

SCIENCE NEWS®

The Weekly Newsmagazine of Science

A Science Service Publication
Volume 140, No. 18, November 2, 1991

Alfred Scott McLaren Publisher
Patrick Young Editor
Laurie Jackson Managing Editor
Vaughan Editor
Janice Rickerich Production/Design Director
Janet Raloff Senior Editor
Environment/Policy
Bruce Bower Behavioral Sciences
Elizabeth Pennisi Chemistry/
Materials Science
Richard Monastersky Earth Sciences
Ron Cowen General Science/
Space Sciences
Carol Ezzell, Life Sciences/
Kathy A. Fackelmann Biomedicine
Ivars Peterson Mathematics/Physics
Larry Norland Editorial Assistant
Karen Schmidt 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 \$39.50 for 1 year or \$68.00 for 2 years (foreign postage \$6.00 additional per year) by Science Service, Inc., 1719 N Street, N.W., Washington, DC 20036. Second-class postage paid at Washington, DC, 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, DC 20036
(202-785-2255)

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

Subscription Department:
231 West Center Street, Marion, OH 43305
For new subscriptions only, call 1-800-247-2160.
For customer service, call 1-800-347-6969.

Letters

Searing indictment

The smoke of your article on pollution from charbroiled meat ("Cholesterol: Up in Smoke," SN: 7/27/91, p.60) obscures a more important concern: the effect of that picnic flavoring on our bodies.

Oven broiling liquefies and drips away meat fat, whereas charbroiling also combusts and pyrolyzes a portion of it. Char organics and pyrolysis products are known for their unhealthful character. These compounds rise up with the smoke and are condensed onto and absorbed by the meat. The more one charbroils meat, the more hazardous it becomes.

Yes, carrot salad would be better for us.
Charles A. Thomas
Pittsburgh, Pa.

In her discussion of meaty air pollution, Janet Raloff might also have mentioned that modern intensive farming methods of raising animals for meat are a major source of water pollution, and that the consumption of meat is

This Week

- 276 Antipsychotics Evoke Youthful Concerns
- 276 Salt's technique for tickling the taste buds
- 277 Mysterious hormone forecasts AIDS onset
- 277 Drilling holes to keep photons in the dark
- 278 Teeth offer a taste of ancient lifestyles
- 278 Summer ozone loss detected for first time
- 279 Crystallized 'coiled coil' zaps leucine zipper
- 279 Prairie dogs beware: The ferrets are back

Research Notes

- 286 Earth Science
- 287 Materials Science
- 287 Space Science

Articles

282 Back to the Quantum Future

Cover: Researchers have discovered that by marrying classical concepts with quantum mechanics, they can obtain useful insights into atomic and molecular behavior, even when the underlying classical mechanics is chaotic. Here, an electron ricochets like a billiard ball through a two-dimensional crystal of "atoms" (black disks). In this situation, an electron can follow a periodic (blue) or chaotic (red) trajectory. The background colors represent a solution of the quantum-mechanical equation predicting this system's behavior. (Illustration: Eric J. Heller/University of Washington)

285 Stress Goes to the Dogs

Departments

- 274 Books
- 275 Letters

Science Service, a nonprofit corporation founded in 1921, gratefully accepts tax-deductible contributions and bequests to assist its efforts to increase science and mathematics literacy among the young and minorities, and to advance the public understanding of science in general.

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; Leon M. Lederman; Shirley M. Malcom; Elena O. Nightingale; Ben Patrusky; H. Guyford Stever; Sanford J. Ungar; Deborah P. Wolfe.
Honorary Trustees — Edward Bliss Jr.; Bowen C. Dees; O. W. Riegel; John Troan.

President: Alfred Scott McLaren; Vice President and Business Manager: Donald R. Harless.

a major source of "body pollution," contributing to heart disease, cancer and diabetes. By the time you factor in the heavier burden imposed on our soil and water resources by meat production compared with vegetable production, Ms. Raloff's suggestion of tabouli and carrot salad sounds better than ever.

Given the increasing pollution of our oceans, however, I'll pass on the poached salmon.

Bina Robinson
Swain, N.Y.

Family factors

Before we equate quality daycare with better emotional well-being and behavior, and with a greater likelihood of participating in school programs for the gifted ("Infant daycare: Nothing beats quality," SN: 8/24/91, p.118), I would suggest considering some other factors: What are the intellectual levels of the parents of these children? How do these parents handle their offspring in the hours outside of daycare? What are the levels of maturity of these

parents? We might then get a more complete picture.

I think all children should receive top-quality daycare and general educational services.

Evelyn M. Cohen
Lecturer, Dept. of Curriculum & Instruction
McGill University
Montreal, Quebec

Vibes from the '60s

Talk about reinventing the wheel! The definitive article on the general topic of "Shaking up powder physics" (SN: 7/27/91, p.59) was published more than two decades ago: "Sand Compaction With Vibratory Rollers," D'Apollonia *et al.*, ASCE JOURNAL OF SOIL MECHANICS AND FOUNDATION ENGINEERING 95 (SM1), p.264 (1969). This article explains why vibration at near 1-g acceleration works better, compared with higher or lower accelerations.

John K. McDonald
Soil Engineer
Portland, Ore.



NOVEMBER 2, 1991

275