

SCIENCE NEWS®

The Weekly Newsmagazine of Science

Science Service Publication
Volume 146, No. 11, September 10, 1994

Alfred Scott McLaren	Publisher
Patrick Young	Editor
Blair Burns Potter	Managing Editor
Dan Skripkar	Production/Design Director
Greg W. Pearson	Associate Editor
Janet Raloff	Senior Editor Environment/Policy
Ron Cowen	Astronomy
Bruce Bower	Behavioral Sciences
Richard Lipkin	Chemistry/ Materials Science
Richard Monastersky	Earth Sciences
Tina Adler	General Science
Kathy A. Fackelmann, Elizabeth Pennisi	Life Sciences/ Biomedicine
Ivars Peterson	Mathematics/Physics
Larry Norland	Editorial Assistant
Cait Anthony	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 \$44.50 for 1 year or \$78.00 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, 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 © 1994 by Science Service, Inc. Title registered as trademark U.S. and Canadian Patent Offices. Printed in U.S.A. on recycled paper. ♻️

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

This Week

- 164 Computing a Flame's Turbulent Flickers
- 164 Genome sweep finds two new diabetes genes
- 165 Ancient tidal fossils unlock lunar secrets
- 165 T cells cure leukemic mice
- 165 Siblings get boost in mental knowledge
- 166 Taking the temperature of the far cosmos
- 166 Source of withdrawal pangs found in brain
- 167 Wine: This stain could mar reputations

Research Notes

- 168 Anthropology
- 168 Astronomy
- 175 Biomedicine
- 175 Physics

Articles

- 170 Tending Nature's Garden
Cover: Though considered silent residents of a forest, trees actually carry out inaudible conversations. Tropical biologists are learning how these dialogues, as well as tussles with other organisms, reshape treetops. (Aerial photo: Carl C. Hansen, Smithsonian Institution's National Museum of Natural History, Washington, D.C.)
- 172 Reassessing Radium's Risks

Departments

- 162 Books
- 163 Letters

Science Service, which publishes SCIENCE NEWS, is a nonprofit corporation founded in 1921. It gratefully accepts tax-deductible contributions and bequests to assist its efforts to increase the public understanding of science, with special emphasis on young people. More recently, it has included in its mission increasing scientific literacy among members of underrepresented groups. Through its Youth Programs it administers the International Science and Engineering Fair, the Science Talent Search for the Westinghouse Science Scholarships, and publishes and distributes the *Directory of Student Science Training Programs for Precollege Students*.

Board of Trustees — *Chairman*, Glenn T. Seaborg; *Vice Chairman*, Gerald F. Tape; *Secretary*, David A. Goslin; *Treasurer*, Willis Harlow Shapley; Joseph W. Berg Jr.; Robert W. Fri; J. David Hann; Dudley Herschbach; Shirley M. Malcom; Elena O. Nightingale; Ben Patrusky; Peter H. Raven; 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.

Letters

'Sticky foam' a sticky subject

The article on Sandia National Laboratories' "sticky foam" (SN: 6/18/94, p.390) was quite disturbing. Chlorofluorocarbons are known to damage the ozone layer and exacerbate global warming, and their use is being phased out under the Montreal Protocol. So why are federally funded engineers working to invent new uses for them?

Any benefits to law enforcement from the sticky foam surely would be more than offset by the environmental damage they would create, to say nothing of the waste-disposal problem they would present!

Michael Sklar
Ann Arbor, Mich.

An unbuyable bicarb

"Bicarb spares old bones" (SN: 6/25/94, p.405) made my husband and me curious to know what *potassium bicarbonate* is and how it may be obtained. Our pharmacist looked in every large directory he had and could not find

any such compound listed as being commercially available.

If it is as effective in halting or reversing loss of bone in postmenopausal women as it was reported to be, I (along with thousands of others) would like to get some! Is it approved for use? If so, where is it available?

Kay Richter
Milwaukee, Wis.

The potassium bicarbonate used is not available in the United States. The team we reported on imports it from overseas and is allowed to use it only for experimental studies.

— J. Raloff

Determining consciousness

"The Conscious Mind" (SN: 7/2/94, p.10) offers a fascinating glimpse into Karen Ann Quinlan's life and the chemistry of consciousness. The metaphor of Descartes' thought that the pineal gland housed consciousness rather leads the article to conclude that perhaps the thalamus is its actual "location."

And yet I wonder. If the thalamus is simply and only a switching station — such that

nothing goes in or out to *indicate* consciousness — might that mean that Quinlan was conscious, just trapped inside her head with her own thoughts, memories, and dreams? Were there any brain scans that might have been able to indicate that conscious thought processes (signs of intellect as opposed to bodily function) were occurring? Further, it sounds as if she was a good candidate for a fetal brain tissue implant into the thalamus (when and if that is approved).

Perhaps there is a glimmer of hope for others like Karen Ann Quinlan if it turns out that she was conscious, only incapable of demonstrating it.

James David Jones
Sewanee, Tenn.

Address communications to:
Editor, SCIENCE NEWS
1719 N Street, N.W.
Washington, D.C. 20036
All letters subject to editing.

SEPTEMBER 10, 1994

163