

**OF THE WEEK**

A look at Saturn	180
Tapping trees for oil	182
Report card for female cadets	182
FDA head chosen	182
Life's origins: Looking up and down	183
PCB's and male sterility	183
Detecting potential industrial cancer victims	183

**RESEARCH NOTES**

Biomedicine	188
Technology	188

**ARTICLES**

Putting together the mitochondrial puzzle	184
Audio animals in the wild	186

**DEPARTMENTS**

Letters	179
---------	-----

**COVER:** Saturn, with its rings and their shadow on the planet's cloud tops, photographed by the Pioneer 11 spacecraft from 395,000 kilometers away on Sept. 1. This view, processed to enhance the rings at the expense of the planet's coloration, shows the rings' anti-sunward surface, which earthlings virtually never see. Though some details are difficult to see in this image, clearly visible, from the bottom up, are the A ring, Cassini Division, B ring and C ring, followed by their shadows in reverse order. See p. 180. (Photo: NASA. Reproduction by Dunn Instruments, Inc.)

<b>Publisher</b>	E. G. Sherburne Jr.
<b>Editor</b>	Robert J. Trotter
<b>Senior Editor and Physical Sciences</b>	Dietrick E. Thomsen
<b>Behavioral Sciences</b>	Joel Greenberg
<b>Biomedicine</b>	Joan Arehart-Treichel
<b>Earth Sciences</b>	Susan West
<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>Science Writer Interns</b>	Mary-Sherman Willis Susan Walton
<b>Assistant Editor</b>	Judy Klein
<b>Art Director</b>	Dale Appleman
<b>Assistant to the Editor</b>	Angela Musick
<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 © 1979 by Science Service, Inc., 1719 N St., N.W., Washington, D.C. 20036. Reproduction 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  
Telephone (1) 800—247-2160

Subscription rate: 1 yr., \$15.50; 2 yrs., \$27.00; 3 yrs., \$37.50 (Add \$3 a year for Canada and Mexico, \$4 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

**East, West: What's best?**

In reference to the Off the Beat "Mystic Physics" (SN: 8/4/79, p. 94), what is the controversy between Eastern metaphysics and Western physics? Surely we can learn much from both points of view. I know I have learned much from studying Eastern thought, but I feel their quietism is not properly tempered with a concern for and involvement in events of the physical world. Yet I also feel that Western man tends to lose awareness of his inner states, and tries to fulfill his inner needs through physical things even when this is neither appropriate nor effective.

I also feel that reality is far vaster and more profound than any of our models of it. However, by contemplating it and trying to understand it we are changed, and we grow in our sense of wonder as well as our understanding. We are human beings, both thought and feeling, and either one without the other is incomplete. Ideally, thought and feeling are in dynamic harmony, enriching and sustaining one another, just as matter and energy do.

(Incidentally, as a physics major in Berkeley in the early 60s, the resemblance between ancient metaphysics and modern physics struck me very forcefully.)

*Diana Davies  
St. Paul, Minn.*

**Pioneer 11 on the tube**

I, for one, would ask for national coverage on television as well as newspaper on the Pioneer 11 transmissions from Saturn. We need as many ways as we can find to revitalize the American public's attitude towards science, technology and the space program.

*Chester Twarog  
Aurora, Colo.*

**Bringing Nessie to light**

Your recent article on the Loch Ness monster (SN: 8/18/79, p. 122) proved most enjoyable, as I have just returned from a three-week stay in Scotland, visiting Loch Ness on August 7. I must say that the article brought to light some points that I hadn't seen before—not in the books that I got there. Your sense of timing, in this case, was superb. Keep up the good work!

P.S.: And no, we saw no trace of Nessie.

*Perry Glen Moore  
Nashville, Tenn.*

**Exhibit appreciation**

In regard to the article "Evolution on Exhibit" (SN: 7/7/79, p. 10): I visited the exhibit and found it very informative. The ideas of differentiation, genetics, natural selection and speciation were easily comprehended.

Had it not been for your article I would not have been informed of the exhibit's existence and missed out.

*Debi Treweek  
Gainesville, Fla.*

**Sign language**

In addition to enjoying the article "Reflections on a 10-Meter Mirror" (SN: 7/28/79, p. 76), I immensely enjoyed the sign that can be seen in the photograph of astronomer Sandra Faber, above her left shoulder (p. 77).

I am curious to know (1) if it is her sign, (2) if she believes it (I do), and (3) how many readers noticed it.

I most certainly enjoy SCIENCE NEWS, as I have for a goodly number of years. It is the one publication that I will not allow my subscription to expire. Continued success to you.

*Jerry Vogt  
Berkeley, Calif.*

**Space telescope vs. 10-m telescope**

Concerning the proposal for a 10-meter telescope by the astronomers of the University of California (SN: 7/28/79, p. 76), I would urge a serious comparative analysis with a space telescope designed for the same purpose. Dr. Kuhl's idea for remote operation and automated operations will already be in effect on the space telescope. One would also envision engineering and design of a space machine as being cheaper than an earth machine. Evaluating transportation costs of a space telescope vs. a 14,000-foot observatory in the late 1980s might also yield an interesting comparison.

*Louis D. Friedman  
Washington, D.C.*

**A foreign language**

It seems that I am being forced to go metric because many people do not understand the English system of units. A clerk in an appliance store goes blank when I ask for a 0.10-hp electric light bulb. And that isn't clarified by saying, instead, a 55-ft-lb s<sup>-1</sup> bulb. The result is no better when trying to buy a 1.33-hp electric iron, that is, a 44,000-ft-lb (min)<sup>-1</sup> or 22 ft ton (min)<sup>-1</sup> iron. Since the overall efficiency of a utility's system of boiler, steam turbine, electric generator and transmission lines is about 33 percent, one could use a number three times as great in each case and thus give the energy input per unit time at the central power station. But all that probably wouldn't help either.

I also encounter a total block when trying to get a 0.315-in. movie film, and when requesting a diet menu which will provide 10,000 Btu a day. When will they learn English?

*M.R. Wehr  
Havertown, Pa.*

*Correction: The diagram accompanying the story "Vive la maser: New French development" (SN: 8/11/79, p. 102) was not a schematic of a Rydberg master but rather a diagram of the opto-acoustic technique described in the article "H<sub>2</sub>O: An absorbing story" on that same page.*

**SCIENCE SERVICE**

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

**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 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.

