

OF THE WEEK

acupuncture study	84
eagleton's stigma	85
soviet cooperation	85
military rainmaking	86
shuttle contract	87
hoyle-narlikar theory	87
nsf education funds	87

NOTES

physical sciences	88
behavioral sciences	88
medical sciences	89
natural sciences	89

ARTICLES

satellite implications	90
nerves and hormones	93

DEPARTMENTS

letters	83
films	95
books	95

Cover: Several Indonesian islands were photographed July 27 by the newly launched ERTS I earth resources satellite. This cluster of islands is near the eastern end of the Lesser Sunda Islands. Expected future capabilities in observing resources from space raise important international issues. See p. 90. (Photo: NASA)

Publisher E. G. Sherburne Jr.
Editor Kendrick Frazier
Aerospace Everly Driscoll
Behavioral Sciences Robert J. Trotter
Earth Sciences Louise A. Purrett
Environment Richard H. Gilluly
Medical Sciences Joan Arehart-Treichel
Physical Sciences Dietrick E. Thomsen
Copy Editor Nadine Clement
Production E. Cherry Doyle
Assistant to the Editor Esther Gilgoff
Books Margit Friedrich
Circulation Manager Lawrence Cope
Advertising Scherago Associates, Inc.
11 W. 42nd St., New York, N.Y. 10036
Fred W. Dieffenbach
Sales Director

Copyright © 1972 by Science Service, Inc., 1719 N St., N.W., Washington, D.C. 20036. Republication of any portion of SCIENCE NEWS is strictly prohibited.

Subscription Department
231 West Center Street
Marion, Ohio 43302

Subscription rate: 1 yr., \$10; 2 yrs., \$18; 3 yrs., \$25. (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. Established as Science News Letter in mimeograph form March 13, 1922. 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). Cable: SCIENSERV.

Home fuel cell

I found the article "Is there a fuel cell in every home's future?" (SN: 7/15/72, p. 37) to be quite interesting as I participated in a study in 1961 (sponsored by the American Gas Association) which had as one of its background motivations the idea that gas would be the sole source of energy for homes and commercial buildings. There are now large buildings in the country for which the only energy input is gas.

Today I find the situation to be confusing. On the one hand we find that we are running out of natural gas. There are restrictions placed upon residential and commercial construction because of a shortage of gas. On the other hand I learn from the aforementioned article that \$50 million has been invested in an energy supply system whose source is dwindling and may have to be replaced in the near future. Tell me, do the gas people know of some secret reservoir of gas that will be "discovered" when the price is right? I feel that SCIENCE NEWS will do its readers a service by reporting on the general subject of our reserves of energy with emphasis upon natural gas.

*Harold F. Klock, Professor
Dept. of Electrical Engineering
College of Engineering and Technology
Ohio University
Athens, Ohio*

Your article on the fuel cell was very informative and brought us up to date on this very important development. The straight hydrogen-oxygen cell with natural gas as the source of hydrogen is the simplest and cheapest type now available. One can envision many homes and industries in the future powered by these devices.

Unfortunately the development is based on a dwindling supply of natural gas, which very well may delay final development of the device.

*Walter J. Seeley
Dear Emeritus
School of Engineering
Duke University
Durham, N.C.*

Alaska pipeline

Re: Merrill T. Endicot's letter concerning Judge Hart, the Alaska pipeline, etc. (SN: 7/8/72, p. 18).

Speaking only for myself, I must say

that I for one am becoming a bit fed up with having apologists for the oil companies, official and unofficial, prophesy all kinds of unpleasant consequences if the exploitation of our oil resources is in any way inhibited by law or regulation. I am fully aware that the enactment of certain conservation measures will result in a higher price for gasoline and other forms of energy. I am prepared to pay these prices, but so far the oil interests have been so successful in blocking these measures that I haven't had the opportunity of doing so.

I hope Endicot is not so naive as to believe the main reason the oil companies want the Alaska pipeline is the altruistic one of sparing their customers higher costs. Wouldn't it be more realistic to suppose they favor it because they stand to profit greatly thereby?

*David J. Meschi
Lawrence Berkeley Lab.
Berkeley, Calif.*

Life on other planets

The recent discovery of the pervasive presence of X-rays in our galaxy leads us to a revision of our ideas about the presence of intelligent life on other planets in our galaxy. We have been led to believe that of the uncounted suns that are our galactic neighbors, many millions have planets, and of these there may be life on hundreds of thousands, and intelligent life on thousands. We have no proof, of course. But knowing the deadly effect of X-rays on life, we must now speculate further.

Is it a law of galaxies that in creation planets are naturally surrounded by a protective environment as is ours, so that life may develop normally? Or that life on planets exposed to a continuous bombardment of X-rays may acquire an immunity, or resistance to such an environment so that after all there may be sentient life on these thousands of favored planets in this galaxy, as well as in others, elsewhere. It is not likely that we shall ever know.

*Willis A. Boughton
Fort Lauderdale, Fla.*

(According to the processes of planet formation that are generally believed in, sizable planets will develop and retain atmospheres. It is probable that some of these will not only protect against X-rays but also have the gas composition and thermal regime suitable to life.—Ed.)

*Address communications to Editor,
Science News, 1719 N Street, N.W.
Washington, D. C. 20036*

SCIENCE SERVICE

Institution for the Popularization of Science founded 1921; a nonprofit corporation

Board of Trustees—Nominated by the AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE: **Bowen C. Dees**, The Franklin Institute; **Athelstan Spilhaus**, Woodrow Wilson International Center for Scholars; **Deborah Partridge Wolfe**, Queens College. Nominated by the NATIONAL ACADEMY OF SCIENCES: **Gerald F. Tape**, Associated Universities; **Allen V. Astin**, National Bureau of Standards; **Frederick Seitz**, Rockefeller University. Nominated by the NATIONAL RESEARCH COUNCIL: **Gerald Holton**, Harvard University; **Jacob Rabinow**, National Bureau of Standards; **Glenn T. Seaborg** (President), University of California at Berkeley. Nominated by the JOURNALISTIC PROFESSION: **Norman Cousins**, "World"; **Julius Duschka**, Washington Journalism Center; **O. W. Riegel** (Secretary), Washington and Lee University. Nominated by the E. W. SCRIPPS TRUST: **Milton Harris** (Treasurer), Washington, D.C.; **Edward W. Scripps II** (Vice President and Chairman of the Executive Committee), Edward W. Scripps Trust; **John Troan**, Pittsburgh Press.

Director: E. G. Sherburne Jr.; Assistant Director: Dorothy Schriver; Business Manager: Donald R. Harless; Staff: Youth Division: Max C. McLean; Things of Science: Ruby Yoshioka.