

SCIENCE NEWS®

The Weekly Newsmagazine of Science

A Science Service Publication
Volume 136, No. 16, October 14, 1989

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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

This Week

- 244 Regenerated Nerves Send First Messages
- 244 Gene-tracking leads to Nobel Prize
- 245 Biggest benzene risks hide close to home
- 245 Schizophrenia drug gains FDA approval
- 246 Antarctic ozone hole unexpectedly severe
- 246 Building new proteins with odd parts
- 247 Diagnosing the state of an unruly plasma
- 247 Eruption streaks Triton sky
- 247 In-school breakfasts improve test scores
- 252 Hint of a burst of supernova activity in a superluminous galaxy

Research Notes

- 254 Biology
- 254 Biomedicine
- 255 Ecology
- 255 Science & Society

Articles

248 Receptor Encounters

Cover: Like a Jackson Pollock painting come to life, gold-colored axons from serotonin-producing nerve cells distribute themselves every which way through the hippocampus region in the brain of a healthy rat. Scientists think serotonin's widespread distribution in the human brain may explain the important role this neurotransmitter seems to play in a multitude of mood disorders. (Micrograph: E. O'Hearne, M.E. Molliver/Johns Hopkins University School of Medicine)

Departments

243 Letters

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Letters

Carbon confusion

If the carbon in our bodies contained 12 neutrons ("Food Chains: The Carbon Link," SN: 9/9/89, p.168), we would have a mighty short half-life. How about 6 protons and 6 neutrons for a mass number of 12? Carbon-13 and carbon-14 contain 7 neutrons and 8 neutrons, respectively.

C. E. Hunt
Aurora, N. Y.

As you noted, mass numbers were erroneously substituted for numbers of neutrons. — S. Hart

I enjoyed "Food Chains: The Carbon Link." But I missed out on how the plant's biosynthetic route would affect the ratio of carbon-13 to carbon-12. If the inorganic carbon source (carbon dioxide) has a fixed ratio of the isotopes, wouldn't this be conserved in any synthetic product of the original carbon?

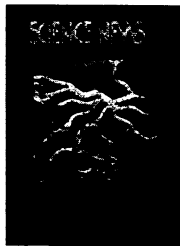
Steven W. Cohen
Langhorne, Pa.

You raise an interesting point. Plants don't preserve the carbon-12:carbon-13 ratio in the

atmosphere because they discriminate against carbon-13. Carbon-13 weighs more and forms slightly stronger bonds than carbon-12. The extra weight seems to slow its diffusion into cells. In land plants, moreover, the enzymes that first turn atmospheric carbon dioxide into complex molecules use less carbon-13 than carbon-12. And two groups of plants, called C-3 and C-4 plants, use different enzymes to build that first carbon molecule. The result is that all plants contain a lower carbon-13:carbon-12 ratio than does the atmosphere, and C-3 plants contain a lower ratio than do C-4s. — S. Hart

CORRECTION

Art Olson of the Scripps Clinic and Research Foundation generated the computer image of the catalytic antibody on the Sept. 2 cover. His name was inadvertently omitted from the illustration credit.



U.S. Postal Service STATEMENT OF OWNERSHIP, MANAGEMENT AND CIRCULATION Required by 39 U.S.C. 3685			
1A. Title of Publication	1B. PUBLICATION NO.	2. Date of Filing	
Science News	0 0 3 6 8 4 2 3	October 1, 1989	
3. Frequency of Issue	3A. No. of Issues Published Annually	3B. Annual Subscription Price	
Weekly	52	\$34.50	
4. Complete Mailing Address of Known Office of Publication (Street, City, County, State and ZIP+4 Code, if known)			
1719 N Street, N.W., Washington, DC 20036			
5. Complete Mailing Address of the Headquarters of General Business Office of the Publisher (if not the same as 4)			
1719 N Street, N.W., Washington, DC 20036			
6. Full Names and Complete Mailing Addresses of Publisher, Editor, and Managing Editor (Use one MUST NOT be used)			
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<input type="checkbox"/> Has Not Changed During Preceding 12 Months <input type="checkbox"/> Has Changed During Preceding 12 Months <input type="checkbox"/> Has Not Changed During Preceding 12 Months <input type="checkbox"/> Has Changed During Preceding 12 Months			
10. Extent and Nature of Circulation (Give circulation on separate lines)		Average No. Copies Each Issue During Preceding 12 Months	
A. Total No. Copies (Net Press Run)		239,688	
B. Paid and/or Requested Circulation		230,269	
1. Sale through dealers and carriers, street vendors and counter sales		0	
2. Mail Subscriptions (Postmaster: Please indicate)		227,212	
C. Total Paid and/or Requested Circulation (Sum of B1 and B2)		227,212	
D. Free Distribution by Mail, Carrier or Other Means (Samples, Complimentary, and Other Free Copies)		1,019	
E. Total Distribution (Sum of C and D)		228,231	
F. Copies Not Distributed		11,457	
1. Office use, left overs, unsold, spoiled after printing		0	
2. Return from News Agents		0	
G. TOTAL (Sum of E, F1 and F2—Should equal net press run shown in 10A)		239,688	
H. Total (Sum of G and F3—Should equal gross press run shown in 10A)		239,688	
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OCTOBER 14, 1989

243