

SCIENCE NEWS®

The Weekly Newsmagazine of Science

Science Service Publication
Volume 149, No. 2, January 13, 1996

Alfred Scott McLaren	Publisher
Julie Ann Miller	Editor
Blair Burns Potter	Managing Editor
Dan Skripkar	Production/Design Director
David Lindley	Associate Editor
Janet Raloff	Senior Editor
Ron Cowen	Environment/Policy
Bruce Bower	Astronomy
Richard Lipkin	Behavioral Sciences
Richard Monastersky	Chemistry/ Materials Science
John Travis	Earth Sciences
Kathleen Fackelmann, Lisa Seachrist	Biology
Tina Adler	Biomedicine
Ivars Peterson	Life Sciences
Damaris Christensen	Mathematics/Physics
Cait Anthony	Editorial Assistant
Donald R. Harless	Books/Resource Manager
	Advertising/Business Manager

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. 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 © 1996 by Science Service, Inc. Title registered as trademark U.S. and Canadian Patent Offices. Printed in U.S.A. on recycled paper. ♻️
Replication 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.

This Week

- 20 First, Fleeting Glimpse of Antiatoms
- 20 Myrrh: An ancient salve dampens pain
- 21 New musings about old Martian puzzles
- 21 Metal-tainted trout operating on overload
- 22 Spanish find provides lift to ancient ape
- 22 Building structures molecule by molecule
- 22 Yew drug fights cancer
- 23 1995 captures record as warmest year yet
- 23 Immune cells primed for cancer vaccine

Research Notes

- 26 Astronomy
- 31 Biomedicine
- 31 Chemistry

Articles

- 24 New Year in Space Science
- 28 Brains in Space

Cover: To understand how we retain and use spatial information, investigators are imaging the brains of people while they explore virtual environments such as a brick wall maze. (Image: Geoffrey K. Aguirre et al.)

Departments

- 18 Books
- 19 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, 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, Elena O. Nightingale; Ben Patrusky; Peter H. Raven; H. Guyford Stever; Sanford J. Ungar; Deborah P. Wolfe. Honorary Trustees — Chairman Emeritus, Glenn T. Seaborg; Edward Bliss Jr.; Bowen C. Dees; O.W. Riegel; John Troan.

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

Letters

Ups and downs of pitch

In "Device measures speed with white light" (SN: 9/30/95, p. 215), you state, "As a train comes into the station, the pitch of its whistle rises. As it leaves, the pitch falls." This is a widely held misunderstanding.

At a constant speed, the train has a single, higher pitch as it approaches and a single, lower pitch as it leaves. The change occurs essentially instantly as the whistle passes the observer. Possibly the misunderstanding results from the fact that changes in amplitude and pitch occur together, and a person "remembers" a change in amplitude in part as a change in pitch.

Ralph Miller
Medford Lakes, N.J.

Brain, not bones, key to evolution

Millford Wolpoff's comment that *Homo sapiens*' survival hinged increasingly on cultural-

ly acquired knowledge and tools is significant ("Pruning the Family Tree," SN: 9/2/95, p. 154). Since the development of cultural knowledge and tools was possible only because of the evolution of our unique brain capabilities, Wolpoff is saying in effect that our survival as a species has been determined by the evolution of effective decision-making and problem-solving brain structures and processes rather than by behavior traits, as in other species.

This brain evolution may have occurred in only one branch with the unique anatomical features of *Homo sapiens*, or anatomically similar branches may have evolved slightly different brain structures that over time proved ineffective for survival.

Bones will not tell us which scenario is correct.

Marilyn Kramer
Wausau, Wis.

Having read "Kenyan fossils unveil new

hominid species" (SN 8/19/95, p. 119) and "Pruning the Family Tree," I wonder if scientists have begun looking for signs in modern hominids of the next human evolutionary iteration or have attempted to predict how our descendants will evolve.

Scott Townell
Voorhees, N.J.

Some scientists argue that *Homo sapiens* can no longer evolve into new species because we exist in numbers too large to allow for the prolonged isolation of a subpopulation—a condition thought to be necessary for speciation to occur.
— B. Bower

Send communications to:
Editor, SCIENCE NEWS
1719 N Street, N.W.
Washington, D.C. 20036
or: scinews@scisvc.org
All letters subject to editing.