

# SCIENCE NEWS®

The Weekly Newsmagazine of Science

A Science Service Publication  
Volume 136, No. 8, August 19, 1989

E. G. Sherburne Jr. Publisher  
Patrick Young Editor  
Laurie Jackson Managing Editor  
Janice Rickerich Production/Design Director  
Bruce Bower Behavioral Sciences  
Ivan Amato Chemistry/  
Materials Science  
Richard Monastersky Earth Sciences  
Janet Raloff Environment/Policy  
Kathy A. Fackelmann, Rick Weiss, Ingrid Wickelgren Life Sciences/  
Biomedicine  
Ivars Peterson Mathematics/Physics  
Jonathan Eberhart Space Sciences  
Liz Marshall Editorial Assistant  
Ron Cowen, Stephen Hart Science Writer  
Wendy McCarren Books/Resource Manager  
Donald R. Harless Advertising/Business  
Manager

Copyright © 1989 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 43305

Subscription rate: 1 yr., \$34.50; 2 yrs., \$58.00.  
(Foreign postage \$6.00 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. POSTMASTER:  
Send address changes to Science News, 231 West  
Center Street, Marion, OH 43305. Second class  
postage paid at Washington, D.C., and additional  
mailing offices. 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

### Material difference

It seems surprising to me that so many accomplished physicists and chemists are finding different results and generally having difficulty repeating Pons and Fleischmann's results ("Cold fusion gets a bruising from DOE," SN: 7/29/89, p.78). When things do not make much sense, it is usually productive to look at the assumptions at work. What if they are actually all correct in their experimental results but are making an assumption about their experimental materials?

Imagine for a moment that the fusion is a surface phenomenon on the electrode. Hardness, electrical conductivity, speed of light, thermal expansion, rate of crystal growth, rate of solution and cleavage are all vectorial properties of solids that vary with the different crystal planes. It would not be too surprising that the fusion effect also depends on the crystallographic axis. Depending on

### This Week

- 116 Blood Pressure: Questioning a Maxim
- 116 Monkey vaccine prevents AIDS-like disease
- 117 Atomic fountain springs from a light touch
- 117 Teenagers reap broad benefits from 'authoritative' parents
- 118 A snake-in-the-ring keeps spins aligned
- 118 Tracking down the neurons of perception
- 119 Lethal *Listeria* surfaces on fresh vegetables
- 119 Voyager sees Neptunian ring-arcs at last
- 119 Bay area shock may foreshadow strong quake
- 124 Surveys slash away at forest estimates

### Research Notes

- 126 Biomedicine
- 126 Chemistry
- 127 Earth Sciences
- 127 Environment

### Articles

#### 120 Please Pass the Genes

Cover: Scientists are juggling genes in the garden, experimentally endowing plants with traits to enhance their durability and nutritional value. As the gene-altered plant foods near the market, researchers begin to address the potential safety concerns of consumers. (Photo: United Fresh Fruit and Vegetable Association)



### Departments

- 114 Books
- 115 Letters

**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; Joseph W. Berg Jr.; Edward Bliss Jr.; Robert W. Fri; David A. Goslin; J. David Hann; Milton Harris; Leon M. Lederman; Elena O. Nightingale; Ben Patrusky; H. Guyford Stever; Deborah P. Wolfe.  
**Honorary Trustees**—Bowen C. Dees; O.W. Riegel; John Troan.

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

how the surface of the electrode is oriented relative to the crystallographic axis of the material, the results could be quite varied.

When the palladium is sawed from a larger piece, the faces of the palladium electrode are not likely to be coincident with a crystallographic plane in the metal electrode. Accordingly, experiments with sawed or reworked palladium would give poor or inconsistent results. When the palladium is cast and cooled quickly, the crystals are randomly oriented and small, and are not oriented coincident with a surface of the metal electrode. Experiments with quickly cast and cooled palladium would also give poor or inconsistent results.

If it is a surface phenomenon on the electrode, then the surface damage could cause the effect to cease after a brief period of success. One would think that where fusion occurs, the surface might become damaged. Imagine an experimenter who sees results but then later does not. Wouldn't he retract

his statement and question his devices (and possibly his sanity as well)?

There have been reports that stirring extinguishes the apparent fusion. This may be due to the disorientation of the surface layer of heavy water on the palladium crystal lattice.

If this were the answer to the discrepancies, a lot of people might feel better about their experimental results. Perhaps they are all correct after all.

Laurie Johansen  
La Crescenta, Calif.

Address communications to:

Editor, **SCIENCE NEWS**

1719 N St., NW

Washington, D.C. 20036

Please limit letters to 250 words.

All letters subject to editing.

AUGUST 19, 1989

115