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**COVER:** The mighty *Brontosaurus* has lost its head (bottom) — and gotten a new one (top). But headressing is just part of the story. See p. 314. (Illustrations: John S. McIntosh and Davis S. Berman, Carnegie Museum of Natural History)

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|--|---|
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| <b>Advertising</b>                         | Scherago Associates<br>1515 Broadway<br>New York, N.Y. 10036<br>Fred W. Dieffenbach,<br>Sales Director  |

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**Editorial and Business Offices**  
1719 N Street, N.W.  
Washington, D.C. 20036

**Subscription Department**  
231 West Center Street  
Marion, Ohio 43302

To subscribe call: (1) 800—247-2160

Subscription rate: 1 yr., \$15.50; 2 yrs., \$27.00; 3 yrs., \$37.50 (Add \$3 a year for Canada and Mexico, \$4 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. 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

## Obliterating history

Your reader Raymond Pohl (SN: 9/1/79, p.147) has a keen eye when he suggests that the circular eastern side of Hudson's Bay is the preserved remnant of an ancient meteorite crater. It's a plausible idea, and geologists are still arguing about it. Large meteorites have hit the earth in the past. More than 75 preserved ancient impact structures (astrobles) have been identified. The largest (Sudbury, Canada and Vredefort, South Africa) are more than 100 kilometers in diameter and almost 2 billion years old.

The Hudson Bay Arc is the largest of about two hundred circular structures of possible impact origin. Geologists have so far failed to find any definite evidence of impact — associated meteorites or unique shock-wave-deformation features in the rocks. On the other hand, it is hard to imagine a purely terrestrial process that would produce such a large perfect circular arc. The Belcher Islands are no help — they are made up of sediments laid down long after the arc was formed. And the impact (if it occurred) took place more than 2 billion years ago and could not have been involved with Pleistocene glaciation or human mythology.

Thanks for your good wishes, Mr. Pohl, and we'll keep looking for proof. But we may never know. Two billion years of geological history is enough to erase all the original evidence and leave nothing but a bit of the original outline, smiling from the map like the last trace of some cosmic Cheshire Cat.

*Bevan M. French*  
Discipline Scientist for Planetary Materials  
NASA Headquarters  
Washington, D.C.

## Reciprocal improvement

"Science News Goes to China" (SN: 10/13/79, p. 243) is very good. That's what I like to see. We need more of that.

SCIENCE NEWS could improve China, and, even more likely, China could improve SCIENCE NEWS.

In addition to Shakespeare, Dietrick Thomsen will now have to start quoting Confucius for his observations on the physical sciences, and there is no telling what that could lead to.

It's worth subscribing to now just to find out about that.

As they say on Wall Street, we have been witnessing a "bear market" in science for the past decade, but the increase in popular science publications (SN: 10/13/79, p. 247) may herald the beginning of a nascent scientific "bull market," perhaps in more ways than one (i.e., pun intended) if it is not careful what is said in these publications.

China has done well to pick SCIENCE NEWS. Keep up the good work.

*Kenneth J. Epstein*  
Chicago, Ill.

## Biomass from solar

In reference to "Fuel From Biomass: A Positive Balance" (SN: 9/8/79, p. 173), the best and most energetically sound method to distill the ethanol would be to use solar energy to provide all or part of the heat for this process, as is currently being done on a small scale at various places in the United States. The boiling point of ethanol is 78.5°C., well within the range of a flat plate collector. Since "the distillation consumes 50 to 80 percent of the energy used in the manufacture of ethanol," a savings of 50 to 80 percent could be realized by using solar energy. Large areas of the Southwest are already being utilized as solar heat farms. This would seem like the logical solution.

One problem remains in my mind though. The use of grain and other food products for fuel seems to epitomize the greed of the U.S. consumer for energy while a large portion of the world's population remains hungry.

*Aram Langhans*  
Odessa, Wash.

## Who's first?

It is quite untrue that "... a Soviet nuclear icebreaker was the first ship to reach the North Pole, [and] no U.S. ship has come close" (SN: 10/6/79, p. 232).

If memory serves me correctly, this honor belongs rightfully to the U.S.S. *Nautilus*, which reached the pole in August of 1958 under the command of Lt. Commander James R. Calvert, USN, and was followed shortly thereafter by the U.S.S. *Skate*.

*Philip Lee Mundhenk*  
Auburn, Ala.

(The Westwind was the first U.S. icebreaker to come that near the North Pole — Ed.)

STATEMENT OF OWNERSHIP, MANAGEMENT AND CIRCULATION			
SCIENCE NEWS			
1. TITLE OF PUBLICATION			
SCIENCE NEWS	A. PUBLICATION NO.	B. DATE OF FILING	
WEEKLY	116	11/03/79	
2. FREQUENCY OF ISSUE			
WEEKLY	C. NO. OF ISSUES PUBLISHED ANNUALLY		D. ANNUAL SUBSCRIPTION PRICE
	52		\$15.50
3. LOCATION OF HEADQUARTERS OFFICE OF PUBLICATION (Street, City, County, State and ZIP Code (not printer))			
1719 N. St., N.W., Washington, D.C. 20036			
4. LOCATION OF THE HEADQUARTERS OR GENERAL BUSINESS OFFICES OF THE PUBLISHERS (not printer)			
1719 N. St., N.W., Washington, D.C. 20036			
5. NAMES AND COMPLETE ADDRESSES OF PUBLISHER, EDITOR, AND MANAGING EDITOR			
PUBLISHER (Name and Address)			
E. G. Sherburne, Jr., 1719 N. St., N.W., Washington, D.C. 20036			
EDITOR (Name and Address)			
Robert J. Trotter, 1719 N. St., N.W., Washington, D.C. 20036			
MANAGING EDITOR (Name and Address)			
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8. FOR COMPLETION BY NONPROFIT ORGANIZATIONS AUTHORIZED TO MAIL AT SPECIAL RATES (Section 122.122, PSN) The business, function, and nonprofit status of this organization and the exempt status for Federal Income tax purposes (Check one)			
<input checked="" type="checkbox"/> HAVE NOT CHANGED DURING PRECEDING 12 MONTHS <input type="checkbox"/> HAVE CHANGED DURING PRECEDING 12 MONTHS (If changed, publisher must submit explanation of change with this statement)			
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