

The Weekly Newsmagazine of Science

SCIENCE NEWS

February 6, 1993
Vol. 143, No. 6
Pages 81-96

*Searching For Bliss?
Look Within*



To order by
phone, call:
1-800-544-4565

(Visa or MasterCard Only)
In D.C. Area: 202-331-9653

Cambridge University Press, 1992, 354
pages, 8½" x 11", paperback, \$29.95

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

Please send me _____ copy(ies) of *Volcanoes of North America*. I include a check payable to Science News Books for \$29.95 plus \$2.00 handling (total \$31.95) for each copy.

Name _____

Address _____

City _____

State _____ Zip _____

Daytime Phone _____
(used only for problems with order) RB1769

Volcanoes of North America United States and Canada

Geologically youthful volcanic activity has occurred in nearly all of the western United States and Canada, and modern eruptions are frequent in Alaska and Hawaii. However, the only thorough treatment of North American volcanoes available before now was written 100 years ago — and a great deal of pertinent information has been acquired in the meantime. *Volcanoes of North America* capitalizes on this vast body of more recent knowledge to present, in a single source, detailed information about volcanoes found in the continental United States, Alaska, Hawaii, and Canada. It contains brief accounts, written by leading experts in volcanology, of over 250 volcanoes and volcanic fields formed during the past five million years. Precise locations and type classifications are given, as are compositional analyses and eruptive histories. Also provided are photographs, locational maps, and extremely helpful instructions on how to reach each volcano.

Volcanoes of North America will be a standard reference work for practicing volcanologists, petrologists, geochemists, and, to some extent, geographers. In addition, much of the book is sufficiently nontechnical for the lay reader, and the maps and "How to get there" sections make it highly valuable for anyone interested in natural history or fascinated by volcanoes.
—from Cambridge University Press

State of the World

Lester R. Brown

and
Alan Durning
Christopher Flavin
Hilary French
Jodi Jacobson
Nicholas Lenssen
Marcia Lowe
Sandra Postel
Michael Renner
Linda Starke
Peter Weber
John Young



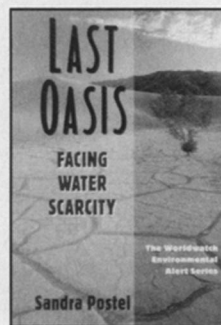
A Worldwatch Institute Report on
Progress Toward a Sustainable Society

All New 1993 Edition

Today environmental degradation is directly affecting national and global economic trends. Grain production per capita has fallen 6 percent since 1984. Soil erosion, thinning of the ozone shield, air pollution, and increased flooding caused by deforestation are all taking their toll.

State of the World 1993 lucidly examines our opinions — for making business a friend to the environment. For preserving cultural as well as biological diversity. For beating our swords into solar cells. It looks at the prospects for trade in a sustainable economy — one that does not consume the natural resources and systems on which it depends.
—from Norton

Norton, 1993, 268 pages, 9¼" x 7", paperback, \$10.95



Also From Worldwatch

We are entering a new era — an era of water scarcity. Already 26 countries have more people than their water supplies can sustainably

support. We hear rumblings of potential war over water in the Middle East. And competition for supplies is brewing between city-dwellers and farmers around Beijing, New Delhi, Phoenix, and other water-short areas. *Last Oasis* examines the limits — ecological, economic, and political — of water. And, perhaps most important, offers a disarmingly sensible way out of such struggles.
—from Norton

Norton, 1992, 239 pages, 8" x 5¼", paperback, \$9.95

Science News Books

1719 N Street, NW, Washington, DC 20036

Please send me the book(s) marked below. I enclose the price of the book(s) plus \$2.00 for postage and handling per book (maximum \$4.00 charge). Domestic orders only.

_____ **State of the World 1993, \$10.95**

_____ **Last Oasis, \$9.95**

Name _____

Address _____

City _____ State _____ Zip _____

Daytime Phone _____
(used only for problems with order) RB1770

Order by Phone!

1-800-544-4565

(Visa or MasterCard Only)

HARD-TO-FIND, UNIQUE PRODUCTS for HOBBYISTS, GADGETEERS and STUDENTS

from America's Largest Mail-Order Market Place of Unusual Values in Telescopes, Binoculars, Magnifiers, Solar, Microscopes, Science Kits, Lab Equipment, Toys, Military Surplus, Lasers, Photo and Weather Instruments.

GRAB BAG OF SCIENCE FUN

New! Edmund Scientific's Giant Mars Map.



Explore all the detail and mystery of our neighbor, **The Red Planet**. Designed by world famous cartographer, Antonin Ruk of the Prague Planetarium and Astronomer, George Lovi of New York's Hayden Planetarium, this Map of Mars is the most accurate and visually appealing available. All major features such as craters, volcanoes, mountains, valleys, seas and viking landing sites are identified. Poster also displays basic Mars Data and an Earth to Mars distance chart through 2005. Measures 26" x 36".
Varnish Coated Poster SJS2,023 \$9.95;
Kimdura Plastic Stock SJS2,024 \$14.95

Build Your Own Motorized Walking Robot.

A Capesla discovery toy can be an exciting introduction to robot technology and engineering. You'll be able to build a slow-motion robot and, at your command, watch it move forward or backward in perfect calibrated balance. **It almost becomes alive!** Contains complete instructions and 38 interlocking parts. **Reg. \$27**
SJ39,859 SPECIAL \$24.95

Flash Rocks.

Strike them together and see amazing flashes inside the rocks! The source of light is a miniature "lightning flash" that occurs in the quartz material within the rocks. It's nature's Pizo effect. **Reg. \$17.95**
Pack of 3 bags (6 rocks). SJ37,474 \$7.95

Go Fishing With This Mighty Magnet.

Lift up to 200 lbs. Fun to use around docks and bridges. A "must" for a boat, it helps retrieve metal objects that fall overboard. You'll be amazed at what you pull up. Wt. 2 lbs., measures 4x3x1/4". Made with a Poly-Vinyl Chloride coating to resist corrosion and chipping. **SJ71,135 \$33.95**

Precision Gyroscopic Performs Gravity Defying Feats, Rotates Up To 3 Minutes.

Demonstrates "gyroscopic inertia" or rigidity in space as first recorded by Sir Isaac Newton in the 17th century. An object rotating about a fixed axis holds its position with respect to inertial space, no matter how the spinning object's support is moved about. Gyro-controlled guidance and navigation systems are used in ships, planes, missiles and space craft and used in mapping/survey work, oil drilling and motion-picture production. With laser gyros and advanced control mechanisms, gyroscopic principles promise to be an important part of tomorrow's technology. **SJ52,063 \$7.99**

The Vortex™ More Than A Money Bank!

Performs spinning tricks and high maneuvers. Drop a coin onto the launching pad, spin the Vortex unit in a circular motion. This creates an immense amount of speed causing the coin to spin around and around until it finally drops to the bottom storage area. **The longest continuous rolling so far is 33 hours, 16 minutes!** Challenge your skills, spin the coin back up the tunnel or spin it upside down, plus more. Made of tough polycarbonate. Instructions included. **SJ37,832 \$18.50**

Fun And Intriguing! You'll Play For Hours With These Colorful Magnetic Magic Marbles.

Build a mountain or odd geometric patterns with these fascinating high impact plastic marbles. Each marble has both a negative and positive pole. A challenge to your imagination. Fun for youngsters, adults, too! 20 marbles per package. **SJ34,966 (Package of 20) @ \$3.95 Ea.**
(5 Packages or more) @ \$3.70 Ea.
(10 Packages or more) @ \$3.20 Ea.

Hear The Softest Whisper At 100 Yards Using Our Bionic Ear With Its Parabolic Booster.

You'll now be able to listen to thousands of sounds that are too low to be heard with the human ear with this portable listening device, designed for professional security. Excellent for bird watching, security, law enforcement, hunting and for the hearing impaired. The Bionic Ear has an omnidirectional microphone that amplifies sounds from all directions with the dominant sounds coming from the direction that the unit is pointed in. It contains an automatic safety shut-off circuit for testing ultra loud incoming sounds that may be harmful to your hearing. Complete with headphones and a Parabolic Booster, making the unit even more powerful and directional, enabling it to pinpoint the direction that sounds originate from. Wt. 1 1/2 lbs., powered with a 9V battery (not included). **SJ33,595 \$145**

Explore The Arena Of Lens Making With Edible Optics™.

Cast both converging and diverging lenses out of gelatin. The method of apparent thickness is used to determine the refractive index of gelatin. A Spherometer is provided to measure the curvature of the gelatin lenses. Kit included 4 petri dishes, 4 watch glasses, 1 plastic tube, 3 packages of gelatin, 1 spherometer and instruction manual. **SJ39,827 \$27.95**

Hanging Radiometer.

Watch these four spell-binding delicate vanes spin round and round from the heat of sunlight, or even an incandescent bulb. Looks beautiful when hanging in a window or even displayed as a Christmas ornament. Bulb is 3" dia., 4" high, comes with bent wire hanger and stand for table mount. **SJ38,510 \$10.95**

Grow Your Own Rock Candy Crystals.

Now you can grow your own sugar stick and learn how it's done. Crystals will grow to full size. Kit includes a science guide, dissolving jar and lid, one start stick and enough sugar, artificial colors and flavors for one experiment. All ingredients are safe and edible. A candy thermometer is required, but not included in this kit. **SJ39,234 \$10.50**

This Clever Gadget Will Tell You How High You Are

Whether you're driving cross country or hiking in the mountains, this Altimeter will tell you how high you are. Shows elevation from sea level to 15,000 feet. Can be mounted to dashboard with self sticking tape (incl.) or has pre-drilled screw holes. Also has built-in barometer. **SJ34,544 \$39.95**

The Handboiler, An Amazing Demonstration Of Physics

Watch the liquid contained within the glass chambers appear to "boil" from the warmth of your hand that increases the vapor pressure within the chambers. The warmer your hand, the better it works in this unusual demonstration of physics. **SJ37,299 \$3.95**

Great AM Radio Reception With Select-A-Tenna. Listen To Station WOR N.Y. When In Boston.

This new antenna will bring in those weak, distant, AM radio signals loud and clear. You'll now get excellent radio reception on all AM stations. Select-A-Tenna turns your AM radio into a powerful receiver. Used in Alaska to pull in stations from continental U.S. Employs mutually inductive coupling. Mini-jack and plug. 10 1/4" dia. **SJ72,147 \$59.95**

Add Spectacular Color To Your Home With A Rainbow Light Display.

Our equilateral prism mounted in an attractive high tech positioning base catches the sunlight from your window and projects the ever-changing rainbow patterns over your walls, ceiling and floor. It's almost like being inside a multifaceted diamond. Glass equilateral prism is 2" (50mm) long with 1" (25mm) faces. Black plastic mount is 3"x1 1/4"x1 1/4". **SJ38,408 \$7.50**

The Cloud Chamber, An Introduction To The Science Of Particle Physics.

A unique science classroom experiment that demonstrates how clouds are formed. Cloud chamber includes a needle tipped with an alpha particle source, an absorbent base material and a styrofoam insulating block. When saturated with alcohol and cooled with dry ice, a cloud of alcohol vapor is created in the chamber. If a bright light source is introduced, the curved tracks of alpha particles appear as the condensation of droplets. **SJ39,830 \$19.95**

Every Detail Of Your Eye Enlarged.

Check contact lenses and inspect your own eye with our unique close-up eye inspection mirror. Our precision radius mirror with front surface coating allows you to inspect your own eye by simply holding the mirror approximately 2 inches in front of your eye. Ideal for contact lens wearers or to inspect for irritant alien particles. Mirror is 2 inches in diameter with front surface aluminized coating. **SJ39,152 \$9.95**

Motors By The Bag For Hobbyists, Modelmakers.

Our inexpensive motors can make wheels go round, propellers turn. Unlimited applications. Have fun by adding motion to your science fair projects, demonstrations and experiments with this special buy of 20, 1" motors with 1/8" long shafts. **20, 1" Motors SJ1304 \$14.95**

Our Lowest Price Compact Laser Pointer. It's Lightweight, Measures Less Than 5" NEW!

Ideal for lecturers, educators, instructors, other professionals. It projects a brilliant red laser dot to focus attention to slide presentations, charts, business and sales meetings at distances up to 300 feet. This compact pen style class IIIa laser pointer is crafted of the finest materials and built to the highest industrial standards. 1 1/2 hours continuous battery life, uses 2 "AA" batteries incl. Weighs less than 2 oz. Rated output: 3mW at 670nm. Carries 3 year manufacturer's limited warranty. **SJ52,117 Price Breakthrough! ONLY \$89**

Powerful Miniature Motor Runs At 9500 RPM Yet It's Only Barely Thicker Than A Pencil.

This permanent magnet motor powered by only one 1.5V "AA" battery (not incl.) can turn its shaft at 9500 RPM, current with no load 90mA. Complete with a miniature propeller that provides many applications for the imaginative model maker. Measures 3/4" x 1/2" dia., shaft dia. 0.059" x 0.35" long. Battery holder attaches directly to motor. Overall length 2 7/8". **SJ39,281 \$4.25**

Metric Triple Balance Ohaus Scale With Single Pan Balance.

The classic weighing instrument, provides accurate weights year after year. Rugged construction, weigh anything—liquids, solids, or live animals. Three tiered, notched beams (100-550, 10-100, 0-10 grams) have center readings, sliding poises. 610 gram cap. Stainless 6" platform 18x6x6". **SJ71,695 \$93. Acc. Wt. Set, expands scale to 2, 610 cap. incl. 1-500 and 2-1,000 gr. wts. SJ41,766 \$28.00**

Miniature Water Pump For Photo Darkrooms, Science Fairs, Water Displays.

This tiny pump can pump a pint per minute with a 12" high flow. Ideal for temperature control and circulation of darkroom chemicals, table fountains, model waterfalls, water filtration and more. Can be used in either direction and is self priming. Operates on 2 flashlight batteries (not incl.), runs up to 48 hours before battery change is required. 4" tube incl. **SJ50,345 \$7.50**

"700 Science Experiments For Everyone"—An Exciting Book For Science Fair Projects.

A brand new, up-to-date edition of the best known science experiment book in the world. Compiled by science instructors under the auspices of UNESCO in Paris. 251 pages, featuring optical projects, electricity, chemistry, astronomy, magnetism, geology, physiology and more. Describes experiments with easy-to-follow instructions, diagrams. **SJ301 \$13.95**

Radiometer...A Space Age Sphere.

It's fascinating to watch the delicate vanes within this 5" precision-made sphere spin faster and faster illustrating the basic principle of solar heating. When light strikes the vanes it transfers heat, and the vanes begin to move. Workers from direct sunlight or artificial light. An attractive "conversation piece". **SJ60,082 \$6.95**

Can You Tell Which Ball Is A Happy Buncher, And Which Ball Is Not?

Two seemingly identical black spheres with marked differences in their physical properties. They have the same density, mass, color and appearance yet when dropped to the floor one jumps wildly, the other is motionless. Marvellous thought provoker for discrepant event science. Fast sheet on physical and chemical properties plus experiments for classroom use included. **SJ39,129 \$3.25/Pair; 10 pairs or more \$2.75**

Make Rocketry Your Next Science Project.

Junior astronauts and scientists...now you can actually make a rocket capable of flying up to 100 feet high. All you need is this kit, an empty plastic bottle and a bicycle pump. Powered only by air and ordinary water, it will develop approx. 25 PSI with a theoretical thrust of 3.9 lbs. Can be flown hundreds of times. Complete instructions incl. **SJ39,978 \$19.95**

Edmund's Famous Jumping Quarters Leap 3 Feet Into The Air!

Full of fun and surprises. Simply click the jumping disc between your fingers, rub for a second, lay it on any smooth surface, and POP! It leaps into the air, 3 feet high. Friends won't be able to resist tinkering with them. **How does it work?** The nickel and stainless steel discs work on the principle of thermodynamics. Heat (rubbing the discs) makes metal expand, a cool surface makes it contract. **12 Jumping Quarters SJ42,099 \$4.25**

Newton's Third Law Of Motion Demonstrated With The 5-Ball Swinging Wonder.

It's hard to put down once you start playing with it. Swing one of the nickel plated balls and watch the one on the opposite side swing back. Consists of 5 balls suspended by monofilament to a wood frame. **SJ33,729 \$22.95**

Our Amazing Happy Bird Never Stops Drinking!

Fascinating to watch. Simply duck the bird's head into a glass of water to begin happy birds bobbing motion. Then the bird takes over, continuously dipping into the water for a drink. **SJ60,778 \$3.95**

Save \$3.85 on our famous favorites



Our Most Popular Science Fun Assortment

Classic science demonstration toys have amazed and intrigued young minds for many generations. You'll have fun and learn scientific demonstrations with these favorites:

- Perpetual drinking bird **A \$25.80 Value SJ37,471**
- Whirling gyroscope
- Sun-powered radiometer **SPECIAL \$21.95 PRICE**
- Amazing flying bird

Digital Thermometer Shows BOTH Indoor AND Outdoor Temperature, Memory For Day's High AND Low!

Now, you'll know at a glance, with large, easy-to-read LED readout numbers, both the outside and inside temperature. Thermometer also records high and low readings. F° or C° selectable—40°F to +122°F. 7x3/4x1/4". Easy to mount, uses 2 "AA" batteries (not incl.). Complete with 10' probe sensor cord. **Reg. \$46 on Sale SJ38,038 \$30**

Have You Ever Seen The Inside Of Your Eye?

Eye scope is an optical device for looking at the inside of your eye. It's a specially designed diffuser incorporating a parabolic mirror and lens light. Safe and easy to use. A 52 page booklet included, describes the various features inside the normal eye; how the iris works, kinds of floaters and food objects, how to inspect contacts. **SJ33,538 \$29.95**

250 Assorted Stars That Glow In The Dark Turn Any Wall Or Ceiling Into The Night Sky.

Assortment of 250 luminous stars that glow in the dark on ceiling or wall. Your students will enjoy receiving these "star" gifts that will light up a room with the beauty of glowing stars and have fun with astronomy. Easy to apply decals glow after exposure to light. Comes with star chart and instructions to recreate the Big Dipper, Milky Way and the heavens. **SJ9521 Pkg. @ 250 \$4.50**

The Vanishing Leprechaun...Will Anyone Ever Solve This Mystery?

A fascinating illusion. We found it at a math teachers seminar. A 3x7" card with 15 leprechauns. With a "sight-of-hand" one leprechaun will vanish. Your friends will be mystified. **Which one vanishes? Where did he go? When he comes back, where has he been?** One of our most popular best-sellers! **SJ37,473 \$6.50**

Why Does This Amazing Space Pet or Celt Always Spin In A Counter Clockwise Direction?

Originally called "Celts" because their curious properties were first discovered by archaeologists studying prehistoric axes and axes called Celts. These rocks had a preferred direction of rotation. Spin the space pet the other way and it will stop, rock up and down on the long axis, and then reverse its spin. Hint: the round edge is an ellipsoid, with its axis aligned at an angle of 5° to 10° from the main axis of the stone. Angular momentum is conserved, but it doesn't look it. Made of injection molded acrylic. Size: 3/4" x 1/4" x 1/2". **Pkg. of 3 SJ38,912 \$5.95**

FREE 112 PAGE CATALOG

Featured on this page are only a few of the many imaginative products that appear in our new catalog.

Send for your copy today.

Thousands of exclusive, unique and exciting values. Something educational, fascinating and useful for every hobbyist, gadgeteer, student and educator.

Edmund Scientific Co.
 Dept. 13D2, C922 Edscorp Bldg., Barrington, NJ 08007

STOCK NO. QTY. PRICE

METHOD OF PAYMENT:
 Check enclosed VISA
 MasterCard Diners Club
 American Express Carte Blanche
 Discover Optima

Exp. Date _____
 Card Number _____ Total Price _____
 Bank Number (MasterCard only) _____ In NJ Add 6% Sales Tax
 Signature _____ Add \$2.50 for postage and handling
 RUSH FREE 112 PAGE FULL COLOR CATALOG TOTAL ENCLOSED _____

Name _____
 Address _____
 City _____ State _____ Zip _____

Serving Science Hobbyists Since 1942

For Phone Orders, Call 1-609-547-8880
 for friendly special treatment
 Use VISA, MasterCard, Diners Club, Am. Exp., Discover, Carte Blanche or Optima. Call anytime, 24 hours a day.
MOST ORDERS SHIPPED WITHIN 48 HOURS

No Risk Guarantee! If you are not completely satisfied with your purchase, return the merchandise in its original package and we will cheerfully refund your money in full. **We back our products!**
 Our 45 day unconditional guarantee means you take no risk on any product you buy from us.

Edmund Scientific Co.
 Dept. 13D2, C922 Edscorp Bldg., Barrington, NJ 08007