

SCIENCE NEWS®

The Weekly Newsmagazine of Science

A Science Service Publication
Volume 133, No. 15, April 9, 1988

E.G. Sherburne Jr.	Publisher
Patrick Young	Editor
Dietrick E. Thomsen	Senior Editor/ Physical Sciences
Laurie Jackson	Managing Editor
Wendy McCarren	Production/Design Director
Bruce Bower	Behavioral Sciences
Richard Monastersky	Earth Sciences
Stefi Weisburd	General Science
Diane D. Edwards, Rick Weiss	Life Sciences/ Biomedicine
Ivars Peterson	Mathematics/Technology
Janet Raloff	Policy/Technology
Jonathan Eberhart	Space Sciences
Janice Rickerich	Assistant to the Editor
Christopher Vaughan	Science Writer Intern
Jane M. Livermore	Books
Donald R. Harless	Advertising/Business Manager

Copyright © 1988 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., \$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. 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

Letters

Nonvitamin D

"Study sheds light on TB resistance" (SN: 1/23/88, p.60) contains some intriguing information and a semantic error which did not originate with you but which remains, apparently ossified, in the medical literature. There is no dietary requirement for vitamin D, since it's a hormone synthesized in the body from cholesterol and activated by sunlight. Therefore it's not a vitamin. Ditto for vitamin A (retinol) synthesized in the body from beta carotene, a photosynthetic plant pigment in food, which arguably is a vitamin.

Such nitpicking is not without clinical significance, since of the hypervitaminoses, A and D occur most commonly, and most commonly from the overuse of vitamin pills. This would not happen if these substances were not included in the pills in the first place. The nonvitamins A and D should be reclassified, perhaps as drugs.

William Harris
Honolulu, Hawaii

These are good points, although many scientists believe that vitamin D supplements may be recommended for pregnant women, for people

This Week

- 228 Consumers Thwarted in Fight on Fat?
- 228 Tissue transplant boosts memory in rats
- 229 New explanation for an old nova
- 229 Neighbors bugged by germ warfare lab
- 230 Doubts about Fermat solution
- 230 Searching for the better clot-buster
- 231 Animal patent report lacks support
- 231 Legacy of fire: The soil strikes back

Research Notes

- 232 Anthropology
- 232 Biology
- 233 Biomedicine
- 233 Physics

Articles

- 234 Decline of the CFC Empire

Cover: To save the life-protecting ozone layer, the industrialized nations of the world are planning to limit their use of chlorofluorocarbons and halons. These ozone-destroying compounds are important elements of refrigerators, air conditioners, foam insulation and firefighting equipment. Chemical companies are now mounting a multimillion-dollar search for safe replacements. (Photo courtesy Air Force Engineering and Services' Fire Technology Research Branch)



Departments

- 227 Letters
- 237 Books

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; J. David Hann; Milton Harris; Elena O. Nightingale; O.W. Riegel; H. Guyford Stever; John Troan; Deborah P. Wolfe.

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

who are rarely exposed to sunlight and for the few who don't synthesize the hormone properly (a problem that can result in ricketts).

— R. Weiss

Cave conclusions questioned

I doubt that the recently dated "burnt flints" from Qafzeh, Israel, provide "direct evidence that Neanderthals could breed with people from other parts of the world," as Prof. Wolpoff is credited with saying ("An earlier dawn for modern humans?" SN: 2/27/88, p.138).

The idea of coexisting races of *Homo* in the Near East is not a new one. Representatives of each are alleged to be present in the hominid remains from cave sites at Mount Carmel and northern Iraq. The earlier age implied for the more modern type raises the conundrum of how the more primitive form arose and became so widespread (i.e., in the Middle East and across Europe) during the earlier phases of the last glacial epoch, after circa 70,000 years ago. The allegation that the Neanderthals "appear to have been poorer foragers" is pejorative. They may have been biologically better adapted to midlatitude and periglacial environments than their

"more advanced" contemporaries who originated in the tropics and subtropics of Africa.

William P. McHugh
Wilksburg, Pa.

Tribal terror

"Murder in Good Company" (SN: 2/6/88, p.90) provided interesting factual information on the high murder rate among the otherwise docile Gebusi of New Guinea. However, the various hypotheses offered to explain this behavior all overlook one very basic human response. Human beings, in the face of uncontrollable and inexplicable death, are most vulnerable. Helplessness and fear are dealt with by identifying a cause (in this case sorcery) for the unexplained death. The identified cause provides something tangible that can be controlled or entirely eliminated (killing the sorcerer), thereby restoring a sense of power and control.

When I read the article, it brought to mind the outbreak of bubonic plague in the 14th century. As the population of Europe was being decimated by this disease of unknown origin, accusations of Jews poisoning the

Letters continued on p. 237

Letters continued from p. 227

drinking water began to surface, and hundreds of Jews were put to death.

Although certainly all murder in all societies is not perpetuated by feelings of helplessness and fear, I think, in the case of the Gebusi, it is a hypothesis that merits some consideration.

Melanie J. Stright
River Ridge, La.

Since the Gebusi tribe still exists, the high homicide rate is not decreasing the tribal population. Could the homicides be a "lemming effect" whose purpose is simply to control overpopulation? This might happen if there were a shortage of food or land, and Bruce Bower indicated that the available wilderness areas were shrinking.

Wayne Wyrick
Warr Acres, Okla.

"Murder in Good Company" was most striking, not only in the description of the Gebusi, but also in the total omission of input from psychoanalytic observation and theory.

It is almost axiomatic that when we deny awareness of internal aggression we set the stage for misperceiving the aggression as having an external source. At that point "retaliation" becomes the expression of the original rage so disguised as to render it "acceptable."

It appears likely that the Gebusi have institutionalized paranoid perception and projective mechanisms in attempting to minimize their sense of helplessness when con-

fronted with death.

In a nuclear world with our capability of causing immense destruction, we cannot afford to ignore our personal and collective "dark side." Peace in our communities and on the planet requires much more than controlling violence on television.

William B. Groppe
Psychiatrist
Long Beach, Calif.

Gebusi killing is not a strategy for group survival, says Bruce M. Knauft, who studied the tribe. Rather, it is an important cause of a continuing decline in the population and the average life span of its members. Knauft presents a preliminary psychoanalytic discussion of Gebusi violence and conflict avoidance in the *JOURNAL OF PSYCHOANALYTIC ANTHROPOLOGY*, Vol. 10, No. 2.

—B. Bower

Dehydrated aliens?

I am fascinated by "Death-Defying Dehydration" (SN: 2/13/88, p.107). That these organisms can sustain life in a dormant state with no water, and also be protected by their very dehydration from extremes of temperature, strong vacuums and high doses of ionizing radiation, suggests to my imagination a scenario of dormancy of otherwise "lifeless" planets for unknown periods of time, and eventual inadvertent transfer through space to colonize new worlds. Has anyone checked all those moon rocks for a pulse?

Friedrick Haines
Englewood, Colo.

Books

Books is an editorial service for readers' information. To order any book listed or any U.S. book in print please remit retail price, plus \$1.00 handling charge for each book, to **Science News Books**, 1719 N Street, NW, Washington, DC 20036. All books sent postpaid. Domestic orders only.

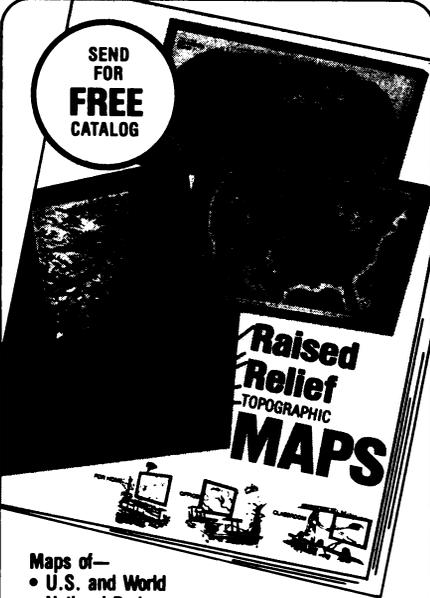
A Brief History of Time: From the Big Bang to Black Holes — Stephen W. Hawking. One of the world's leading theoretical physicists describes for the general reader the basic ideas about the origin and fate of the universe. The only mathematical equation included in the book is Einstein's, $E = mc^2$. Hawking traces the history of cosmology from the early Greeks to modern times. He then provides a clear explanation of the currently accepted physical theories of the universe and discusses the outlook for a unified theory. This brilliant scientist, who has amyotrophic lateral sclerosis, retains the use of only three fingers and can communicate only through a specially designed computer. Bantam, 1988, 198 p., illus., \$18.95.

A Field Guide to Southeastern and Caribbean Seashores — Eugene H. Kaplan. This Peterson Field Guide describes the ecology and common organisms of seashores from North Carolina through Florida, the Gulf Coast and the Caribbean. The book is divided into two parts. Part one provides an overview of the different environments encountered along the shores or beneath the inshore seas, focusing on habitats and the interrelationships between the plants and animals that inhabit them. Part two describes the common animals found in each habitat with an emphasis on field markings to help readers identify each organism. HM, 1988, 425 p., color/b&w illus., paper, \$14.95.

Flowering Trees & Shrubs — Brian Davis. This Gardeners' Pocket Picture Guide contains 450 entries arranged alphabetically and providing details on care and cultivation with illustrations showing both the overall shape of the tree or shrub and its appearance when in flower. Rodale Pr, 1988, 96 p., color illus., paper, \$7.95.

Free Radical: Albert Szent-Gyorgyi and the Battle over Vitamin C — Ralph W. Moss, foreword by Studs Terkel. An intimate biography of this renaissance man who won the 1937 Nobel Prize for Physiology and Medicine in his native Hungary at the age of 44. He emigrated to the United States at 54 and continued to do research at Woods Hole until his death in 1986 at the age of 93. A charismatic teacher-researcher and anti-war activist, he used his great talents to, among other things, discover vitamin C, unravel the mechanisms of cellular respiration and pioneer a radically different way to investigate cancer. Paragon Hse, 1988, 316 p., illus., \$22.95.

Marks in Place: Contemporary Responses to Rock Art — Linda Connor et al. Five artists here have photographed rock art and in accompanying essays have discussed their reactions to it. Most of these petroglyphs are found in the southwestern United States, with a few examples of Peruvian work. The rock art represents several thousand years of graphic expression by American Indians. An essay by a research associate at the Museum of New Mexico suggests ways in which rock art can be interpreted and how some of it functioned. U of NM Pr, 1988, 133 p., color/b&w illus., \$45, paper, \$24.95.



SEND FOR FREE CATALOG

Raised Relief TOPOGRAPHIC MAPS

Maps of—

- U.S. and World
- National Parks
- 250 Regions of U.S.

- Great Trip Planner
- Ideal Gift
- Exquisite Wall Decoration
- Excellent Reference
- Vacation Keepsake

Full Color — Raised Relief
Framed/PhotoFramed/Unframed

HUBBARD P.O. Box 104, Northbrook, IL 60062

Please send **FREE** Map Catalog (SN)

Name _____

Address _____

City _____ State _____ Zip _____

Meditations at 10,000 Feet: A Scientist in the Mountains — James Trefil. The mountains are used as a springboard to introduce natural phenomena found there and to present to the general reader in fascinating essays the scientific theories involved. Originally published in hardback in 1986. Macmillan, 1987, 236 p., illus., paper, \$8.95.

The New Harvard Guide to Psychiatry — Armand M. Nicholi Jr., Ed. This book maintains a scientific approach with an emphasis on current research, but also concentrates on the patient as a person. Part one focuses on the examination and assessment of patients with psychiatric disorders and on the diagnosis and classification of those disorders. Part two reflects the concentrated effort of psychiatrists to establish the neurological and biological basis of the major psychiatric disorders. Part three introduces new research on the psychological aspects of mental illness. Part four addresses the treatment and management of patients with psychiatric illness. Part five focuses on special groups of patients and on environmental and psychosocial factors that play a role in the pathogenesis of the major psychiatric illnesses. Part six explores the relationship between psychiatry and culture. Harvard U Pr, 1988, 865 p., \$39.95.

Next: The Coming Era in Science — Holcomb B. Noble, Ed. A leading physicist and well-known science writers explore the theoretical and practical applications of the 20th century's major scientific accomplishments, which foreshadow what is to come in the 21st century. Little, 1988, 190 p., \$17.95, paper, \$9.95.