

Further steps should now be taken to assure that the violations which appear to have occurred in the name of promoting nuclear power do not pass with mere quiet acknowledgement and professional disdain. The abusive use of science to bias public policy decisions will be minimized in the future only if it is emphasized publicly, is punished legally when appropriate, and defenses are constructed to prevent its repetition.

It would seem prudent—in view of (i) the immensely catastrophic consequences of a nuclear accident of even moderate proportions, heretofore downplayed, but which the data of the report and its predecessors alike suggest; and (ii) the fact that no reliable estimate exists of the improbability (or probability) that a nuclear accident will occur—for there to be a formal, public reassessment of the nation's commitment to the widespread use of nuclear power.

BRUCE L. WELCH

61 Newton Road,
Woodbridge, Connecticut 06525

References

1. B. L. Welch, in U.S. House of Representatives-U.S. Senate, Joint Committee on Atomic Energy, *Nuclear Reactor Safety* (93rd Congr., 2nd sess., 1974), part 2, vol. 2, pp. 751-752; in U.S. House of Representatives-U.S. Senate, Joint Committee on Atomic Energy, *Possible Modification or Extension of the Price-Anderson Insurance and Indemnity Act* (93rd Congr., 2nd sess., 1974), phase I, review, pp. 267-312; *The Risks of Nuclear Power Reactors: A Review of the NRC Reactor Safety Study WASH-1400* (NUREG-75/014, Union of Concerned Scientists, Cambridge, Mass., August 1977); *Risk Assessment Review Group Report to the U.S. Nuclear Regulatory Commission* (NUREG/CR-0400, Nuclear Regulatory Commission, Washington, D.C., September 1978).

Sudden Infant Death

Jean L. Marx (Research News, 1 Sept. 1978, p. 799) summarizes the case for botulism as the cause of sudden infant death (SID). On the other hand, D. J. C. Read (1) has pointed out the similarities between thiamine deficiency-induced neuropathology and SID symptoms, especially the characteristic apnea. I wish to call attention to a possible connection between the two lines of investigation.

It is instructive to note, first, that the thiamine intake of infants may be marginal. Quoting W. J. Sebrell, Jr. (2):

Holt *et al.* [*J. Nutr.* **37**, 53 (1949)] found the thiamine requirement of seven infants to vary between 0.14 mg and 0.20 mg/day on the basis of a urinary excretion test. With an average thiamine content of cow's milk of 0.35 to 0.4 mg/liter, an infant weighing 7 kg is calculated to receive at least 0.3 mg of thiamine a day, but this makes no allowance for destruction by heat in pasteurization or sterilization. The margin of safety is, therefore, regarded as

small by Holt and co-workers in the case of either sterilized milk or breast milk, since the latter contains roughly only half as much thiamine as cow's milk.

In view of these figures, the fact that many strains of *Clostridium botulinum* produce thiaminase-I (3) may be significant. The anaerobe could precipitate or exacerbate a deficiency by decomposition in the gut of the low concentration of thiamine ingested.

Marx mentions the neurological effects of botulinum toxin. While of slower onset than those of the toxin, the effects of thiamine deficiency on the peripheral and central nervous systems can be devastating. Thiamine triphosphate appears to have an important role in excitable membrane function (4). Moreover, evidence now has been adduced for in vivo interaction of acetylcholine and thiamine (5).

EDWARD F. ROGERS

Research Laboratories, Merck Sharp & Dohme, Post Office Box 2000,
Rahway, New Jersey 07065

References

1. D. J. C. Read, *Aust. N.Z. J. Med.* **8**, 322 (1978).
2. W. J. Sebrell, Jr., *The Vitamins* (Academic Press, New York, ed. 2, 1972), pp. 163-164.
3. R. Hayashi *et al.*, *Vitamins* **42**, 105 (1973).
4. P. M. Dreyfus, *J. Nutr. Sci. Vitaminol.* **22** (Suppl.), 13 (1976).
5. L. Waldenlind, *Biochem. Pharmacol.* **26**, 1321 (1977).

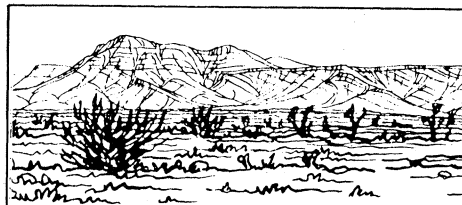
Predictive Coding Techniques

Arthur L. Robinson, in his recent article on speech recognition (Research News, 16 Feb., p. 634), ascribes the linear predictive coding technique to Bishnu Atal and other workers in the speech processing field. Without detracting from these significant accomplishments, I wish to point out that an almost identical approach has been used with great success for the past 15 years in petroleum exploration for the processing of seismograms recorded in water-covered areas. In our industry, this method goes under the name "predictive deconvolution." Both approaches are direct outgrowths of the fundamental ideas of Norbert Wiener who developed most of the relevant theory at the Massachusetts Institute of Technology during the 1930's and early 1940's.

SVEN TREITEL

Amoco Production Company,
Post Office Box 591,
Tulsa, Oklahoma 74102

Erratum: In "Uranium mill tailings: Congress addresses a long-neglected problem" by Luther J. Carter (News and Comment, 13 Oct. 1978, p. 191), the chemical designation for yellowcake was given as ^{238}U , instead of the correct formula, U_3O_8 .



Revised Edition

The Evolution of North America

PHILIP B. KING

"[This is] one of those rare books on geology that is likely to turn up on the geologist's bedside table or beside his favorite easy chair; it is entertaining as well as informative and readily qualifies as pleasurable professional reading. . . . It provides a refreshing and thought-provoking review. . . . Unique and lively." — *American Scientist*

Illus. Cloth, \$25.00. Paperback, \$9.50

Why Big Fierce Animals Are Rare

An Ecologist's Perspective
PAUL COLINVAUX

"[In] this short, splendid book . . . Colinvaux celebrates the wisdom and order in the natural world in a series of elegantly written essays about how diverse elements in the natural world are related, and about man's increasingly dangerous interference with this fine balance. . . . To write so well, so gracefully, and so understandably of difficult scientific subjects is a rare achievement. An instructive, yes, and stirring book." — Doris Grumbach, *The New York Times Book Review* \$9.50

*Named one of the Fifty Best
Scientific-Technical Books of 1978 by
Library Journal*

A Guide to the Birds of Venezuela

RODOLPHE MEYER DE
SCHAUNSEE and WILLIAM H.
PHELPS, Jr.

Illustrations and facing-page notes by
GUY TUDOR, with JOHN A.
GWYNNE, Jr., H. WAYNE TRIMM,
and MICHEL KLEINBAUM

More than forty percent of the bird species known to inhabit South America have been found in Venezuela. Here in one volume is the essential information on this rich and varied avifauna — nearly 1,300 species, almost all of which are illustrated. 52 plates, 40 in color, 41 text figures. 6 x 9". Cloth, \$50.00. Paperback, \$19.95

**Princeton
University Press**

Princeton, New Jersey 08540