

SCIENCE NEWS®

The Weekly Newsmagazine of Science

Science Service Publication
Volume 144, No. 2, July 10, 1993

Alfred Scott McLaren	Publisher
Patrick Young	Editor
Laurie Jackson	Managing
Vaughan,	Editors
Blair Burns Potter	
Janice Rickerich	Production/Design Director
Greg W. Pearson	Associate Editor
Janet Raloff	Senior Editor Environment/Policy
Ron Cowen	Astronomy
Bruce Bower	Behavioral Sciences
Karen F. Schmidt	Chemistry/ Materials Science
Richard Monastersky	Earth Sciences
Daniel Pendick	General Science
Kathy A. Fackelmann,	Life Sciences/ Elizabeth Pennisi Biomedicine
Ivars Peterson	Mathematics/Physics
Larry Norland	Editorial Assistant
Bernice Wuethrich	Science Writer Intern
Cait Anthony	Books/Resource Manager
Donald R. Harless	Advertising/Business Manager

SCIENCE NEWS (ISSN 0036-8423) is published weekly on Saturday, except the last week in December, for \$39.50 for 1 year or \$68.00 for 2 years (foreign postage \$6.00 additional per year) by Science Service, Inc., 1719 N Street, N.W., Washington, DC 20036. Second-class postage paid at Washington, DC, and additional mailing office. **POSTMASTER:** Send address changes to SCIENCE NEWS, P.O. Box 1925, Marion, OH 43305. Change of address: Four to six weeks' notice is required — old and new addresses, including zip codes, must be provided.

Copyright © 1993 by Science Service, Inc. Title registered as trademark U.S. and Canadian Patent Offices. Printed in U.S.A.

Editorial and Business Offices:
1719 N St., N.W., Washington, DC 20036
(202-785-2255)

Republication of any portion of SCIENCE NEWS without written permission of the publisher is prohibited.

Subscription Department:
P.O. Box 1925, Marion, OH 43305
For new subscriptions only, call 1-800-247-2160.
For customer service, call 1-800-347-6969.

Letters

Eoraptor wrapped in controversy

Regarding the letter (SN: 4/17/93, p.243) from dinosaur researcher Fernando Novas, who claims we err in our assessment of *Eoraptor* ("The Accidental Reign," SN: 1/23/93, p.60), we used advanced skeletal traits to argue that *Eoraptor* represents a new species and that it constitutes the most primitive known theropod (flesh-eating dinosaur).

Novas states that *Eoraptor* is "morphologically far from the common ancestor" and that it represents an "ancestral theropod." But only a dozen minor skeletal features separate *Eoraptor* from the common dinosaur ancestor. Indeed, in the flesh, *Eoraptor* and the common ancestor would be difficult to distinguish. And although we believe *Eoraptor* is the most primitive known theropod, it is not an ancestral theropod because it has acquired its own peculiar species traits.

We agree with Novas that it takes a dedicated team to uncover and analyze important new finds. Our success in this regard is due to the

This Week

- 20 DNA Repeats Tied to Neuromuscular Diseases
- 20 Ballast-water invaders pose ecological risk
- 21 Exploring gravity, tides, and excited atoms
- 21 A DNA structure that tags genetic junk?
- 22 Two estimates conflict on Charon's density
- 22 Acid precipitation drops in United States
- 23 Forests in the clouds face stormy future
- 23 Mom's smoking linked to hearing defect

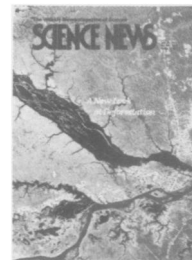
Research Notes

- 28 Archaeology
- 28 Biochemistry
- 30 Biomedicine
- 30 Environment

Articles

- 24 Taking the Temperature of Earth's Twin
- 26 The Deforestation Debate

Cover: New studies raise questions about the accuracy of past deforestation estimates. This Landsat image shows the city of Manaus on the north bank of the Rio Negro (black) where it joins the Rio Solimões (blue) to form the Amazon. Rust color denotes tropical forest; light blue patches are deforested areas, mostly situated along roads and rivers. (Image: NASA/Goddard Space Flight Center)



Departments

- 18 Books
- 19 Letters

Science Service, which publishes SCIENCE NEWS, is a nonprofit corporation founded in 1921. It gratefully accepts tax-deductible contributions and bequests to assist its efforts to increase the public understanding of science, with special emphasis on young people. More recently, it has included in its mission increasing scientific literacy among members of underrepresented groups. Through its Youth Programs it administers the International Science and Engineering Fair, the Science Talent Search for the Westinghouse Science Scholarships, and publishes and distributes the *Directory of Student Science Training Programs for Precollege Students*.

Board of Trustees — *Chairman*, Glenn T. Seaborg; *Vice Chairman*, Gerald F. Tape; *Secretary*, David A. Goslin; *Treasurer*, Willis Harlow Shapley; Joseph W. Berg Jr.; Robert W. Fri; J. David Hann; Dudley Herschbach; Shirley M. Malcom; Elena O. Nightingale; Ben Patrusky; Peter H. Raven; H. Guyford Stever; Sanford J. Ungar; Deborah P. Wolfe. *Honorary Trustees* — Edward Bliss Jr.; Bowen C. Dees; O. W. Riegel; John Troan. *President*: Alfred Scott McLaren; *Vice President and Business Manager*: Donald R. Harless.

hard work of participants from the Universities of Chicago and San Juan (Argentina).

Paul C. Sereno

Catherine A. Forster

Raymond R. Rogers

Department of Organismal Biology and

Anatomy

University of Chicago

Chicago, Ill.

Avoiding well-tainting fertilizers

Reader John P. Kelly wrote (SN: 4/10/93, p.235) that it would be extremely inefficient to deliver composted materials to farms by truck. That's true, but other methods of distribution are possible, notably, pipelines. Many agricultural communities already have irrigation canals and on-farm plumbing in place. All that would be necessary is to add ground-up organic waste to the water supply for the fields. The farmers would thus fertilize their plants when they watered them.

Chemical fertilizers are extremely toxic to humans, soil microorganisms, animals, and the environment, and some agricultural chem-

icals persist for years. What's more, many people do not realize that chemical fertilizers can also poison well water, which most rural communities use for drinking.

Elin Larson
Purcellville, Va.

Fossils found in familiar stuff

Scientists and researchers usually prefer precision in their measurements, completeness in their data, and careful accuracy in their definitions of technical terms. It was, therefore, refreshing to read ("Fossils Show Early Diversity of Life," SN: 5/1/93, p.276) that paleobiologist J. William Schopf found his 3.465-billion-year-old fossilized critters in "some sort of sticky substance."

This is a type of matter we nonscientists come across every day. Well, to be precise, almost every day.

Carl Dudash
Norfolk, Conn.

Letters continued on p.31

JULY 10, 1993

19