

SCIENCE NEWS®

The Weekly Newsmagazine of Science

A Science Service Publication
Volume 130, No. 15, October 11, 1986

E. G. Sherburne Jr. Publisher
Joel Greenberg Editor
Dietrick E. Thomsen Senior Editor/
Physical Sciences
Laurie Jackson Managing Editor
Wendy McCarren Production/Design
Director
Bruce Bower Behavioral Sciences
Joanne Silberner Biomedicine
Stefi Weisburd Earth Sciences
Lisa Davis Life Sciences
Janet Raloff, Policy/Technology
Ivars Peterson
Jonathan Eberhart Space Sciences
Richard Monastersky Assistant to
the Editor
Ivan Amato, Science Writer
Trina Kleist Interns
Jane M. Livermore Books
Donald R. Harless Advertising/Business
Manager

Copyright © 1986 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., \$29.50; 2 yrs., \$50.00.
(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., 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

This Week

- 228 Age, Depression, Drugs Linked to Suicide
- 228 The return of rheumatic fever?
- 229 Huntington's disease: Clues to the culprit
- 229 NASA sets shuttle launch date, schedule
- 230 Home apnea checks: Caveats for infants
- 230 Financing Superfund
- 230 Patent Office: New rules for 'secrets'
- 231 Largest melt from lightning strike
- 231 Graham is confirmed
- 231 A dizzying orbit for a binary star

Research Notes

- 238 Biology
- 238 Biomedicine
- 239 Earth Sciences
- 239 Physics

Articles

234 Survival of the Fetus

Cover: The birth of a healthy child depends on complicated interactions between fetus and mother, including mitigation of the mother's immune system. The uterus recognizes when a foreign organism such as a fetus is there. But the fetus protects itself by secreting a substance that limits the activity of immune system cells in the uterus, according to David A. Clark of McMaster University. (Photo: Joel Greenberg)

236 Staring at the Poles of the Sky

Departments

- 226 Books
- 227 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; *Secretary*, Hilleary F. Hoskinson; *Joseph W. Berg Jr.*; *Edward Bliss Jr.*; *Bowen C. Dees*; *David A. Goslin*; *David Hann*; *Milton Harris*; *Elena O. Nightingale*; *O.W. Riegl*; *H. Guyford Stever*; *John Troan*; *Deborah P. Wolfe*.

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



Letters

Archivists left in the lurch

"Putting it on paper permanently" (SN: 9/6/86, p. 153) gave the reader a very negative view of the archival capability of magnetic recording. My reading of the report from the National Academy of Sciences does not support the statement that "magnetic tapes themselves last only 10 to 20 years." My own experience belies that statement. Iron oxide is stable, film base is stable and the binder is stable, as the report states.

What is not stable is the equipment technology. Recording density continually advances, pushing out old equipment to make way for better. This can leave the archivist in the lurch. This may not happen if, for the archival applications, we choose a standard and stay with it for a predetermined period, instead of leaping to the next innovation. After all, we have stayed with paper for 200 years. We do not store data on paper at its ultimate capability of 100 line pairs/mm; rather we stay at a comfortable and adequate 8-10 line pairs/mm. So with magnetic tape we might reason-

ably stay with, say, 10 million bits/square inch (156,000 8-bit-bytes), which represents a real density compression of about 1,500 to 1 of the printing in SCIENCE NEWS.

Since tape is typically less than half the thickness of paper, but written only on one side, this represents the ability to volume compress by 1,500: 1 also.

All we will need, then, is to obtain an undertaking from one or two large companies in the magnetic recording business to provide durable equipment that will be supported for archival time spans.

R.J. McClure
San Diego, Calif.

Correction: "CO₂: An additional source of methane?" (SN: 9/6/86, p. 150) may have implied that all increases in agricultural yields since the Industrial Revolution have been due to fertilization from carbon dioxide. In fact, only about 8 to 12 percent of increased yields may be due to this effect, according to Boyd Strain, a botanist at Duke University in Durham, N.C.

STATEMENT OF OWNERSHIP, MANAGEMENT AND CIRCULATION Required by 39 U.S.C. 3685		
1. TITLE OF PUBLICATION SCIENCE NEWS	2. PUBLICATION NO. 0 6 3 6 8 4 2 3	3. DATE OF FILING September 30, 1986
4. FREQUENCY OF ISSUE weekly	5A. NO. OF ISSUES PUBLISHED ANNUALLY 52	5B. ANNUAL SUBSCRIPTION PRICE \$29.50
7. COMPLETE MAILING ADDRESS OF HEADQUARTERS OF PUBLISHER (Street, City, County, State and ZIP Code) (Not printed)		
1719 N Street, N. W., Washington, D. C. 20036		
8. COMPLETE MAILING ADDRESS OF THE HEADQUARTERS OF GENERAL BUSINESS OFFICES OF THE PUBLISHER (Not printed)		
1719 N Street, N. W., Washington, D. C. 20036		
9. FULL NAME AND COMPLETE MAILING ADDRESS OF PUBLISHER, EDITOR AND MANAGING EDITOR (The name MUST NOT be blank)		
PUBLISHER (Name and Complete Mailing Address)		
E. G. Sherburne Jr., 1719 N Street, N. W., Washington, D. C. 20036		
EDITOR (Name and Complete Mailing Address)		
Joel P. Greenberg, 1719 N Street, N. W., Washington, D. C. 20036		
MANAGING EDITOR (Name and Complete Mailing Address)		
Laurie Jackson, 1719 N Street, N. W., Washington, D. C. 20036		
10. OWNER (If owned by a corporation, its name and address must be stated and also immediately thereunder the names and addresses of stockholders owning or holding 1 percent or more of total amount of stock. If not owned by a corporation, the names and addresses of the individual owners must be given. If owned by a partnership or other unincorporated firm, its name and address as well as that of each individual must be given. If the publication is published by a proprietor, his name and address must be stated if (1) more than one proprietor; (2) more than one owner.)		
FULL NAME		
SCIENCE SERVICE, INC.		
COMPLETE MAILING ADDRESS		
2719 N Street, N. W., Washington, D. C. 20036		
11. KNOWN BONDHOLDERS, MORTGAGEES, AND OTHER SECURITY HOLDERS OWNING OR HOLDING 1 PERCENT OR MORE OF TOTAL AMOUNT OF BONDS, MORTGAGES OR OTHER SECURITIES (If none, so state)		
None		
12. FOR COMPLETION BY NONPROFIT ORGANIZATIONS AUTHORIZED TO MAIL AT SPECIAL RATES (See section 472 (2) (a) (ii) of the Internal Revenue Code, and nonprofit status of the organization and the correct section for Federal income tax purposes (26 CFR 1.1712-1))		
(i) HAS NOT CHANGED DURING PRECEDING 12 MONTHS		
(ii) HAS CHANGED DURING PRECEDING 12 MONTHS		
(iii) (If checked, publication must submit explanation of change with this statement)		
13. EXTENT AND NATURE OF CIRCULATION	AVERAGE NO. COPIES EACH ISSUE DURING PRECEDING 12 MONTHS	TOTAL NO. COPIES DURING PRECEDING 12 MONTHS
A. TOTAL NO. COPIES (Net Press Run)	173,761	206,690
B. PAID CIRCULATION (1. Sales through dealers and carriers, street vendors and counter sales; 2. Mail Subscriptions)	-0-	-0-
C. TOTAL PAID CIRCULATION (Sum of B. (1) and (2))	173,761	201,363
D. FREE DISTRIBUTION BY MAIL (SAMPLES, EXCHANGES, AND OTHER FREE COPIES)	647	600
E. TOTAL DISTRIBUTION (Sum of C. and D.)	174,408	201,963
F. COPIES NOT DISTRIBUTED (1. Office use, left-hand, unprocessed sheets, etc.; 2. Return from News Agents)	5,063	4,757
G. TOTAL (Sum of E. and F.) (Should equal net press run shown in A.)	179,471	206,690
14. I certify that the statements made by me above are correct and complete		
SIGNATURE AND TITLE OF EDITOR, PUBLISHER, BUSINESS MANAGER, OR OWNER Donald R. Harless, Business Manager		

OCTOBER 11, 1986

227