

The Weekly Newsmagazine of Science

SCIENCE NEWS

August 31, 1996
Vol. 150, No. 9
Pages 129-144

Fire

Above the Sun

SCIENCE NEWS®

The Weekly Newsmagazine of Science

Science Service Publication
Volume 150, No. 9, August 31, 1996

Donald R. Harless	Publisher
Julie Ann Miller	Editor
Blair Burns Potter	Managing Editor
Dan Skripkar	Production/Design Director
David Lindley	Associate Editor
Janet Raloff	Senior Editor Environment/Policy
Ron Cowen	Astronomy
Bruce Bower	Behavioral Sciences
Corinna Wu	Chemistry/ Materials Science
Richard Monastersky	Earth Science
John Travis	Biology
Kathleen Fackelmann,	Biomedicine
Steve Sternberg	
Tina Adler	Life Sciences
Ivars Peterson	Mathematics/Physics
Erik Skindrud	Science Writer Intern
Meghan Mitchell	Editorial Assistant
Cait Anthony	Books/Advertising

SCIENCE NEWS (ISSN 0036-8423) is published weekly on Saturday, except the last week in December, for \$49.50 for 1 year or \$88.00 for 2 years (foreign postage \$6.00 additional per year) by Science Service, Inc., 1719 N Street, N.W., Washington, D.C. 20036. Preferred Periodicals postage paid at Washington, D.C., and additional mailing office. **POSTMASTER:** Send address changes to SCIENCE NEWS, P.O. Box 1925, Marion, Ohio 43305. Change of address: Four to six weeks' notice is required — old and new addresses, including zip codes, must be provided. Copyright © 1996 by Science Service, Inc. Title registered as trademark U.S. and Canadian Patent Offices. Printed in U.S.A. on recycled paper. ♻️
Republication of any portion of SCIENCE NEWS without written permission of the publisher is prohibited.

Editorial and Business Offices:
1719 N St. N.W., Washington, D.C. 20036
202-785-2255; scinews@scisvc.org

Advertising Representative:
Lewis Edge & Associates, Inc.
366 Wall St., Princeton, N.J. 08540, 609-683-7900

Subscription Department:
P.O. Box 1925, Marion, Ohio 43305
For new subscriptions only, call 1-800-247-2160.
For customer service, call 1-800-347-6969.

SCIENCE NEWS ONLINE <http://www.sciencenews.org>

This Week

- 132 No-Cal Powder May Sub for Food's Fat
- 132 Coffee can give many species a boost
- 133 Brain images illuminate Tourette syndrome
- 133 Hubble finds stormy weather above Jupiter
- 134 Putting a tumor suppressor back to work
- 134 Weight loss pills linked to lung ailment
- 135 Butterfly displaced by climate change?
- 135 Shaken bead beds show pimples and dimples
- 135 Chem weapons: Burning issues

Research Notes

- 139 Chemistry
- 139 Materials Science

Articles

- 136 How to Light a Fire
Cover: Part of the solar disk and sun's outer atmosphere, or corona, are seen in this ultraviolet image taken by the extreme-ultraviolet imaging telescope aboard the SOHO spacecraft. New SOHO data may help solve a long-standing puzzle: Why is the corona so much hotter than the sun itself? (Joseph Gorman *et al.*/NASA, European Space Agency)
- 140 Mitotic Mischief
- 143 Quantum-Quick Queries

Departments

- 130 Books

Science Service, which publishes SCIENCE NEWS, is a nonprofit corporation founded in 1921 to increase the public understanding of science. Through its youth programs, it administers the International Science and Engineering Fair and the Science Talent Search for the Westinghouse science scholarships.

Board of Trustees — *Chairman*, Dudley Herschbach; *Vice Chairman*, Gerald F. Tape; *Secretary*, David A. Goslin; *Treasurer*, Willis Harlow Shapley; Joseph W. Berg Jr.; Robert W. Fri; J. David Hann; Shirley M. Malcom; C. Bradley Moore; Ben Patrusky; H. Guyford Stever; Sanford J. Ungar; Deborah P. Wolfe.

Honorary Trustees — *Chairman Emeritus*, Glenn T. Seaborg; Edward Bliss Jr.; Bowen C. Dees; Elena O. Nightingale; O.W. Riegel; John Troan.



The Best in Chemistry

For the third year straight, the James T. Grady-James H. Stack Award for Interpreting Chemistry for the Public has recognized work published in SCIENCE NEWS. Richard Lipkin, who covered chemistry at this magazine from 1993 to 1996, will receive the 1997 award, the American Chemical Society announced this week. He is being honored for work that ranged in topic from spider silk to separation of chiral molecules. According to the ACS, its award is designed to recognize and encourage outstanding reporting that increases the public's chemistry knowledge and understanding. After spending the summer as a fellow at the Marine Biological Laboratory in Woods Hole, Mass., Rick will be a freelance science writer in New York. Other former SCIENCE NEWS writers who received the ACS award are Elizabeth Pennisi and Ivan Amato.

We invite you to visit our web site at:

SCIENCE NEWS ONLINE

<http://www.sciencenews.org>

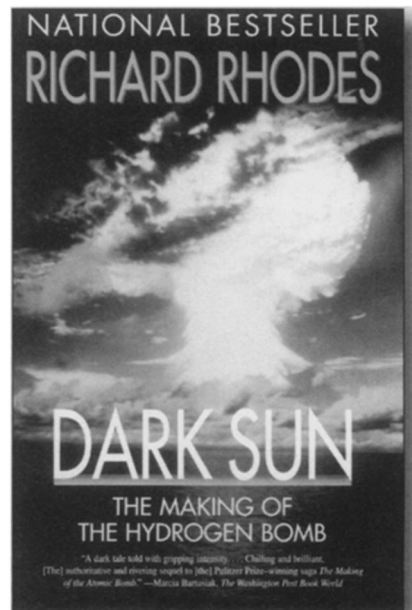
- Highlights from current and past issues
- MathLand and other features not in the magazine
- Complete book and gift listings
- Capability to search and contact SCIENCE NEWS ONLINE

In this brilliant, riveting, major work of history, science and politics, Richard Rhodes, the Pulitzer Prize-winning author of *The Making of the Atomic Bomb*, tells for the first time the secret story of how and why the hydrogen bomb was made; traces the path by which "the Bomb," the supreme artifact of twentieth-century technology, became the defining issue of the Cold War; and reveals how close the world came to nuclear destruction before the United States and the former Soviet Union learned the lesson of nuclear stalemate.

From the day in 1941 when word of Anglo-American atomic-bomb research arrived in Moscow via Soviet espionage to the Cuban missile crisis in 1962 when Curtis LeMay goaded President Kennedy to attack the USSR with everything in the US arsenal, this book is full of unexpected—and sometimes hair-raising—revelations based on previously undisclosed Soviet as well as US sources:

- ♪ The first Soviet atomic bomb was a carbon copy of the first US atomic bomb, its plans supplied by wholesale Soviet espionage.
- ♪ Julius and Ethel Rosenberg were Soviet agents.
- ♪ At the height of the Korean War, President Truman traded the US Joint Chiefs of Staff nine atomic bombs for General Douglas MacArthur's head.
- ♪ Not Robert Oppenheimer, as he was accused, but Edward Teller delayed the development of the hydrogen bomb.

—from Touchstone



Science News Books, 1719 N Street, NW, Washington, DC 20036

DarkSun

Please send me _____ copy(ies) of *Dark Sun*. I include a check payable to Science News Books for \$16.00 plus \$2.00 postage and handling for each book (total \$18.00). Domestic orders only.

Name _____

Address _____

City _____ State _____ Zip _____

Daytime Phone _____

(used only for problems with order)

RB2580

To order by phone from Science News Books, call:

1-800-544-4565

(Visa or MasterCard only)

In D.C. area: 202-331-9653

Touchstone, 1996, 731 pages, 6 1/2" x 9 1/4", paperback, \$16.00

Now available in paperback!

To order by phone from Science News Books, call:

1-800-544-4565
(Visa or MasterCard Only)

In DC area: 202-331-9653

Lowell House, 1996, 324 pages, 6" x 9", paperback, \$17.00

"A great resource of information...Very easy to read with helpful insight into various foot and ankle disorders."
—Rona Wainwright, C. E. C. Podiatrist, American Association of Podiatrists

THE FOOT & ANKLE SOURCEBOOK

EVERYTHING YOU NEED TO KNOW ABOUT:

- Common Problems and Treatments for Children's Feet
- Up-to-Date Information on Bunions, Corns, Calluses, and Other Common Foot Conditions
- Special Concerns for 10 Million Diabetics with Foot Disorders
- Preventive Treatments and Orthotics Information
- Agencies and Associations for People with Foot and Ankle Problems

M. DAVID TREMAINE, M.D. & ELIAS M. AWAD, PH.D.

They're your most basic means of transportation. Your feet are a vital part of an active life, but too often they are mistreated or ignored, and this can lead to painful consequences. *The Foot & Ankle Sourcebook* is your complete and up-to-date guide for the variety of painful foot problems that you will encounter in your lifetime.

A wealth of information is between these covers, with everything from the common but painful problem of bunions to the more serious complications of foot injuries and infections. There is information on common sports injuries and fractures, arthritis, occupational foot problems, and an extensive chapter on the unique problems of diabetics and their feet. From the problems of children to the problems of the elderly, *The Foot & Ankle Sourcebook* is extensive in its coverage of this common but underrated part of the human anatomy.

— from Lowell House

Science News Books, 1719 N Street, NW, Washington, DC 20036

FootSrccebK

Please send _____ copy(ies) of *The Foot and Ankle Sourcebook*. I include a check payable to Science News Books for \$17.00 plus \$2.00 postage and handling (total \$19.00) for each copy. Domestic orders only.

Name _____

Address _____

City _____ State _____ Zip _____

Daytime Phone _____

(used only for problems with order)

RB2581

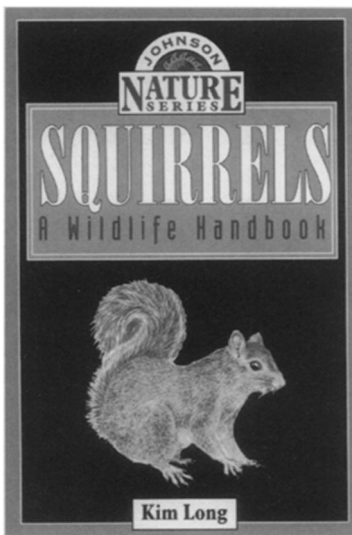
A combination of illustrated field guide, fact book, and folklore collection, *Squirrels* is a new kind of wildlife book. This concise, illustrated handbook identifies specific squirrels with color illustrations and gives comprehensive listings of vital statistics associated with each. It also presents an accurate, informative portrait of squirrels in their natural habitat, along with an examination of their relationship to humans.

Most U.S. residents live in cities. The closest many get to wildlife is observing animals in parks and yards—the favorite habitat of the tree squirrel. Yet for all of the frequency with which they are observed, squirrels and their behavior are little understood. What do squirrels eat? How do they keep their food caches from spoiling? What is the most aggressive squirrel? Are there any squirrel-proof bird feeders? What role did squirrels play in ancient mythology?

From social interactions with early American cultures—both Native Americans and European settlers—to their role in local ecosystems, *Squirrels* provides animal lovers with the complete picture.

- * Hoarding
- * Nest types
- * Predators
- * Favorite foods
- * Endangered species
- * Pest Control

—from Johnson Books



Order by phone for faster service!
1-800-544-4565
 (Visa or MasterCard only)

In D.C. area:
 202-331-9653

Johnson Books, 1995,
 181 pages, 5 3/8" x 8",
 paperback, \$15.95

Science News Books
 1719 N Street, NW, Washington, DC 20036 Squirrels

Please send me _____ copy(ies) of *Squirrels*. I include a check payable to Science News Books for \$15.95 plus \$2.00 postage and handling for each book (total \$17.95). Domestic orders only.

Name _____
 Address _____
 City _____
 State _____ Zip _____
 Daytime Phone _____
(used only for problems with order) RB2582

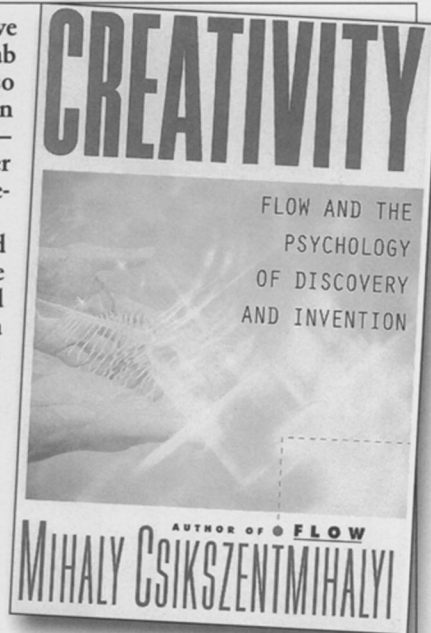


This book is about what makes life worth living. The creative excitement of the artist at her easel or the scientist in the lab comes as close to the ideal fulfillment as we all hope to, and so rarely do. Mihaly Csikszentmihalyi interviewed more than ninety of possibly the most interesting people in the world—people like authors Robertson Davies and Nadine Gordimer and scientists Jonas Salk and Linus Pauling to find out how creativity has been a force in their lives.

In his bestselling book, *Flow*, Csikszentmihalyi explored states of "optimal experience"—those times when people report feelings of concentration and deep enjoyment—and showed that what makes experience genuinely satisfying is a state of consciousness called "flow." Here he builds on his flow theory, profiling individuals who have found ways to make flow a permanent feature of their lives and at the same time have contributed to society and culture.

Csikszentmihalyi explores why creative people are often seen as selfish and arrogant (even though they are not) and reveals that the idea of the tortured genius is largely a myth. He argues that creativity needs to be cultivated not only in traditionally creative fields like sciences and arts, but also in business, government and education.

—from HarperCollins



HarperCollins,
 1996,
 456 pages,
 6 1/4" x 9 1/2",
 hardcover,
 \$27.50



Order by phone for faster service! 1-800-544-4565 (Visa or Mastercard Only) DC area: 202-331-9653

Science News Books
 1719 N Street, NW, Washington, DC 20036 CreativityH

Please send _____ copy(ies) of *Creativity*. I include a check payable to Science News Books for \$27.50 plus \$2.00 postage and handling (total \$29.50) for each copy. Domestic orders only.

Name _____
 Address _____
 City _____ State _____ Zip _____
 Daytime phone _____
(used only for problems with order) RB2584