

SCIENCE NEWS®

The Weekly Newsmagazine of Science

Science Service Publication
Volume 146, No. 4, July 23, 1994

Alfred Scott McLaren	Publisher
Patrick Young	Editor
Blair Burns Potter	Managing Editor
Dan Skripkar	Production/Design Director
Greg W. Pearson	Associate Editor
Janet Raloff	Senior Editor Environment/Policy
Ron Cowen	Astronomy
Bruce Bower	Behavioral Sciences
Richard Lipkin	Chemistry/ Materials Science
Richard Monastersky	Earth Sciences
Tina Adler	General Science
Kathy A. Fackelmann, Elizabeth Pennisi	Life Sciences/ Biomedicine
Ivars Peterson	Mathematics/Physics
Larry Norland	Editorial Assistant
Gigi Marino	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 \$44.50 for 1 year or \$78.00 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 © 1994 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

Designing deuterium

The statement that deuterium has "been created only once — during the birth of the universe" is incorrect ("Keck Telescope looks at the Big Bang," SN: 5/28/94, p.349). Deuterium can be created in several ways, each of which has been observed.

Henry E. Heatherly
Lafayette, La.

According to Len Cowie of the University of Hawaii, one can make deuterium in the laboratory, but there are no main astrophysical sources of deuterium after the Big Bang. Some people speculate that deuterium might have been formed by supernova explosions, but if so, this amount would be insignificant. — R. Cowen

Worldwide shot statistics upheld

I am very skeptical of the EPI's report that 80 percent of the world's children were immunized against six major diseases ("A Shot in

This Week

- 52 Stress May Take Two Paths in Depression
- 52 Exploiting El Niño to avert African famines
- 53 Why steel can go snap, crackle, and pop
- 53 U.S. adults: A weighty lot
- 53 Scratching a polymer to guide light waves
- 54 Antioxidant vitamins fail to prevent polyps
- 54 Silicon gel stimulates tumors in mice
- 55 By Jupiter! Comet crashes dazzle and delight

Research Notes

- 61 Biomedicine
- 61 Earth Science
- 63 Paleontology
- 63 Technology

Articles

- 56 Guiding Light

Cover: Air scatters light from a powerful laser beam shooting into the sky. This beam excites atoms in a sodium-rich layer of the atmosphere about 95 kilometers above Earth's surface to create a bright spot of light — an artificial star — that astronomers can use to adjust a telescope's optics to correct for atmospheric turbulence. (Photo: Lawrence Livermore National Laboratory)



- 58 From Proteins to Protolife

Departments

- 51 Letters
- 60 Books

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.

Time," SN: 5/28/94, p.344). If the United States musters only 87 percent coverage, how in the world are countries like Bangladesh, India, China, Chad, and the populous Latin American countries getting 80 percent of their children immunized, as stated?

I spent 33 days in rural India on a trip for the U.S. Bureau of Mines. Most of that population, whether child or adult, is nowhere near a medical facility and almost certainly never had a vaccination of anything, let alone the six reported. I strongly suspect that dozens of other countries have the same conditions.

Gordon L. Kinney
Collins, Mo.

The Expanded Program on Immunization bases its 80 percent claim on routine reporting of vaccinations carried out in the field or on randomized national surveys. Despite the lack of amenities in many developing countries, says Amie E. Batson, a technical officer with EPI, "an incredibly complex network exists to deliver vaccines to some of the most remote corners of the globe."

Although all 50 states require that children be fully vaccinated before they enter school, many children fail to receive vaccines when they are younger and most vulnerable to disease. A 1992 U.S. survey of children age 19 months to 32 months found that 83 percent had received three doses of DPT, 83 percent had been vaccinated for measles, and only 72 percent had been given all three polio shots. By 1990, more than 80 percent of the developing world's children were being brought in four or five times for vaccinations before their first birthday.

As a result, Calcutta, Lagos, and Mexico City today have higher rates of immunization of children at ages 1 and 2 than New York City, Washington, D.C., or even the United States as a whole.

— D. Christensen

Address communications to:
Editor, SCIENCE NEWS
1719 N Street, N.W.
Washington, D.C. 20036
All letters subject to editing.

JULY 23, 1994

51