

SCIENCE NEWS®

The Weekly Newsmagazine of Science

A Science Service Publication
Volume 139, No. 4, January 26, 1991

E. G. Sherburne Jr.	Publisher
Patrick Young	Editor
Laurie Jackson	Managing Editor
Janice Rickerich	Production/Design Director
Bruce Bower	Behavioral Sciences
Ivan Amato	Chemistry/ Materials Science
Richard Monastersky	Earth Sciences
Janet Raloff	Environment/Policy
Ron Cowen	General Science
Kathy A. Fackelmann, Rick Weiss	Life Sciences/ Biomedicine
Ivars Peterson	Mathematics/Physics
Jonathan Eberhart	Space Sciences
Jennifer L. Miller	Editorial Assistant
Wendy Gibbons	Science Writer Intern
Liz Marshall	Books/Resource Manager
Donald R. Harless	Advertising/Business Manager

SCIENCE NEWS (ISSN 0036-8423) is published weekly on Saturday, except the last week in December, for \$34.50 for 1 year or \$58.00 for 2 years (foreign postage \$6.00 additional per year) by Science Service, Inc., 1719 N Street, N.W., Washington, D.C. 20036. Second-class postage paid at Washington, D.C., and additional mailing office. **POSTMASTER:** Send address changes to SCIENCE NEWS, 231 West Center Street, Marion, OH 43305. Change of address: Four to six weeks' notice is required — old and new addresses, including zip codes, must be provided.

Copyright © 1991 by Science Service, Inc. Title registered as trademark U.S. and Canadian Patent Offices. Printed in U.S.A.

Editorial and Business Offices:
1719 N St., N.W., Washington, D.C. 20036
(202-785-2255)

Republication of any portion of SCIENCE NEWS without written permission of the publisher is prohibited.

Subscription Department:
231 West Center St., Marion, OH 43305
For new subscriptions only, call 1-800-247-2160.

This Week

- 52 Quasar Clumps Dim Cosmological Theory
- 52 Heavenly bodies make their UV film debut
- 53 Ultrasound reveals sickle-cell stroke risk
- 53 Climate test: Hum heard 'round the world
- 54 Beverages intoxicated by lead in crystal
- 54 C₆₀: Definitely a beauty, maybe a beast
- 54 Asthma culprit cloned
- 55 Fiftieth search honors student scientists
- 55 Antibody treatment joins AIDS battle

Research Notes

- 59 Astronomy
- 59 Biomedicine
- 63 Environment
- 63 Space Sciences

Articles

- 56 A Melancholy Breach
- 60 Ribbon of Chaos

Cover: Navy researchers have succeeded in controlling the chaotic wavering of a metallic ribbon by judiciously adjusting the magnetic field driving the ribbon's motion. The image on the left shows how slight changes in the magnetic field can shift the position of the computer-generated "chaotic attractor" corresponding to the ribbon's motion; each color represents the effect of a slightly different magnetic field. Such control, focused on a single point in the attractor, enables the researchers to keep the ribbon's motion from changing erratically. The inset demonstrates the possibility of maintaining control even in the face of ambient "noise" and measurement errors. (Images: Naval Surface Warfare Center)



Departments

- 50 Books
- 51 Letters

Science Service Institution for the public understanding of science founded 1921; a nonprofit corporation.

Board of Trustees — *Chairman*, Glenn T. Seaborg; *Vice Chairman*, Gerald F. Tape; *Treasurer*, Willis Harlow Shapley; Joseph W. Berg Jr.; Robert W. Fri; David A. Goslin; J. David Hann; Milton Harris; Leon M. Lederman; Shirley M. Malcom; Elena O. Nightingale; Ben Patrusky; H. Guyford Stever; Deborah P. Wolfe.

Honorary Trustees — Edward Bliss Jr.; Bowen C. Dees; O.W. Riegel; John Troan.
President: E. G. Sherburne Jr.; Business Manager: Donald R. Harless.

Letters

Reef richness and risks

In "Bleached Reefs" (SN: 12/8/90, p.364), I was erroneously cited as saying that coral reefs may support more species than all other marine ecosystems combined. What I said was that they may have more species than any other *individual* marine ecosystem.

This is an important difference, because I agree with marine species-diversity authority Howard Sanders in feeling that the two most species-rich marine ecosystems are coral reefs and the deep-water community living at the base of the continental slope. In both ecosystems, the great majority of species have yet to be scientifically described, so it is premature to say which has the largest number. But coral reefs certainly have the highest biomass and productivity *per unit area*. In addition, they are under the greatest threat. Deep-sea communities should be the last to be affected by global change.

The risk at which coral reefs are now placed by the record seawater temperatures of 1990 and preceding years may become irreversible

within a few years unless prompt steps are taken to protect them by halting global warming, treating sewage, reforesting watersheds, halting unsustainable harvesting of corals, reef organisms or sand, and developing mariculture as an alternative to overfishing. Otherwise, tropical marine countries will soon face large economic costs from depletion of their fisheries, reduced nourishment of beach sand for tourism, loss of shoreline protection from hurricanes, and destruction of the capacity to adapt to rising sea levels.

Thomas J. Goreau
President
Global Coral Reef Alliance
Chappaqua, N.Y.

Data differentiation

While MANSCAN images did successfully differentiate among people using varying degrees of short-term memory in a "memory" experiment at EEG Systems Laboratory, these data were not used to predict eventual accuracy of response, as suggested in "Shadows of Thoughts Revealed" (SN: 11/10/90, p.297). Pre-

dictability of performance accuracy was studied in an earlier experiment focusing on visuo-motor responses.

Judy Ihes
Research Neuropsychologist
EEG Systems Laboratory
San Francisco, Calif.

On labels and learning

In his reply to my letter on the origin of seemingly paradoxical behaviors such as altruism (SN: 9/15/90, p.163; 12/8/90, p.362), Tom Cole objected, in effect, that I was sneaking religion in through the back door and that it had no place in a scientific discussion.

It's curious that Mr. Cole could assert so confidently that my views were "obviously based on a fundamentalist interpretation of the Bible," considering that my letter mentioned neither Christianity nor the Bible — and neither did the particular ideas of C.S. Lewis that I paraphrased. Also, Mr. Cole's character-

Letters continued on p.58