

THIS WEEK

Brain injury research: A new approach 388
Tropic development study released 388
Fossils shed light on Pliocene gap 389
Earliest known scalping 389
Potential California quake hazard 390
Killifish prowess: Enzyme variability 390
A look ahead to Halley 391
Monsanto-Washington U. research accord 391
Slaughter resigns as NSF director 391

RESEARCH NOTES

Earth Sciences 392
Behavior 392
Environment 393
Biomedicine 393

ARTICLES

Digital processing of X-ray images 394
Ultrasound assessed 396

DEPARTMENTS

Letters 387

COVER: Diagnostic ultrasound exposure before birth doesn't seem to pose any immediate major health problems. However, the possibility of it exerting subtle or long-range health problems remains to be ruled out, particularly as it has brought about some *in vitro* effects — such as alteration of the surface of cells like this mouse fibroblast. See p. 396. (Photo courtesy of Doreen Liebeskind and colleagues, Albert Einstein College of Medicine)

PUBLISHER: **E. G. Sherburne Jr.**

EDITOR: **Joel Greenberg**

SENIOR EDITOR/PHYSICAL SCIENCES:
Dietrick E. Thomsen

ASSISTANT EDITOR: **Judy Klein**

BEHAVIORAL SCIENCES: **Wray Herbert**

BIOMEDICINE: **Joan Arehart-Treichel**

CHEMISTRY: **Linda Garmon**

EARTH SCIENCES: **Cheryl Simon**

LIFE SCIENCES: **Julie Ann Miller**

POLICY/TECHNOLOGY:

Janet Raloff, Ivars Peterson

SPACE SCIENCES: **Jonathan Eberhart**

CONTRIBUTING EDITORS: **Lynn Arthur Steen (mathematics), Kendrick Frazier, John H. Douglas, Michael A. Guillen**

SCIENCE WRITER INTERNS: **Laura Tangle, Kathy A. Fackelmann**

ART DIRECTOR: **Ileana Mendez**

ASSISTANT TO THE EDITOR: **Betsy Gordon**

BOOKS: **Jane M. Livermore**

BUSINESS MANAGER: **Donald R. Harless**

ADVERTISING: **Scherago Associates, 1515 Broadway, New York, N.Y. 10036, Fred Dieffenbach, Sales Director**

Copyright ©1982 by Science Service, Inc., 1719 N St., N.W., Washington, D.C. 20036. Republication of any portion of SCIENCE NEWS without written permission of the publisher is prohibited.

Editorial and Business Offices
1719 N Street, N.W.
Washington, D.C. 20036

Subscription Department
231 West Center Street
Marion, Ohio 43302

Subscription rate: 1 yr., \$27.50; 2 yrs., \$47.50; 3 yrs., \$67.00. (Foreign postage \$5.00 additional per year.) Change of address: Four to six weeks' notice is required. Please state exactly how magazine is to be addressed. Include zip code. For new subscriptions only call (1) 800-247-2160. Printed in U.S.A. Second class postage paid at Washington, D.C. Title registered as trademark U.S. and Canadian Patent Offices. Published every Saturday by SCIENCE SERVICE, Inc. 1719 N St., N.W., Washington, D.C. 20036. (202-785-2255) ISSN 0036-8423

LETTERS

Exonerating EPA

I must take exception to the charges listed in your article "Environmental coalition of 10 groups attacks Reagan policies" (SN: 4/10/82, p.246). The report upon which your article was based is inaccurate and misleading. It accuses President Reagan of breaking faith with the American people on environmental protection, and implies that the President and his appointed officials have simply refused to do the job that the laws require. These statements are not true.

For instance, the charge that EPA is weakening air pollution controls by proposals to increase lead in gasoline and doubling auto nitrogen oxide and carbon monoxide emission standards, is misleading. On February 22, 1982 EPA published in the FEDERAL REGISTER a proposed rule for revision of current lead phase-down regulations. We have proposed a comprehensive range of regulatory alternatives which include retaining the current program, rescinding existing regulations, and a number of other options. We held a two-day public hearing on these alternatives and heard testimony from nearly 100 witnesses representing large refiners, small refiners, experts from the medical profession, environmentalists, and concerned citizens. We will receive written comments through May 17, 1982. No decision has been made concerning the lead phasedown regulations.

The Clean Air Act established the goal of 90 percent reduction of the auto emission of hydrocarbon and carbon monoxide by 1980 and 1981, and 75 percent reduction of nitrogen oxide emissions by 1981. The air quality problems posed by carbon monoxide have been greatly reduced and the nitrogen oxide problem is small. Emissions of carbon monoxide will improve under either the current standard of 3.4 grams per mile or under the 7.0 grams per mile that we recommend. Nitrogen oxide emissions will continue to decrease under either the currently required 1.0 grams per mile standard or the 2.0 grams per mile standard that we recommend.

The report further charges that EPA is adding to acid rain problems by increasing sulfur dioxide emission by 1.5 million tons a year and a proposal to extend the deadline for meeting those standards. Sulfur dioxide levels declined by more than 40 percent during the last decade, and only three percent of the sulfur dioxide monitors nationwide now record violations for this pollutant. While we expect that the vast majority of the country will be in compliance with the standards by the end of 1982, some areas will not meet the statutory deadline. For the areas that cannot attain the standard by the end of 1982, we propose an extension until 1987.

The charge that EPA has halted enforcement actions against illegal dumpers of hazardous wastes and the suspending prohibitions against burial of liquid wastes in drums is inaccurate. Enforcement actions in our hazardous waste program have not been halted. The Agency is continuing to press responsible parties — through legal action, if necessary — to clean up sites threatening public health or the environment. Where this cannot be done, or if it cannot be accomplished in a timely manner, EPA and the states will finance remedial action under

Superfund. On March 17, 1982, the Agency restricted disposal of containerized liquids in hazardous waste landfills. Under an interim rule, no containers holding free-standing liquids may be placed in a landfill.

The Reagan administration's environmental agenda is not secret, but clear and overt — a strong Environmental Protection Agency to meet the environmental protection goals of the nation.

Byron Nelson
Environmental Protection Agency
Washington, D.C.

Correlation and causation

Mr. Greenberg noted that, in order for a "cause-effect relationship" to be established between imipramine binding and suicide, the researchers want to see further replication of their data (SN: 5/29/82, p. 355). I would like to suggest that for any biological process — especially those involving personality — cause and effect are not established in such a facile way.

The kind of reasoning used by behavioral scientists frequently appears parallel to an assertion that high white counts cause mononucleosis — after all, there has been an almost endless amount of replication of the correlation between the two.

The research findings about imipramine binding are extremely interesting and encouraging. But let us not forget that correlation implies absolutely nothing concerning causation. Even if manipulation of serotonin levels is found to decrease suicidal behavior, there will still be no indication that low levels caused suicidal behavior, only that they are a significant factor in a complex behavioral process that potentially is related to other biological factors (how do they know that serotonin levels are not a result of suicidal depression?), and to social and even dietary influences.

Brian C. Mustain
Lincoln, Ill.

A vaporific masterpiece

"... Ronald Reagan appears to be simply an amiable boob who loves to tell stories and who rarely has his facts straight ..." (SN: 5/8/82, p.307), so says Wayne Fields in "Placing the blame," a truly vaporific masterpiece.

Your publication is aimed at thinking readers, I hope. You don't have to serve up this kind of philippic along with the magazine's other content, which is first class.

I hope Editor Joel Greenberg's head skin is not too thick to get the point when I suggest that the label "amiable boob" comes to mind when he decides what's worth printing.

Thomas D. Moder
Oakland, N.J.

What's in a name

PCB contamination of cooking oil (SN: 5/29/82, p. 361) occurred in Kyushu, Japan (not Yusho). "Yusho" means "oil sickness" and refers specifically to the form of intoxication which your article describes. Incidentally, among the victims were nine babies exposed to PCBs before birth. Two were stillborn. Five of the live-born were small for gestational age. They had skin discoloration which gave rise to the term "cola-colored babies," and two were born with teeth (an otherwise rare event). Long-term health effects, or lack thereof, on these congenitally affected children can only be assessed by continued observation.

Richard P. Leavitt
March of Dimes
White Plains, N.Y.