

# SCIENCE NEWS®

The Weekly Newsmagazine of Science

A Science Service Publication  
Volume 129, No. 18, May 3, 1986

E.G. Sherburne Jr.	Publisher
Joel Greenberg	Editor
Dietrick E. Thomsen	Senior Editor/ Physical Sciences
Laurie Jackson	Managing Editor
Wendy McCarren	Production/Design Director
Bruce Bower	Behavioral Sciences
Joanne Silberman	Biomedicine
Stefi Weisburd	Earth Sciences
Julie Ann Miller	Life Sciences
Janet Raloff	Policy/Technology
Ivars Peterson	
Jonathan Eberhart	Space Sciences
Susan Welch Gilday	Assistant to the Editor
Lisa Davis	Science Writer Intern
Jane M. Livermore	Books
Donald R. Harless	Advertising/Business Manager

Copyright © 1986 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., \$29.50; 2 yrs., \$50.00.  
(Foreign postage \$5.00 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

### Epstein-Barr: A causative cofactor

Your phrase "the cancer-causing Epstein-Barr virus" ("Antibody cocktail to fight bacteria," SN: 3/29/86, p. 198) is scientifically inaccurate and socially irresponsible. The vast majority of all humans have been infected by this virus, which is not a sufficient condition for producing illness, much less cancer.

At least 10 percent of the U.S. population currently suffers from a systemic and/or neuropsychiatric illness involving the virus. As laboratory tests for such illnesses have become routine, the illnesses are increasingly being diagnosed, and are even viewed as a "fad illness" by physicians having only a cursory knowledge of the subject. Patients have organized a large and growing National Chronic Epstein-Barr Virus Syndrome Association, and articles on the subject are ubiquitous in the popular press.

The Epstein-Barr virus is a cofactor in, or is reactivated by, a remarkable number of human illnesses ranging from multiple sclerosis to major depression. The role of the virus is im-

### This Week

- 276 Chernobyl May Be Worst Nuclear Accident
- 276 Bird fossil defended against hoax charge
- 277 Sneaking in a therapeutic enzyme
- 277 Toying with a touch of chaos
- 278 Quake potential off the San Andreas
- 279 The fructose connection: Copper and heart disease

### Research Notes

- 280 Biology
- 280 Biomedicine
- 281 Chemistry
- 281 Environment

### Articles

#### 282 Rolling Rocks and Loaded Dice

Cover: The connection between windblown sand dunes and tumbling dice isn't entirely obvious, but a Caltech researcher is studying the motion of loaded and unloaded dice to gain some insight not only into the practice of cheating but also into the complex problem of granular flow. (Photo: Peter K. Haff)

#### 284 Giving Hearts Extra Muscle

### Departments

#### 275 Letters

**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; 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.

portant enough in infectious mononucleosis and major depression to prompt researchers to say it "causes" those illnesses.

It is not fair to say, even loosely, that the Epstein-Barr virus causes cancer, and given the large number of people who know they have been infected by the virus, that claim is irresponsible. The factual statement is that the virus is a causative cofactor of some cancers (Kaposi's sarcoma, Burkitt's lymphoma, nasopharyngeal carcinoma) in patients who are profoundly immunocompromised, e.g., by AIDS.

Allen D. Allen  
Director of Scientific Affairs  
Center for Viral Diseases, Inc.  
Northridge, Calif.

### Rationalizing the irrational

The postulates of Radoff's theory of irrationality (Letters, SN: 3/15/86, p. 163) are:  
(1) Human events and affairs are irrational.  
(2) Human responses to these are irrational.  
(3) Human evolution has provided man with the emotional capacity to meet irrationality with proper irrational responses.

Some support for postulate 1 comes from looking at the date above, the notation as used by SN — month, day, year, obviously irrational. The reader acceptance of this irrational date notation supports postulates 2 and 3.

But is it reasonable for irrational man to present a rational theory for the irrational? Fortunately all theories have boundaries.

Ralph W. Lewis  
Professor Emeritus  
College of Natural Science  
Michigan State University  
East Lansing, Mich.

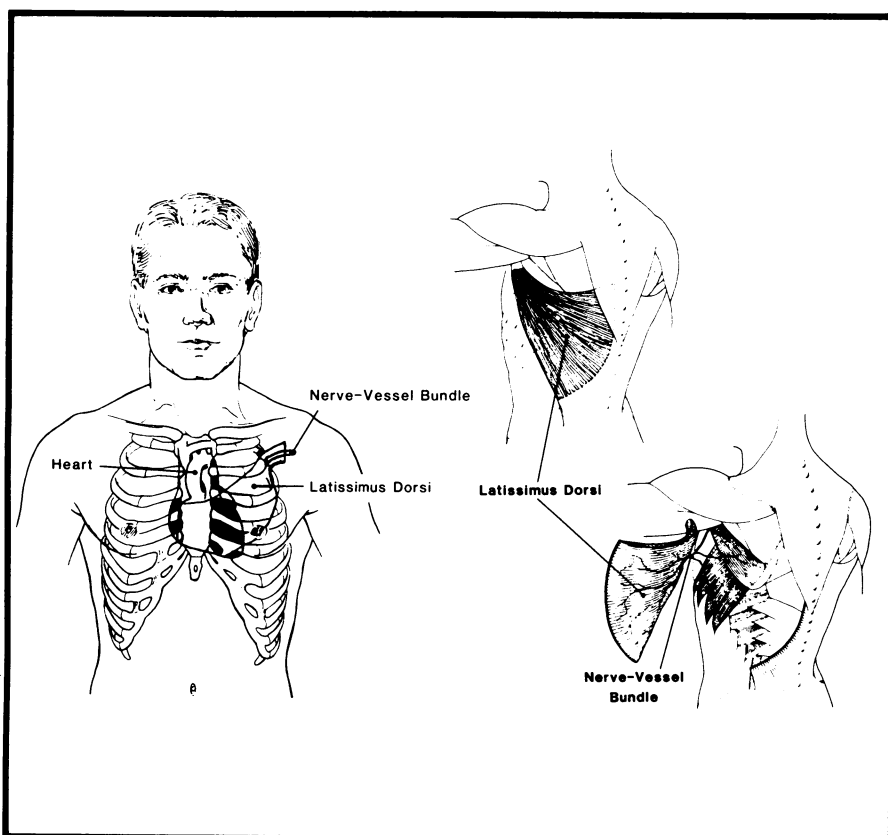
### Social (science) security

In their letters commenting on the Skinner debate (SN: 3/15/86, p. 163), two of your readers asked, "Who cares?" One in particular wanted someone to tell him why anyone should care what the numbers (relative contributions of genes and environment) are. I suggest they should care because they are paying for it.

Letters continued on p. 285

MAY 3, 1986

275



In the heart-wrap procedure performed at Allegheny General Hospital, the left latissimus dorsi was isolated with its nerve-vessel bundle intact, brought through the ribs and wrapped around the heart.

#### Letters continued from p. 275

The nature/nurture controversy is more than a curiosity keeping social scientists happy. Hundreds of billions of dollars are at stake. For starters, it keeps social scientists employed in large numbers, and influential. Psychologists' theories are implemented by the Department of Health and Human Services and numberless state and community social service, welfare and education organizations. After all, if genes primarily determine our nature, what's left for the "human betterment" industry to do? Only by claiming the supremacy of environment in determining behavior can psychologists, psychiatrists, behaviorists, etc. justify today's vast expenditures by the education-welfare establishment.

Whether Skinner and crew should be permitted to continue calling themselves scientists is another topic. Maybe sufficient proof has been accumulated by microbiologists, neurophysiologists and other "hard" scientists in fields of behavior and personality to allow a challenge to social science orthodoxy and to reclaim the honorable title of scientist.

Brigitte Whitaker  
Falls Church, Va.

#### A peach's family tree

Luther Burbank was a renowned plant breeder, but he did not develop the Elberta peach as stated in "The importance of being inventive" (SN: 2/22/86, p. 123). Elberta originated from a seed of Chinese Cling planted by Samuel Rumph of nearby Marshallville, Ga., in 1870. It was named for his wife. A second seed from this tree produced the famous Georgia Belle peach. Burbank did patent July Elberta

peach, a completely different peach of unknown parentage. July Elberta was quite successful but did not have the historical impact of Elberta.

W.R. Okie  
J.M. Thompson  
USDA Fruit Breeders  
Byron, Ga.

#### Vaccine vs. blood screen?

Obviously if an AIDS vaccine becomes a reality ("AIDS vaccine research: Promising protein," SN: 3/8/86, p. 151), those harboring the disease will carry the same antibodies as a vaccinated person. How then will we protect our blood bank by antibody detection?

Frank Burnham  
Orangeburg, S.C.

According to Howard Streicher of the National Cancer Institute in Bethesda, Md., it's an interesting question but the problem is not likely to keep researchers up at night. While antibodies produced in response to a vaccine might indeed give a false positive result on current screening tests, it's quite possible that when — and if — a vaccine is developed, the problem could be avoided by fine-tuning the tests. For example, if a vaccine is based on protein from the AIDS virus's surface, the screening test could check for the presence of antibodies to proteins from the viral core.

—L. Davis

Address communications to  
Editor, Science News,  
1719 N Street, N.W.  
Washington, D.C. 20036  
Please limit letters to 250 words.

longer. Recently they compared electrical conditioning with allowing the muscle a rest period of several weeks in its new locale before firing it up. They found that a combination of the two resulted in the most fatigue resistance.

They also started out studying patches sewn into the heart; now, in dogs, they are working with pouches made of latissimus dorsi "wrapped like an ice cream cone," attached to a pacemaker and hooked into the circulation. The pouches sit behind the dogs' right legs, where they don't hinder the animals' activity, and can pump as much as two-fifths of what the heart can, Stephenson says.

In humans, he says, such a pump could lessen the burden on ailing hearts by delivering 2 liters of blood a minute — one-third the normal output of the heart. The operation would be easier and less expensive than implanting an artificial heart and could be ready for human use in two to five years, he estimates. "We know it will eventually work," he says.

Richard A. Clark, chief of surgery at the National Heart, Lung, and Blood Institute in Bethesda, Md., commenting on heart muscle transplants in general, says, "It will probably take a considerable period to learn the limitations of the procedure as well as its attributes." However, he adds, "Muscular augmentation by some other muscle as a general concept is valid. I think it has potential." □

## AUTOMATE <sup>NEW</sup> MEASUREMENT ON YOUR IBM PC



Photo Courtesy/Edward Jones, M.D.

New digitizing tablet with  
Sigma-Scan™ measurement  
software. \$1195

Cat #3011 — 12" x 12" system

Resolution of .025 mm, accuracy of at least .25 mm. Comes with state-of-the-art software for area, linear, perimeter, length of curvy line, and angular measurements. X, Y point or stream digitizing. Descriptive statistics. Transfer data to other programs in standard ASCII or DIF format.

This and other new Microcomputer Tools for the Scientist. Call or write today for FREE catalog.

### JANDEL SCIENTIFIC

2656 Bridgeway, Sausalito, CA 94965

800-874-1888

(In Calif. call 415-331-3022)