

# SCIENCE NEWS®

The Weekly Newsmagazine of Science



A Science Service Publication  
Volume 125, No. 4, January 28, 1984

E. G. Sherburne Jr. Publisher  
Joel Greenberg Editor  
Dietrick E. Thomsen Senior Editor/  
Physical Sciences  
Joanne Silberner Managing Editor  
Judy Klein Production/Design  
Director  
Wray Herbert Behavioral Sciences  
Deborah Franklin Biomedicine  
Linda Garmon Chemistry  
Cheryl Simon Earth Sciences  
Julie Ann Miller Life Sciences  
Janet Raloff, Policy/Technology  
Ivars Peterson  
Jonathan Eberhart Space Sciences  
Wendy McCarren Assistant to the Editor  
Joan C. Amatniek, Science Writer Interns  
Stefi Weisburd  
Jane M. Livermore Books  
Donald R. Harless Business Manager  
Scherago Associates Advertising  
Fred Dieffenbach, Sales Director  
1515 Broadway, New York, N.Y. 10036

Copyright © 1984 by Science Service, Inc.,  
Editorial and Business Offices,  
1719 N St., N.W., Washington, D. C. 20036.  
Republication of any portion of SCIENCE NEWS  
without written permission of the publisher is  
prohibited.

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

### Economy of oil shale

The major problem associated with developing the crude oil potential of oil shale ("Squeezing Oil Out of Stone" [SN: 12/3/83, p. 362]), aside from environmental consequences, appears to be efficiency. How many calories are necessary to extract 1000 calories equivalent in a specified quantity of crude shale oil? How much energy is necessary to produce the energy found in the 10,000 barrels per day by the Union pilot operation, and how does this requirement compare to other alternative crude oil and energy production sources? How long would be the production life of these oil shale fields in the United States if the energy produced had to supply not only present U.S. demands but also the compounded demands of having all present demands supplied by crude shale oil?

## This Week

- 52 Stitchless Junction Supports Healing Nerves  
52 The perils of pandas: Where has all the bamboo gone?  
Cover: Flowering—a rare occurrence—and subsequent die-off of arrow bamboo in the Chinese Sichuan province threatens more than a quarter of the wild giant panda population. (Photo: World Wildlife Fund)  
53 NMR imaging offers new view of pelvis  
53 Gambling with depression: Tonic action?  
54 Talent search winners announced  
54 Bone broken, Lucky needs retread  
54 Frost rings used to date eruptions  
55 Japan threatens U. S. biotech lead  
55 Science caught in U. S.-UNESCO crossfire

## Research Notes

- 58 Behavior  
59 Biomedicine  
59 Science & Society

## Articles

- 60 Pee Wee Predator  
62 Mind Maps

## Departments

- 51 Letters  
63 Books

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

**Board of Trustees**—President, Glenn T. Seaborg; Vice President, Gerald F. Tape; Treasurer, Willis Harlow Shapley; Secretary, Julius Duscha; Joseph W. Berg Jr.; Edward Bliss Jr.; Bowen C. Dees; David A. Goslin; Milton Harris; Hilleary F. Hoskinson; Elizabeth F. Neufeld; O. W. Riegel; H. Guyford Stever; John Troan; Deborah P. Wolfe.

Director: E. G. Sherburne Jr.; Assistant Director: Dorothy Schriver; Business Manager: Donald R. Harless.

## A Thomson by any other name

I found the article "Wine-Tasting in Vitro" (SN: 12/3/83, p. 365) most interesting. However, I believe that Dietrick Thomsen has gotten his Thompsons mixed-up. Benjamin Thompson bore the title of Count Rumford. According to my somewhat ancient Columbia Encyclopedia, it was William Thomson who bore the title of 1st Baron Kelvin.

Both Thompson and Thomson were noted for their studies on heat which might make for confusion.

Alan J. Parcels  
Kalamazoo, Mich.

In answering these questions, the realization may be that oil shale development will become the primary consumer of its own product. Perhaps economic realities are a reflection of this fact.

Stuart Luttich  
Regional Wildlife Biologist  
Gov't. of Newfoundland and Labrador  
Goose Bay, Labrador

## Units for breakeven

Your note on fusion breakeven (SN: 11/12/83, p. 311) did not mention that the reaction involved is deuterium-tritium; for a D-D one, the Lawson criterion would have been about 100 times higher. This criterion is not a dimensionless number, the quoted result should have been  $7 \times 10^{13} \text{ cm}^{-3} \times \text{sec}$ .

Guy Faucher  
Prof., Dept. of Engineering Physics  
Ecole Polytechnique  
Montreal, Canada

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

JANUARY 28, 1984

51