Lend Hearts a Helping Hand
Artificial designs have evolved over the past five decades to successfully replace natural valves.



60-Second Earth Podcast

Cash for Clunkers

Is the government's plan to pay people for trading in old, inefficient vehicles an environmental bane or boon?



News

Growth Industry: Honeybee Numbers Expand Worldwide as U.S. Decline Continues

Populations in the U.S. and Europe have been hit hard, but honeybees are on the rise elsewhere.



60-Second Science Podcast

Elderly Who Forget Age Remember Better

In a study, senior citizens who were reminded of their age and of stereotypes about aging performed worse on memory tests than secure seniors did.

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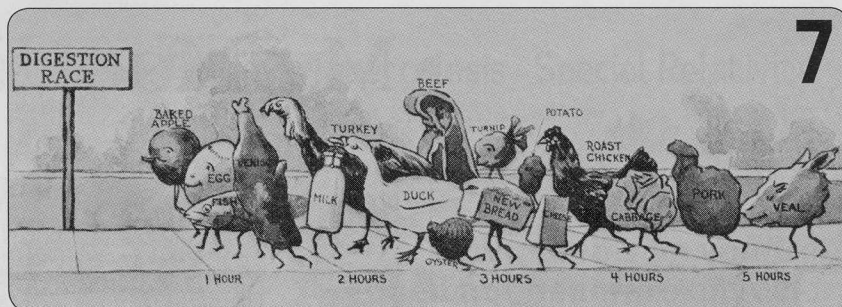
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- Stimulus dollars, oversight and integrity.
- Infrared fluorescent proteins for imaging.
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Why not split harmful carbon dioxide into harmless carbon and oxygen?

