

**OF THE WEEK**

A distinctive asteroid of peace	228
Carcinogens: On-the-job hazards	228
Playing crazy eights with Doublet	229
Immunity on command	229
Space shuttle launch reset	230
Antigens that work against themselves	230
Schizophrenia over diagnosis	230
APS: Reprieve from IRS	231
Rat bone growth halted in space	231

**RESEARCH NOTES**

Zoology	232
Physical Sciences	232
Natural Sciences	233

**ARTICLES**

Antiprotons: Tools of the future	234
----------------------------------	-----

**DEPARTMENTS**

Letters	227
Books	239

**COVER:** This is the ring that CERN built. These are the antiprotons that live in the ring that CERN built. The antiprotons live a good long time for antiprotons, up to 85, indicating that the Initial Cooling Experiment, as the ring is called, is successful in holding and circulating beams of antiprotons. The ultimate aim is colliding beams of protons and antiprotons. See p. 234. (Photo: CERN)

<b>Publisher</b>	E. G. Sherburne Jr.
<b>Editor</b>	Robert J. Trotter
<b>Senior Editor and</b>	
<b>Physical Sciences</b>	Dietrick E. Thomsen
<b>Behavioral Sciences</b>	Joel Greenberg
<b>Biomedicine</b>	Joan Arehart-Treichel
<b>Life Sciences</b>	Julie Ann Miller
<b>Policy/Technology</b>	Janet Raloff
<b>Space Sciences</b>	Jonathan Eberhart
<b>Contributing Editors</b>	Lynn Arthur Steen (mathematics)
	Kendrick Frazier
	John H. Douglas
	Michael A. Guillen
<b>Assistant Editor</b>	Judy Klein
<b>Art Director</b>	Dale Appleman
<b>Assistant to the</b>	
<b>Editor/Staff Writer</b>	Susan West
<b>Books</b>	Jane M. Livermore
<b>Business Manager</b>	Donald Harless
<b>Advertising</b>	Scherago Associates 1515 Broadway New York, N.Y. 10036 Fred W. Dieffenbach, Sales Director

Copyright © 1978 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., \$12.50; 2 yrs., \$22; 3 yrs., \$30. (Add \$2 a year for Canada and Mexico, \$3 for all other countries.) Change of address: Four to six weeks' notice is required. Please state exactly how magazine is to be addressed. Include zip code.

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) TWX 710-822-9433 SCIEN NEWS. ISSN 0036-8423

# LETTERS

**Pushing and pulling**

"May the force be with you," quipped SCIENCE NEWS in presenting a letter from Gary J. Cook (SN: 7/29/78, p. 67) suggesting a *one force* approach to theories of gravity, etc. SCIENCE NEWS is particularly adept at scattering those delightful witticisms among the profundities.

If Mr. Cook is, in effect, suggesting sighting down only one research barrel, it might be prudent to load the gun with scatter shot to increase the chances of a hit. Suppose, for instance, gravity is the target and all research efforts are pointed toward some sort of pulling force. Generally speaking, nature is as much a pusher as a puller, and may even have the option of combining the two. It might then be advantageous for research purposes to shoot for (1) a directional impulse emanating from all matter and (2) a responding power thrust within all matter shoving everything toward those impulses.

Viz.: Earth to falling Skylab, "We're down here." Skylab to Earth, "On target!"

And speaking of Skylab, perhaps the Russians could be prevailed upon to boost our Skylab back into a safe orbit on their next trip out. While such a maneuver may not solve any field force problems, I wouldn't want to miss SN's handling of the story.

Glenn D. Reyner  
Norris, Tenn.

**Looking at the big picture**

Let me be the first to say that we shall miss Dietrick Thomsen — he's been an excellent translator of the various private languages of the sciences. In his recent think-piece, however (SN: 8/26/78, p.141), it is clear that the man is beginning to come apart at the Snovian seam between the "two cultures."

This is not surprising. The strangeness and the lack of communication between our intellectual and scientific communities will disturb any sophisticated mind, as it disturbed C. P. Snow and Santayana and Schrodinger and Korzybski and even Aquinas, for that matter.

But it seems to me that SCIENCE NEWS is in an excellent position to do something about this schizoid condition of Western culture. Why not start beating the editorial drums for academic budgets for studies in the restructuring and resynthesis of Western thought, in both its scientific and religious dimensions? Let's get our intellectuals off their nit-picking Positivism and their navel-inspecting Freudianism, and get them back to the original and proper business of philosophy — the Big Picture! The Ionian tradition. The grand manner of the Greek intellectual before Alexander.

God knows Western man is in sore need of a big picture — he's beginning to choke on the accumulated trivia of his knowledge, suffering acute cerebral dyspepsia, as he stumbles about in the growing dark and disorder of his burgeoning works.

John Wise  
St. Louis, Mo.

**Input on metric**

As the recently appointed Science Representative to the United States Metric Board, I would appreciate receiving input from the readers of SCIENCE NEWS on your experiences and concerns with the increasing use of the SI metric system in the United States. The United States Metric Board was created by Public Law 94-168 "to declare a national policy of coordinating the increasing use of the metric system in the United States and to establish a United States Metric Board to coordinate the voluntary conversion to the metric system." The Board will be most effective in its task with your input. I will look forward to hearing from you.

Bruce P. Johnson, Ph.D.  
3190 West 7th St.  
Reno, Nev. 89503

**Let's put science to work**

Why has the research on test tube fertilization (SN: 8/5/78, p.84) become a moral and religious issue? Why can't scientists be allowed to conduct research to help people overcome the limitations of their own biology? We remove life-threatening cancers and fit prostheses to amputees, but when the system involved is that of reproduction the whole thing explodes into an Awful Moral Issue. Who cares, besides some self-appointed moral watchdog, whether an unimplanted fertilized egg constitutes an abortion. Call it what you like! I submit that a more pressing question is how many angels can dance on the head of a pin — they never have answered that one.

And to fear the technique's misuse is to fear all of science and mistrust the judgment and integrity of scientists. Most of us are not fiends bent on controlling the world with super-weapons or a race of controlled supermen. We have babies or suffer from infertility like everybody else. But instead of fearing our bodies we seek ways of bypassing our individual imperfections and thereby fulfilling our lives. Please, let us stop the witch hunts and let scientists resume research on a most promising technique for the relief of human suffering.

Merry Makela, Ph.D.  
Houston, Tex.

Address communications to Editor,  
Science News, 1719 N Street, N.W.  
Washington, D.C. 20036  
Please limit letters to 250 words.

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

SCIENCE SERVICE

**Board of Trustees**—President, Glenn T. Seaborg, University of California, Berkeley, CA; Vice President, Gerald F. Tape, Associated Universities, Washington, DC; Treasurer, Milton Harris, Washington, DC; Secretary, Julius Duscha, Washington Journalism Center, Washington, DC; Allen V. Astin, Bethesda, MD; Joseph W. Berg Jr., National Research Council, Washington, DC; Edward Bliss Jr., Newburyport, MA; Bowen C. Dees, The Franklin Institute, Philadelphia, PA; David A. Goslin, National Research Council, Washington, DC; Elizabeth R. Neufeld, National Institutes of Health, Bethesda, MD; O. W. Riegel, Glasgow, VA; Aaron Rosenthal, Washington, DC; Edward W. Scripps II, Edward W. Scripps Trust, Carson City, NV; John Troan, Pittsburgh Press, Pittsburgh, PA; Deborah P. Wolfe, Queens College of City University of New York, Flushing, L.I., NY

Director: E. G. Sherburne Jr.; Assistant Director: Dorothy Schriver; Business Manager: Donald R. Harless; Things of Science: Ruby Yoshioka.