

SCIENCE NEWS

A Science Service Publication
Volume 122, No. 6, August 7, 1982

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Editorial and Business Offices
1719 N Street, N.W., Washington, D.C. 20036

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Subscription Department
231 West Center Street, Marion, Ohio 43302

Subscription rate: 1 yr., \$27.50; 2 yrs., \$47.50; 3
yrs., \$67.00. (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. 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

Responses to a response

[In response to "Radioactive Waste: Perceptions of Risk" (SN: 3/20/82, p.199)] C. G. Hudson writes (SN: 7/10/82, p.19): "It is my belief that some technology decisions must be made by the most informed people, not all people. Nuclear energy and other advanced technologies, by their very nature, require decisions contrary to the basic principles of the country."

I do not often use the word "shocked," but in this case I find it most appropriate. The dangers of nuclear power are of concern to us all, not just the technological elite. I spent 14 months interviewing nuclear experts here and abroad, and found the most damaging statements against nuclear power came from off-the-record remarks from them, not from nuclear critics. It is the public's responsibility to challenge the frequent blindness of technicians who create self-admitted threats to the environment and people.

When the Fermi breeder reactor in Monroe,

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Cover: The animated movie *The Secret of NIMH* was based indirectly on the work of National Institute of Mental Health psychologist John B. Calhoun, who says he has created a colony of rats with human values. The symbolic good vs. evil traits are depicted in this scene from the film. See p. 92. (Illustration courtesy of MGM/UA Entertainment Co., copyright Mrs. Brisby, Ltd. All rights reserved)



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Mich., went into a partial meltdown, one Detroit nuclear engineer commented: "We almost lost Detroit." A leading spokesman for Detroit Edison commented: "We were faced with hair-raising decisions and terrifying thoughts." For thirty days, no one knew if the core were going to go into a disastrous secondary meltdown or not. All this in the face of a University of Michigan study commissioned by Detroit Edison that figured a potential death toll of 133,000 in Detroit alone from a meltdown.

Experts at Brookhaven are on record as stating that a meltdown at an average size nuclear plant would contaminate an area the size of Pennsylvania, kill 27,000 people outright, injure 73,000 and cause \$17 billion worth of property damage. Strenuous attempts were made to keep these figures from being released to the public, or even congressional committees. Minutes of a Brookhaven safety study are riddled with such comments as: "Dr. Beck noted the problems of radiation embrittlement in steel and the number of defects already found in just one reactor, with a great number of reactors just like it. Thus, it is not at all assured that the conditions

assumed in this report cannot happen."

It doesn't take a technical mind to absorb what the inside scuttlebutt is all about in the nuclear power industry. The "basic principles of our country" will hopefully protect us from ideas such as those advanced by C. G. Hudson who thinks so lightly of the democratic process.

John G. Fuller
Weston, Conn.

The letter entitled "Ask the experts" suggested that some technological decisions necessarily must be made by "experts," and that advanced technologies may "by their nature, require decisions contrary to the basic principles of this country."

The suggested approach is far from value-free: Scientists and engineers (and significantly for many decisions, their managers and administrators) are far from value-free. Indeed, the selection of experts itself is well known to be fraught with implications. To use the given example of smoking, are the experts to be found from the ranks of the tobacco companies? The

Continued on p. 89

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medical community? For the example of the nuclear industry, would you consult Edward Teller? Or perhaps Hyman Rickover, playing his new, revised tune?

Education was attacked as apparently impotent in aiding people to make intelligent decisions. Certainly we all have our lazy ways in learning all we might to help us to become better, more responsible citizens, but the all-too-pervasive attitude of "let the experts" (politicians, military, any "them") may be partly responsible for this. I would suggest that credibility is an important limiting factor in educating people concerning various issues. We scientists and engineers can best improve the quality of decisions by making certain that the information dispersed to the public is the most accurate and complete reflection of the truth possible. Such is a function of such a magazine as SCIENCE NEWS, among others. And especially—credibility won't be helped by attempting to wrest control from people who perceive themselves as potential victims.

Perhaps the writer felt he was such an expert, and deserved such power over the lives of others, having a clear and undistorted vision of reality. Can the rest of us be so eager to give up our limited self-autonomy?

Frank P. Miles
Ann Arbor, Mich.

The continuity between primates

The metatheoretical message of W. Herbert's article "The evolution of child abuse" (SN: 7/10/82, p. 24) may be one of the most important conveyed in SCIENCE NEWS yet. As primates, humans should share a great deal of their physiology, psychological capability and social behaviors with other primates; the degree of

homology can be meaningfully investigated with careful applications of sociobiological principles. The economic and scientific efficiency of delineating general principles of social behavior by these means and then supplementing them to account for species-specific adaptations is obvious. Indeed, the law of parsimony demands that the fewest and simplest principles (for example, common vs. unique causation of parental behavior in humans and apes) be exploited until demonstrably insufficient. The stubborn refusal of many scientists to appreciate the remarkable continuity between primates (relative to, for example, that between primates and non-primates) often has roots in anthropocentricity and vanity. Worse, it invokes much unjustifiable, high-flown cognitive theorizing about phenomena for which there may be simpler, more adequate explanations.

Please, let us as scientists be secure enough to accept both the contributions of our evolutionary legacy to behavior and the capabilities that make us uniquely human.

Nancy K. Dess-Beech
Minneapolis, Minn.

The search for 'Bracewell probes'

The astronomical search for extraterrestrial intelligence (SETI) reported from the 24th meeting of the International Council of Scientific Unions' Committee on Space Research in Ottawa, Canada (SN: 6/5/82, p. 374) evidently considered only the traditional approach involving electromagnetic signals. This emphasis ignores a major research alternative — the search for "Bracewell probes" in the solar system (1, 2). These probes appear competitive with photons as a means for interstellar communication (3, 4).

Recent and past proposals have suggested a number of viable locations for self-repairing, life-seeking messenger probes — in particular the stable orbital regions near the Earth-Moon Lagrangian points and specific geocentric and selenocentric orbital spaces. These locations may be regarded as analogous to the "water hole" frequencies in traditional radio SETI (5). Observational proposals to detect such artifacts have been prepared, and preliminary telescopic searches specifically designed to observe them have been conducted at Kitt Peak National Observatory and at Leuschner Observatory in California (6). The search for extraterrestrial artifacts has already begun.

SETI is still a very young observational science. It is far too early to foreclose any reasonable search strategy which may possibly lead to success.

Robert A. Freitas Jr.
Sacramento, Calif.

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THE AMERICAN MEDICAL ASSOCIATION BOOK OF BACK CARE — Marion Steinmann. "An aching back is one of the most common afflictions of humankind." This book describes the basic anatomy of the back. Explains what happens within the back when we bend and twist and how the anatomy of the back changes throughout life. Discusses the many diseases that can affect the back and the treatments available. Gives many practical measures all of us can take to minimize the strain on the back and to help prevent backaches. Explores the question of whether our unique posture is the cause of our propensity to back trouble. Random, 1982, 188 p., illus., \$12.95.

THE AMERICAN WEATHER BOOK — David M. Ludlum. A readable book that looks at weather in the U.S. month by month. Weaves in the weather extremes and storms — thunderstorms, hailstorms, tornadoes, hurricanes and snowstorms. Explains how each type of storm is spawned, describes the ones causing the most damage and loss of life. A glossary explains weather terms, and weather records are given throughout the text and in the appendix. HM, 1982, 296 p., illus., \$14.95, paper, \$8.95.

DECISION-MAKING: The Modern Doctor's Dilemma — Lucien Israël, translated from the French by Mary Feeney. With the recent great advances in medicine has come a new problem — one of choice. Dr. Israël applies the principles of decision theory to various medical cases. Points up why medicine must remain an art. Random, 1982, 141 p., \$11.50.

MARTIN'S HUNDRED — Ivor Noël Hume. When excavating during the restoration of Carter's Grove, an elegant 18th century Virginia plantation, the archaeologists stumbled on the site of the settlement called Martin's Hundred, which had been established on the banks of the James River in 1619. This is the fascinating story of the Martin's Hundred dig — one of the most significant in American historical archaeology — as told by the director of the excavation. Tells how the archaeologists scraped through layers of dirt with trowel and whisk brush, dug test holes, salvaged, dated and interpreted fragile artifacts. The story continues after the actual dig, telling of the many different scientists who were brought in to help interpret the data and how the trail led as far afield as the wreck of a Dutch East India-man off the Australian coast. Knopf, 1982, 343 p., illus., \$17.95.

MEMORY OBSERVED: Remembering in Natural Contexts — Selections and Commentary by Ulric Neisser. These 44 articles examine the specific manifestations of memory in ordinary human experience. Studies include vivid recollections upon hearing of John Kennedy's assassination, oral historians of Africa, John Dean's memory, memory for a salient childhood event and Toscanini's memory. WH Freeman, 1982, 433 p., charts & graphs, \$24.95, paper, \$12.50.

SYNOPSIS AND CLASSIFICATION OF LIVING ORGANISMS, 2 vols. — Sybil P. Parker, Editor in Chief. The classification and description of living organisms from viruses through vertebrates. The systematic positions and affinities of all living organisms are presented in more than 8,300 synoptic articles for all taxa down to the family level. Well illustrated with photographs and line drawings. An extensive index of 35,000 entries gives both the scientific and common names of the taxa. McGraw, 1982, 2,398 p., illus., \$149.50.

TREATING AND OVERCOMING ANOREXIA NERVOSA — Steven Levenkron. The psychotherapist author views anorexia nervosa as a pathological distortion of society's preoccupation with being "fashion-model thin." The disease begins as a diet and grows into an obsession. Through six case histories, Levenkron shows his nurturant-authoritative therapy in action. Each case emphasizes a different aspect of the disease and different treatment strategies. Scribner, 1982, 205 p., \$12.95.

WHERE THE SKY BEGAN: Land of the Tallgrass Prairie — John Madson. Originally this world was dominated by the big bluestem grass. It is now threatened by the encroachment of civilization and weeds. The author, a nature writer, evokes the feeling of this prairie world, of flowers blooming head-high, of the large and small creatures living in and on the grass, of tornadoes and thunderstorms, cold winters and very hot summers. Tells how the prairie grew before the coming of the white man, how it was shaped by pioneer and farmer and how, in turn, the land changed the character of its people. HM, 1982, 321 p., illus. by Dycie Madson, \$13.95.