

LETTERS

Soviet Nuclear Capabilities

In R. Jeffrey Smith's article "An upheaval in U.S. strategic thought" (News and Comment, 2 Apr., p. 30), I am quoted on page 33 as saying, "We exaggerate the growth of Soviet nuclear capabilities. . . ." The statement was obviously taken from testimony that I gave last November before the Senate Foreign Relations Committee, and the "We" was meant to refer to government spokesmen and the foreign policy-defense establishment. What I actually said was that "We exaggerate the *significance* of the growth of Soviet capabilities."

There is, in fact, little dispute among the informed about actual Soviet capabilities, although occasionally Administration spokesmen have exaggerated them—the President, most recently—but whether improvements in Soviet capabilities are *significant* is a matter of great contention. The gravamen of my remarks was that they need not be; that such developments as have occurred are not militarily or politically exploitable.

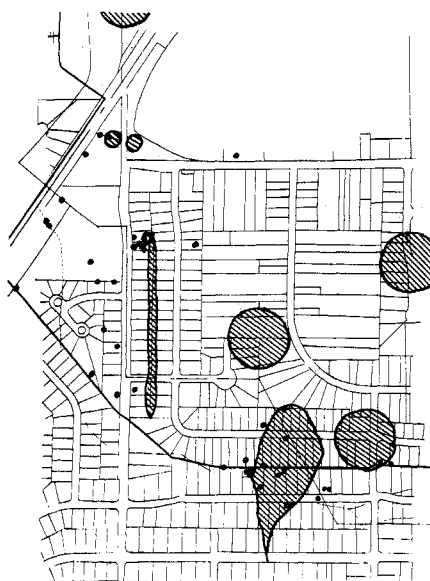
GEORGE RATHJENS

Department of Political Science,
Massachusetts Institute of Technology,
Cambridge 02139

"Ghost Dumps"

The toxic chemicals program of the Environmental Defense Fund has for the past 2 years been investigating residents' reports of health effects related to hazardous waste dumping in Memphis, Tennessee, at the Frayser and Hollywood sites. We would like to respond to Thomas H. Maugh II's article "The dump that wasn't there" (Research News, 5 Feb., p. 645), which implies that the Frayser site represents the problem of "ghost dumps," when a situation is provoked by residents' emotionalism and irresponsible political activism.

Investigations to date do not resolve the question of whether there was chemical waste dumping in the Frayser neighborhood. The accompanying figure shows areas (shaded) of dumping, according to former health department employees (1), and the sites (points) of the environmental sampling conducted by the Environmental Protection Agency. This monitoring in no way surveyed "the entire neighborhood," and, in fact, did not examine many areas of alleged



dumping. Aerial reconnaissance, visual site inspection, and some metal detection surveys (with instruments of relatively low sensitivity) comprised the rest of the site evaluation procedure. In some cases, follow-up was not complete. Such methods are not likely to be sufficient to rule out dumping unless an "obvious source" of chemicals is apparent (that is, seepage, visible canisters or drums, or waste lagoons). Unfortunately, many occult dumps probably exist in this country, and comprehensive methods for their detection will be required before their existence can be summarily denied.

Attempts to assess health effects at Frayser reveal much about issues important to more general concerns about health implications of toxic waste dumps. The study by the Centers for Disease Control (CDC) (2) noted that several signs and symptoms of illness occurred more frequently in the Frayser population than in a control group. The design of this survey can be criticized for defining adverse health effects in terms of visits to physicians in a population where doctor-going is not frequent for economic and cultural reasons. Moreover, as pointed out by Maugh, the results of the CDC and other studies, at Frayser and at other sites, point to issues common to the problem of assessing toxic waste dumps. Even when data suggesting cause are persuasive, effects are likely to be nonspecific and difficult to characterize as "illnesses" because of the low level and chronic nature of the exposure and the presence of many toxins.

Long-term retrospective or prospective studies of toxic waste dump sites must be undertaken, involving large

numbers of subjects. The difficulties in discovering toxic waste dumps and assessing their effects on health should not obscure the potential seriousness of waste dumps and the extent of the problem in the United States (3). Nor should the victims be blamed for their fear and confusion, which can be exacerbated by dilatory and incomplete responses and by the premature judgment of the scientific world that their problems do not exist.

ELLEN K. SILBERGELD

Environmental Defense Fund,
1525 18th Street, NW,
Washington, D.C. 20036

JOSEPH HIGHLAND

Department of Chemical Engineering,
Princeton University,
Princeton, New Jersey 08544

References

1. Sworn statement of Q. J. Anglin, 5 March 1980, at hearings before Memphis-Shelby County Health Department.
2. "The CDC-Memphis and Shelby County Health Department family health survey, May 1980: A report for presentation at the December 9, 1980 meeting of the metropolitan area environmental task force, Memphis, Tennessee" (Chronic Diseases Division, Bureau of Epidemiology, Centers for Disease Control, Atlanta, Ga., 1980).
3. *Preliminary Assessment of Cleanup Costs for National Hazardous Waste Problems* (Fred C. Hart Associates, Washington, D.C., prepared for the Environmental Protection Agency, Washington, D.C., 1979); *Damages and Threats Caused by Hazardous Material Sites* (Report No. 430/9-80/004 Environmental Protection Agency, Washington, D.C., 1980); J. Highland, Ed., *Hazardous Wastes: Finding Solutions* (Ann Arbor Press, Ann Arbor, Mich., in press).

AAAS Radiation Session

Bernard L. Cohen (Letters, 26 Feb., p. 1028) criticizes the AAAS for sponsoring a session at its annual meeting on the health effects of nuclear weapons and power. The AAAS, according to Cohen, "mislead[s] the American public by appearing to give the support of the scientific community" for the symposium participants. These speakers, Cohen states, "have published few papers on that subject in refereed scientific journals in the past several years." To bolster his claims, Cohen cites more than 20 critiques of a 1977 paper by Mancuso, Stewart, and Kneale which suggests that human sensitivity to fatal cancer induction by low-level ionizing radiation may be 10 to 25 times greater than previously thought.

By the spring of this year, Mancuso, Stewart, and Kneale will have published five additional papers (1). They were written to answer major criticisms mentioned in the papers Cohen cites, 12 of which are not in refereed scientific jour-

R&D

in the

FY 1983

Budget: Impact and Challenge

**7th Annual
AAAS Colloquium on
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23-24 June 1982

**The Shoreham Hotel
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Issues include:

R&D policy and the FY 1983 budget □ *the climate for industrial R&D* □ *R&D programs of key federal agencies* □ *impacts on the scientific and engineering communities*

Participants include leaders from:

OMB, OSTP, and federal agencies □ *Congress* □ *industry* □ *the scientific and engineering communities*

In addition:

Research and Development, AAAS Report VII, by Willis H. Shapley, Albert H. Teich, and Jill P. Weinberg, will be provided in advance to Colloquium registrants. The Report covers R&D in the federal budget for FY 1983 and other topics on R&D and public policy. Registrants will also receive the published **Proceedings of the conference**.

For further details, write:

R&D Colloquium
AAAS Office of Public Sector
Programs

1776 Massachusetts Ave., NW
Washington, D.C. 20036

aa American Association for the
as Advancement of Science

nals. In fact 11 are not in any scientific journals.

The 1982 AAAS annual meeting program shows that the all-day session included a speaker from the Department of Radiology of the Harvard Medical School and the former director of research of the Radiation Effects Research Foundation in Hiroshima, the principal source of data used to contradict the Mancuso study.

What appears to be at issue is the fact that the AAAS provided a forum for "dissident" scientists. Since the early fallout debate, the AAAS, despite pressure from proponents of nuclear weapons and nuclear power, has allowed for discussion on radiation effects to include views which are at variance with official risk estimates. In following this practice, the AAAS has performed a service to both sides of the debate.

ROBERT ALVAREZ
*Environmental Policy Institute,
317 Pennsylvania Avenue, SE,
Washington, D.C. 20003*

References

1. G. W. Kneale, A. M. Stewart, T. F. Mancuso, "Reanalysis of data relating to the Hanford study of cancer risks of radiation workers (1944-77 deaths)" (IAEA/SM-510, International Atomic Energy Agency, Vienna, 1978); A. M. Stewart, G. W. Kneale, T. F. Mancuso, *Ambio* 9 (No. 2), 66 (1980); G. W. Kneale, T. F. Mancuso, A. M. Stewart, "Hanford radiation study III: A cohort study of the cancer risks from radiation to workers at Hanford (1944-77 deaths) by method of regression analysis in life tables," *Br. J. Ind. Med.*, in press; T. F. Mancuso, A. M. Stewart, G. W. Kneale, "Delayed effects of small doses of radiation delivered at slow dose rates," in *Quantification of Occupational Cancer*, R. Peto and M. Schneiderman, Eds. (Banbury Report 9, Cold Spring Harbor Laboratory, Cold Spring Harbor, N.Y., 1981), pp. 129-150; A. M. Stewart, "Delayed effects of A-bomb radiation: A review of recent mortality rates and risk estimates for five-year survivors," *Br. J. Epidemiol. Community Health*, in press.

Columbia Journalism Review: Editorial Policy

In *Reflections on Science and the Media*, published by the American Association for the Advancement of Science (1981), the author, June Goodfield, makes the following statement:

The *Columbia Journalism Review* has been a highly regarded critical forum of the written word, although it has recently undergone a change of editorial policy which may reduce its critical role, to the detriment of the profession.

At the time Goodfield was writing (1980) there had indeed been a change of editors at the *Review*, but this did not signal any reduction of the *Review's* role as an independent critic of American journalism. There has been no such re-

duction, and Goodfield, conceding that her fears for the *Review* have proved to be unwarranted, has agreed to "bring things up to date" when and if there is another printing of her book. In the meantime, this letter may help to correct an erroneous impression that the *Review* has hung up its gloves.

SPENCER KLAU
*Columbia Journalism Review,
700 Journalism Building,
Columbia University,
New York 10027*

Omitted Reference

In our recent article (5 Feb., p. 619), a reference to previous pioneering work of C. B. Bratton, A. L. Hopkins, and J. W. Weinberg was inadvertently omitted from reference 56. The first quantitative measurements of nuclear magnetic resonance relaxation times for protons in excised, but functioning, living muscle appeared in a Ph.D. dissertation by C. B. Bratton of Western Reserve University in 1964; the earliest publication appeared in *Science* [147, 738 (1965)] and was by the investigators named above.

GORDON L. BROWNELL
*Department of Nuclear Engineering,
Massachusetts Institute of Technology,
Cambridge 02139, and
Physics Research Laboratory,
Massachusetts General Hospital,
Boston 02114*

THOMAS F. BUDINGER
*Donner Laboratory and
Department of Electrical Engineering
and Computer Sciences, University
of California, Berkeley 94720*

PAUL C. LAUTERBUR
*Departments of Chemistry and
Radiology, State University of
New York, Stony Brook 11794*

PATRICK L. MCGEER
*Department of Neurosciences,
University of British Columbia,
Vancouver, Canada V6T 1W5*

Corrections

In the Research News article "Molecular biology of brain hormones" (5 Mar., p. 1223) by Gina Kolata, it was stated that the enkephalin precursor codes for ACTH. Rather, ACTH is derived from pro-opiomelanocortin, a different precursor. In addition, Joel Habener's name was misspelled.

In the Research News article "New theory of hormones proposed" (12 Mar., p. 1383) by Gina Kolata, glycyrrhetic acid and tetrahydrocannabinol were incorrectly identified as alkaloids. This misidentification in no way changes the conclusions about these plant substances.