

NATIONALGEOGRAPHIC.COM/MAGAZINE AUGUST 2006

INSIDE: ARMY ANTS

NATIONAL GEOGRAPHIC

No End in Sight

Killer Hurricanes

New Orleans: Home No More 42

Ghost World Guardian 78 Great Smoky Mountains 90

A Geographic Life 108 Where Currents Collide 120



From delivering motorcycles worldwide to getting a unique collectible safely to Daytona Bike Week, Volker Oesau knows what counts in motorcycle logistics. Because he's passionate about bikes, too. We think the best way to help your business is to know it as well as ours. It's the spirit of can do and the experience of know how. It's the people who go all the way to get the job done. www.dhl.com/alltheway

>> VOLKER OESAU

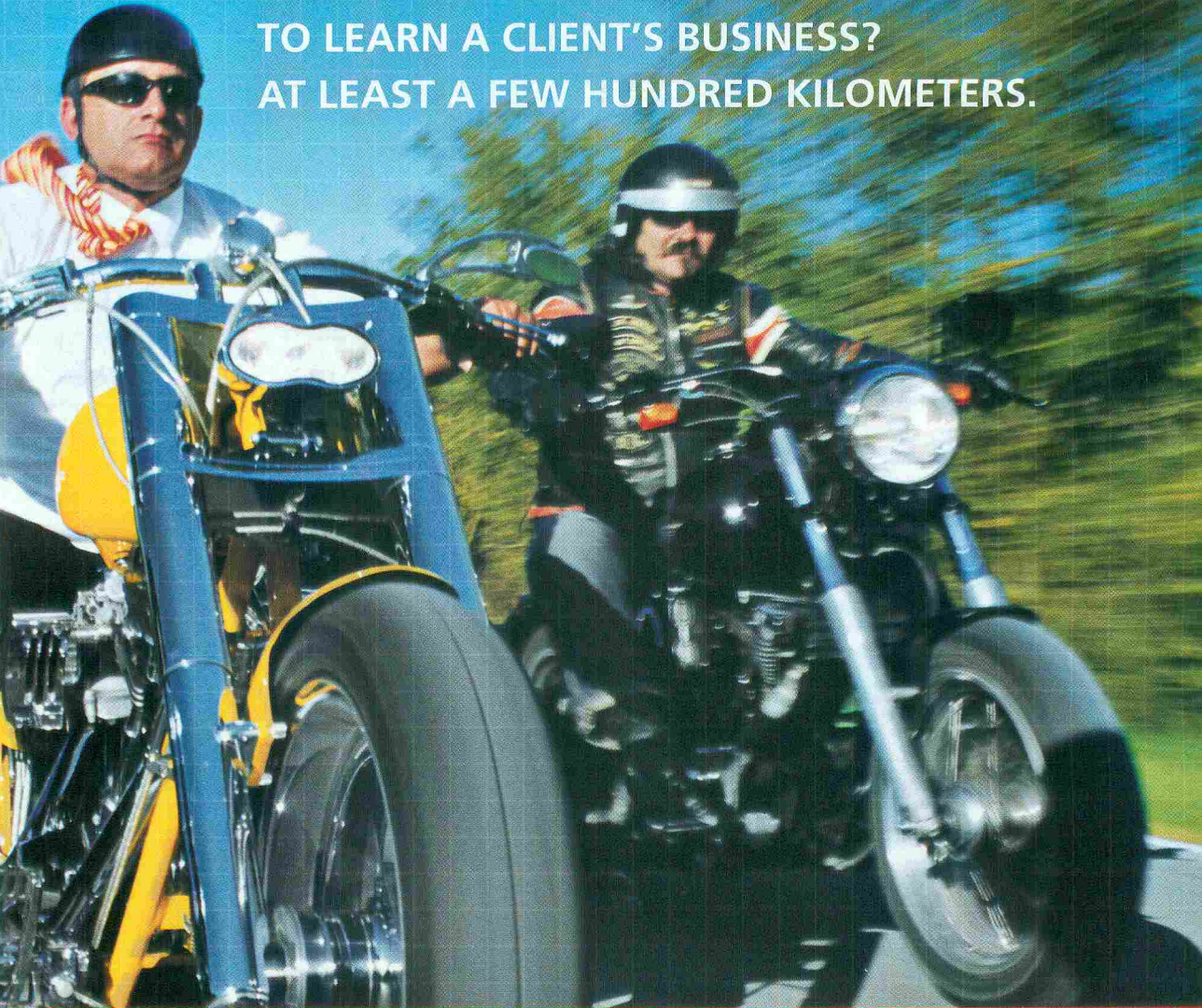
>> DHL MANAGING DIRECTOR, CENTRAL AND EASTERN EUROPE

REGION: FRANKFURT, GERMANY

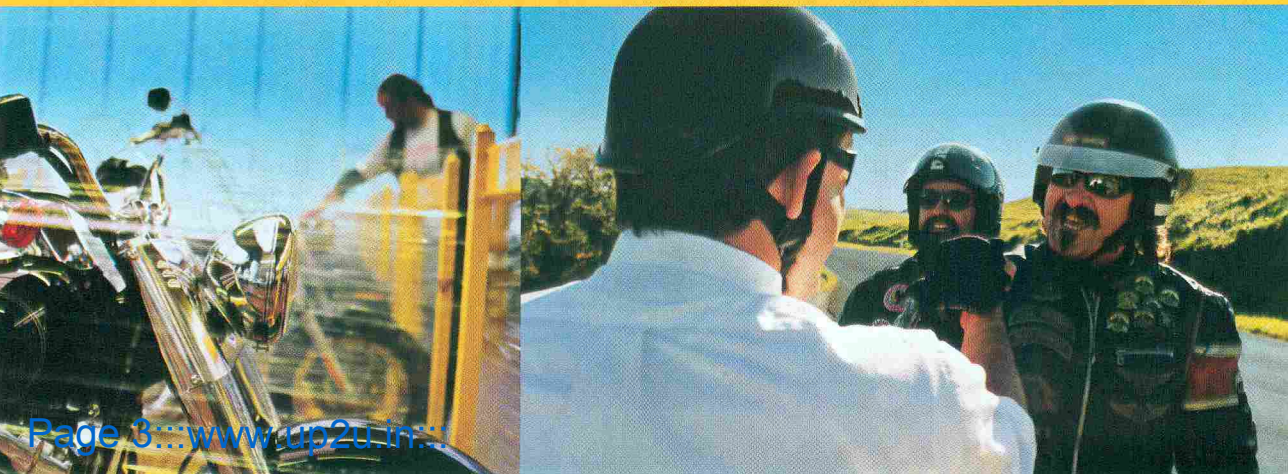
ASSIGNMENT: HIT THE ROAD.



HOW LONG DOES IT TAKE VOLKER OESAU
TO LEARN A CLIENT'S BUSINESS?
AT LEAST A FEW HUNDRED KILOMETERS.



ALL THE WAY **DHL**





Wild Yak (*Bos grunniens*)

Size: Head and body length, up to 325 cm; shoulder height, up to 200 cm **Weight:** 305-820 kg
Habitat: Alpine tundra and cold desert regions of the northern Tibetan plateau, at altitudes of 4,000-6,000 meters **Surviving number:** Estimated at fewer than 10,000 adults



Photographed by Milo Burcham

WILDLIFE AS CANON SEES IT

Yak attack? More aggressive than its domesticated cousins, the wild yak is quick to charge when an intruder appears in its path. In most cases, though, it prefers the peaceful expedient of running away. Though it lives much of the year in the isolation of single-sex herds—protected from the elements by a marvelous skirt-like coat—the massive animal must travel great distances to forage for vegetation. These trips can be hazardous, bringing the yak into contact

with persistent poachers as well as livestock and the attendant risks of disease and interbreeding. As its habitat shrinks, more and greater dangers cross the wild yak's path every day.

As an active, committed global corporation, we join worldwide efforts to promote awareness of endangered species. Just one way we are working to make the world a better place—today and tomorrow. Visit ngm.com/canonwildlife to find out more.

Canon

NATIONAL GEOGRAPHIC

AUGUST 2006 • VOL. 210 • NO. 2

Swarm Raiders

An army ant straddles the remains of an insect victim's exoskeleton as she carries it home to her colony in the forests of Panama.



MARK W. MOFFETT

Features

- New Orleans Portfolio** 42 Last year's Gulf Coast hurricanes upended landscapes and lives. Much will be rebuilt, but much is gone forever.
PHOTOGRAPHS BY DAVID BURNETT **ESSAY BY ERNEST J. GAINES**
- Super Storms** 66 Scientists are urgently trying to forecast the next killer hurricanes.
BY THOMAS HAYDEN
- Ghost World Guardian** 78 For 50 years rancher Waldo Wilcox guarded a Utah canyon full of artifacts from the ancient Fremont culture. Now the secret's out.
BY DAVID ROBERTS **PHOTOGRAPHS BY IRA BLOCK**
- Smoky Mountain Seasons** 90 The quiet splendor and patchwork history of the popular national park offer lessons in how humanity can coexist with nature.
BY ADAM GOODHEART **PHOTOGRAPHS BY MICHAEL MELFORD**
- A Geographic Life** 108 Some people dream of exotic adventures with NATIONAL GEOGRAPHIC. Thomas J. Abercrombie lived that dream.
BY DON BELT
- Where Currents Collide** 120 In wild tides surging through the straits of Vancouver Island off British Columbia, marine life grows up strong and beautiful.
TEXT AND PHOTOGRAPHS BY PAUL NICKLEN
- Army Ants on the March** 136 At the pinnacle of social cooperation, army ants overwhelm their prey through their sheer force of numbers.
ESSAY BY EDWARD O. WILSON
TEXT AND PHOTOGRAPHS BY MARK W. MOFFETT

COVER Hurricane Katrina approaches New Orleans on August 28, 2005.
IMAGE: RAY STERNER AND STEVE BABIN, JOHNS HOPKINS UNIVERSITY APPLIED PHYSICS LABORATORY; NOAA

© Cover printed on recycled-content paper

OFFICIAL JOURNAL OF THE NATIONAL GEOGRAPHIC SOCIETY



VISIONS OF EARTH

FOSSILS

HEALTH

WILDLIFE

COLOR OF MONEY

CULTURE

WHERE IN THE WORLD?

VOICES

Departments

Namibia

South Africa

Nepal

Dodo Graveyard

Ways to Go

400-pound Jellyfish

Funny Money

Air-conditioning

Maelifell Volcano

Bill McKibben

Miscellany

EDITOR'S NOTE

LETTERS

YOUR SHOT

PHOTO JOURNAL

INSIDE GEOGRAPHIC

FLASHBACK

On the Web

ngm.com/0608

🐳 In the Wake of Hurricanes

"I remember finding out that my grandpa was alive." New Orleans teenagers record Katrina's aftermath in words and photos. Photographer David Burnett finds the Gulf Coast still in turmoil.

🐜 Ants: Up Close and Personal

Biologist-photographer Mark Moffett offers himself as live bait while narrating this video of army ant behavior.

🐻 Live WildCam: Grizzlies

The world's largest gathering of brown bears stakes out a remote corner of the Alaska Peninsula each summer to gorge on salmon. You can experience this remarkable event live via webcam at ngm.com/wildcamgrizzlies.

Member Services

Subscriptions

To order a subscription to NATIONAL GEOGRAPHIC magazine, give a gift membership, or change address, contact Customer Service online at ngmservice.com, or call 1-800-NGS-LINE (647-5463). Hearing-impaired TDD users may call 1-800-548-9797. Outside the U.S. and Canada call +1-813-979-6845.

Customer Service

Write to:
National Geographic
PO Box 63001
Tampa, FL 33663-3001

Online Index

For an online index of all National Geographic publications go to: nationalgeographic.com/publications.

Shopping

For National Geographic products go to: shopng.com or call 1-888-225-5647.

Mailing List

We occasionally make a mailing list available to carefully screened companies whose services may be of interest to National Geographic Society members. To remove your

name from this list, email ngsline@customersvc.com. U.S. and Canadian customers call 1-800-NGS-LINE (647-5463).

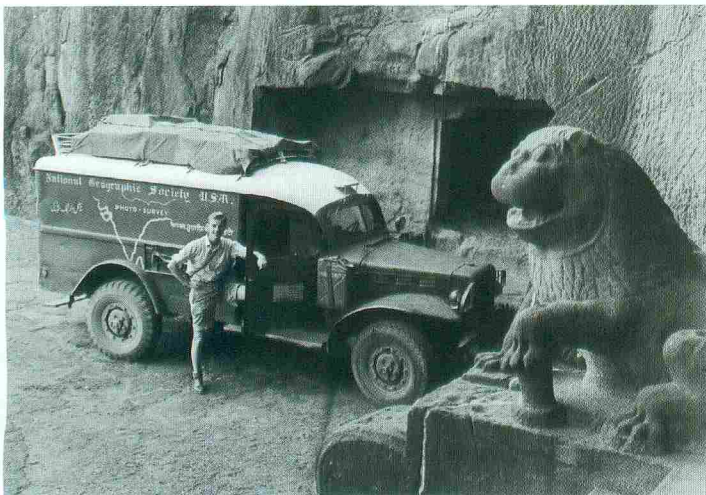
International customers call +1-813-979-6845.

Or write: National Geographic Society, PO Box 63005, Tampa, FL 33663-3005.

Please include address label from the magazine wrapper.

This magazine has lost two dear friends within the past few months—both photographers and larger-than-life legends. You'll read about one of them, Tom Abercrombie, in this month's issue. Volkmar Wentzel, whose career spanned 48 years, died as this issue was going to press. You'll learn about Kurt, as he was called, in Photo Journal in next month's issue; in the meantime, I'd like to tell you how his work influenced me.

As a child growing up in a small town in Oregon, I spent Saturdays with my grandparents. They had shelves of old magazines,



Kurt Wentzel visited India's Ellora caves for a May 1953 GEOGRAPHIC story.

and I passed many afternoons absorbed in back issues of NATIONAL GEOGRAPHIC. Even today, I can summon the images, particularly those by Kurt Wentzel. There was the picture of a princess borne on a palanquin to her wedding in Jodhpur, the turbaned Rajput with his luxuriant beard, and the ruins of a temple near Islamabad. But nothing fired my imagination more than the image of a surplus army ambulance Kurt had outfitted as a rolling dark-room. Kurt explored 40,000 miles of Indian subcontinent in that vehicle, and to understand its impact on me, you need to know that I never left the West Coast until I was 18; a visit to my aunt and uncle in San Diego was my idea of exotic travel. I don't know at what point during my afternoon voyages through the magazine that the thought occurred to me: I can do this, too. I do know the image of that ambulance helped put me on the path of my life's work and passion. Kurt Wentzel's photographs opened a door to the realm of possibility.

PHOTO: VOLKMAR WENTZEL

CHRIS JOHNS, *Editor in Chief*

Victoria Pope, *Managing Editor*
 Dennis R. Dimick, *Executive Editor*
 Bill Marr, *Executive Editor*
 Carolyn White, *Executive Editor*
 Robert L. Booth, *Associate Editor*

SENIOR EDITORS

Tim Appenzeller, *Science*
 Don Belt, *Geography & World Affairs*
 Bill Douthitt, *Story Development*
 John A. Echave, *Research Grants*
 Ken Geiger, *Technology*
 David Griffin, *Photography*
 Valerie A. May, *New Media*
 Peter Miller, *Expeditions*
 Kathy Moran, *Natural History*
 Oliver Payne, *Manuscripts*
 Lesley B. Rogers, *Research*
 Christopher P. Sloan, *Graphics*
 David C. Whitmore, *Design & Typography*
 Margaret G. Zackowitz, *Departments*

TEXT

Assistant Editors: Alan Mairson, Peter L. Porteous, Jane Vessels. **Text Editors:** Lynn Addison, Karen M. Kostyal, Glenn Oeland, Barbara Paulsen, Jennifer Reek. **Senior Writers:** Joel K. Bourne, Jr., John L. Eliot, Jennifer S. Holland, Karen E. Lange, Cathy Newman, Tom O'Neill, Cliff Tarpay, A. R. Williams. **Writers:** Chris Carroll, Peter Gwin, Carol Kaufmann, Michael Klesius, Cate Lineberry, Neil Shea, Lynne Warren. **Departments:** Whitney Dangerfield, Siobhan Roth. **New Media:** Cassandra Franklin-Barbajosa, *Senior Writer*

PHOTOGRAPHY

Susan A. Smith, *Deputy Director*. **Photo Editors:** Bert L. Fox, Todd James, Elizabeth Krist, Sarah Leen, Kurt F. Mutchler, Sadie Quarrier, Susan Welchman. **Photographers:** William Albert Allard, Jodi Cobb, Michael Nichols, Mark Thiessen. **Photo Engineering:** Lawrence B. Maurer, Joseph S. Stancampiano

DESIGN AND GRAPHICS

Design Editors: Robert Gray, *Deputy Director*; Elaine H. Bradley, Beth L. Rakouskas. **Designers:** Betty Clayman-DeAtley, Joanna Foucheux, Oliver R. Uberti, Cindy Reichard. **Production:** Maps: William E. McNulty, *Director*. Art: Jeffrey L. Osborn, *Deputy Director*; Charles L. Floyd, Christopher A. Klein, Joshua Korenblat. **Infographics:** Brenna Maloney, Juan Velasco. **Art Research:** Patricia B. Kellogg, *Director*; Ellie Boettinger, Ann R. Perry

RESEARCH

David Brindley, *Deputy Director*; Abigail A. Tipton, *Asst. Director*. **Research Editors:** Victoria C. Ducheneaux, Alice J. Dunn, Kathy B. Maher, Mary McPeak, Heidi Schultz, David W. Wooddell, Barbara L. Wyckoff. **Senior Researchers:** Nora Gallagher, Mary Jennings Luger, Marisa J. Larson, Elizabeth Smodgrass, Christ E. Ulbricht. **Researchers:** Karen C. Courtneage, Emily Krieger, Nancie Majkowski, David A. O'Connor, Taryn Salinas, Brad Scriber, Shelley Sperry

EDITORIAL SERVICES

Administration: Marisa Domeyko, *Staff*; Mark Feldman, *Finance*; Carol Dumont Kerby, *Scheduling*; Brian E. Strauss, *Electronic Publishing*; Karen Dufort Sligh, *Asst. to the Editor in Chief*; Sandra M. Dane, Ewart Ignacio, Caroline Wallinger. **Communications:** Mary Jeanne Jacobsen, *Vice President*; Barbara S. Moffet, Heather Riley. **Correspondence:** Joseph M. Blanton, Jr., *Director*; Carol Stroud, Lisa Walker. **Image Collection:** Maura A. Mulvihill, *Vice President*; William D. Perry, *Sales*; Carolyn J. Harrison, John A. Rutter. **Libraries and Information Services:** Susan Fifer Canby, *Vice President*; Renee Braden, Ellen D. Briscoe, Barbara P. Ferry, Anne Marie Houppert, Ann E. Hubbs, Karen Huffman. **New Media:** Lisa Hungness, *General Manager*. **Travel:** Cristine E. Ghillani, *Director*

PRODUCTION SERVICES

Hans H. Wegner, *Vice President*. **Digital Imaging:** Thomas J. Craig, *Director*; Clayton R. Burneston, Phillip E. Plude, Bernard G. Quarrick. **Distribution:** Michael Swarr, *Director*. **Engraving:** George Bouneils, *Director*; William D. Reicherts. **Printing:** Joseph M. Anderson, Luz Garcia, Edward J. Holland. **Quality:** Ronald E. Williamson, *Director*

MAGAZINE PUBLISHING

Advertising: Stephen P. Giannetti, *Vice President and Group Publisher*; Claudia Malley, *Vice President and U.S. Publisher*; International: Declan Moore. **National Advertising Directors:** Jerry Brennan, Western; John Patten, Eastern. **Directors:** Ron Bortorff, West Coast Sales; Suzanne McKeon, Marketing; Margaret Robertson, Business and Operations. **Managers:** Bob Amberg, Southeast; John Iavarone, Detroit. **Circulation:** Terry Day, *Vice President*. **Directors:** Elizabeth M. Safford, North America; John A. Seeley, International. **Member Services:** Christina C. Alberghini, *Director*


V I E W P O I N T : *beauty*



"I find photographing the way each culture exaggerates universal ideals of beauty fascinating. In Papua New Guinea, men are the most flamboyant, taking their cue from male birds' bright plumage. In early Polynesia, tattoos marked life events, making the body a visual journal. Scarring, plates in lips, and bound feet have all been beautiful to some, while unimaginable to others. As our world grows smaller, unique expressions of beauty are all the more rare, and wonderful."

—Jodi Cobb



 NATIONAL
GEOGRAPHIC
Mission Programs

JODI COBB NATIONAL GEOGRAPHIC PHOTOJOURNALIST



trendy



traditional



traditional



trendy

Powered by HSBC Holdings plc.

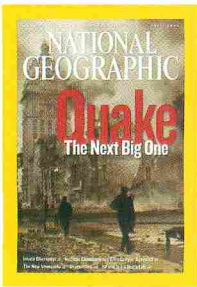
An unpredictable bunch. People. Everywhere you go you get a different opinion and a different point of view. What's in, what's out? What is of the moment and what is so 'yesterday'?

And when you talk to a hundred million people all over the planet you'd be amazed at what you learn.

We have learned that the more you look at difference as potential, the less it looks like a problem.

yourpointofview.com

HSBC 
The world's local bank



April 2006 *Many readers wrote in about "Nuclear Power." Opinions on the subject were mixed, but our online poll was decisive: At press time, more than 70 percent of respondents felt the benefits of nuclear energy outweighed its costs. Other readers this month debated power of a different sort—that of Venezuela's President Hugo Chávez.*

↪ Voice opinions about August stories at ngm.com.

Nuclear Power

Apparently we can build nuclear reactors that are perfectly safe and would involve no eventual expensive decommissioning. All we need now are perfect safeguards against human laziness, stupidity, or malevolence.

RALPH A. LEWIN
La Jolla, California

By almost any measure, the peaceful use of nuclear energy has been highly successful for more than 50 years, except for two events—Chernobyl and Three Mile Island. Based on sustained efforts primarily by utility companies, the Institute of Nuclear Power Operations, the Electric Power Research Institute, and individuals dedicated to this technology, the operation of existing facilities is and will be acceptably safe, effective, cost-efficient, and reliable.

Write, Email, Fax

Write

National Geographic Magazine
PO Box 98199
Washington, DC 20090-8199

Email

ngsforum@nationalgeographic.com

Fax

202-828-5460

Include name, address, and daytime telephone. Letters may be edited for clarity and length.

Yet due almost exclusively to uninformed and misguided decisions by policymakers and a public wary of any complex technology, the pursuit of new design, construction, and implementation of advanced nuclear facilities in the U.S. has been halted for more than 25 years.

GLENN HUDSON
Tuscumbia, Alabama

I think your article on nuclear energy is biased. Nuclear energy is attractive for the shortsighted future. You point out that it is a cash cow, and it produces a large amount of power with very little pollution. But are the shortsighted gains worth the long-term consequences? Like waste for thousands of years?

JOE LORENZO
Clearfield, Utah

In the picture on pages 54-5, a young boy is cutting the grass with a gasoline-powered lawn mower within sight of the Three Mile Island station cooling towers. The boy is wearing nothing but shorts; no safety glasses, no shoes, no trousers, no long-sleeved shirt, and no hat. It is more likely that the boy will be injured due to improper safety guidance than any potential injury

from the nuclear power plant in the background.

CARL FEDAKO
Bloomsburg, Pennsylvania

Inside Chernobyl

Your Chernobyl article was well done and quite accurate, as was the nuclear rebirth article. But to combine them in the same issue effectively paints a picture of doom and gloom, and, as usual, casts a negative light on the safety and performance record of electricity-producing commercial nuclear plants in the U.S.

MICHAEL W. SCRIMSHER
Burbank Heights, Washington

Chernobyl's "deadly footprint" is dwarfed by the catastrophic consequences for those living downwind from the Aral Sea, which Uzbekistan shares with Kazakhstan. This inland sea became filled with chemical and agricultural wastes prior to the breakup of the former Soviet Union. When its rivers were diverted, its shores receded, and prevailing winds dispersed residual salts contaminated with noxious pollutants. Millions in the region suffer chronic health problems, high infant mortality rates, and disproportionate birth defects.

DONALD E. PIBURN
Kaaawa, Hawaii

The Next Big One

I am a California-registered geologist. I live within ten miles of two major active faults, and I've mapped a few dozen others. I'm both amused and exasperated by continuing chatter about the Next Big One. How about all those "little" ones, all in southern California, namely Santa Barbara in 1925, Long Beach