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LETTERS

Research and Public Funds

DeWitt Stetten’s editorial (19 Sept., p. 953) and the several letters of comment (24 Oct., p. 324) have neglected a crucial point concerning “Freedom of inquiry.” The real issue is not freedom to do research, since few areas of research are prohibited by law, but freedom to use taxpayer funds to conduct research that the taxpayer may not need or want, or may even oppose. Surely there is a major ethical issue here that supersedes any question of knowledge.

No one has seriously suggested that research on genetic contributions to intelligence be outlawed. However, many of us object vigorously to the use of our tax dollars for this purpose. In our view, satisfying the intellectual needs or desires of a few scientists is not an adequate reason for spending public funds.

The comparison between freedom of speech and freedom of research is misleading. I would not suggest that a law be passed prohibiting people from criticizing ethnic groups, but I would object vigorously to giving people federal grants to go around making such criticisms.

Stetten appears to object to political involvement in scientific decisions. I suggest that such political involvement is a necessary safeguard for all of us.

Solomon Garb
American Medical Center at Denver, Spivak, Colorado 80214

Are the Data Worth Owning?

Three years ago, in an editorial in Science (30 June 1972, p. 1377), J. Ross MacDonald answered this question with an embarrassing and costly “No” for a major fraction of the published scientific and technical data. Since then, slow but steady progress has been made in increasing the reliability of data which is so essential for the orderly conduct of R&D programs.

On a national level, the National Bureau of Standards’ Office of Standard Reference Data, together with the American Chemical Society and the American Institute of Physics have launched the Journal of Physical and Chemical Reference Data. On an international level, CODATA, the Committee on Data for Science and Technology of the International Council of Scientific Unions, has stepped up its efforts to promote international cooperation in data evaluation and dissemination, with continued emphasis on high standards of data quality. CODATA also has broadened its scope to include the life sciences and geo-

sciences in addition to the physical sciences. In recognition of the growing role of CODATA, the National Academy of Sciences has invited CODATA to hold an open international scientific conference in the United States at Boulder, Colorado, in the summer of 1976. Persons working in the physical, life, and earth sciences as well as data handling specialists are urged to attend and discuss their approaches to problems of scientific data evaluation and dissemination. A successful conference of this kind will do much to raise an awareness of the need for greater support of high-quality data compilation, commensurate with the total R & D efforts.

W. Dale Compton
Numerical Data Advisory Board, National Academy of Sciences, Washington, D.C. 20418

Investment in Research

Arthur Kornberg, in his editorial of 22 August (p. 599), based on his 19 April address at the National Institutes of Health alumni reunion, states, “There is no industry based on technology today that spends less than 5 percent of its product [income] on research and development.”

The petroleum refining industry, long considered to be a high-technology industry, spends considerably less than 5 percent. Its R & D costs have usually amounted to 1 percent or less of its product sales income.

William T. Knox
3563 Hamlet Place, Chevy Chase, Maryland 20015

Black Ph.D.’s

The method employed by Joseph L. McCarthy and Dael Wolfe in their article “Doctorates granted to women and minority group members” (12 Sept., p. 856) does not give an accurate assessment of the number of doctorates awarded to Blacks for two main reasons: (i) a decreasing percentage of Blacks are obtaining doctorates from Association of American Universities (AAU) member institutions, and (ii) there is a distinct pattern of undergraduate origins of Black Ph.D.’s.

The percentage of science doctorates awarded to Blacks by AAU universities has steadily decreased since the 1930’s. I maintain files on the number of science doctorates earned by American-born Blacks and, while my data do not include other degree fields, I am unaware of any significant differences between the institutions awarding science Ph.D.’s to Blacks.

Science, Vol. 190
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one-stage lesions and equivalent postoperative experience should be included for comparison. It might also be worth while to test intact rats given the same "interoperative" experiences as those animals with lesions, since restriction alone could produce temporary deficits in the performance of normal controls.

MICHAEL E. LEWIS
DONALD G. STEIN

Department of Psychology,
Clark University,
Worcester, Massachusetts 01610

References
3. K. S. Lashley, ibid. 70, 45 (1939).
4 April 1975

While the concern of Lewis and Stein is understandable, I wish to point out the following facts. Posterior extension of cortical lesions was limited by the vascularity of each particular animal. A little-reported but very consistent finding of surgery in this area is hemorrhage of up to 25 percent of total vascular volume secondary to disruption of meningeal vessels and major venous tributaries. Posterior extension of lesions therefore varied among animals, and the variation extended across all groups. In the Lashley (1) article cited by Lewis and Stein, anterior lesion of the striate cortex resulted in the loss of all but 713 of the 34,000 neurons in the corresponding lateral geniculate nucleus. Comparable lesions in our animals resulted in elimination of all but 1200 to 2500 neurons. In our animals with more posterior lesions, as few as 250 neurons were spared. We thus remain content with our findings.

The conclusion of Lashley (1) as restated by Lewis and Stein, that rats with only 2 percent of the geniculo-striate system intact could solve visual problems similar to the one employed in our laboratory, was based on the results of one animal. More recent studies have demonstrated that pattern discrimination is dependent upon an intact visual cortex (2). Modern discrimination-testing equipment now controls for differences in luminance flux, and eliminates extraneous auditory and visual cues.

During initial design and fabrication of restraining devices, no type of restraining holder was ever found to affect later performance of normal animals on the aversive discrimination task.

DENISE DRU

Huntington Institute of Applied Medical Research, Pasadena, California 91105

References

8 October 1975

31P NMR in Cancer Amended

In our recent report (1) we stated that, to the best of our knowledge, 31P NMR had not been applied before to organ tissues. Since then we have become aware of a prior publication by Hout et al. (2) on 31P nuclear resonance in muscle. Priority for the first application of 31P NMR in tissue therefore rightly belongs to these workers, our work being the first introduction of 31P NMR into cancer research and cancer detection.

KEN SCOTT ZANER
RAYMOND DAMADIAN

Department of Medicine and Program in Biophysics, State University of New York, Brooklyn 11203

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28 NOVEMBER 1975

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References for the Analytical Chemist describes publications in handbook format for spectroscopy, organic compound identification, chromatography, and many other fields. CRC Press. Circle 810.

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ENVIRONMENTAL PROBLEMS IN MEDICINE edited by William D. McKee, Palo Alto Medical Clinic, Palo Alto, California. (36 Contributors) Tailored to promote an understanding of increasing environmental hazards and their role in the development of disease, this book is directed to both students and professionals in medicine. Health effects of changing living patterns and chemicals are considered along with many other topics. It will also be of interest to policymakers, educators and conservationists. '75, 880 pp. (6 3/4 x 9 3/4), 90 il., 152 tables, $36.50

HEALTH PROTECTION OF RADIATION WORKERS by W. Daggett Norwood, Hanford Environmental Health Foundation, Richland, Washington. Present knowledge regarding the hazards to the safety and well-being of persons working with radiation is summarized in this book. Discussed are established standards for health, safety and environmental protection along with their implementation, diagnosis and therapy for illness or injury. '75, 468 pp., 16 il., 16 tables, $27.50

HEMISPHERIC DISCONNECTION AND CEREBRAL FUNCTION edited by Marcel Kinsbourne, The Hospital For Sick Children, Toronto, Ontario, Canada, and W. Lynn Smith, Cortical Function Laboratories, Denver, Colorado. (12 Contributors) This volume deals with perhaps the most rapidly growing, most discussed and most promising area in psychobiology – the functional relationships of the cerebral hemispheres. '75, 316 pp. (7 x 10), 89 il., 6 tables, $21.50

ANAEROBIC BACTERIA: Role In Disease (2nd Ptg.) edited by Albert Balows, U. S. Department of Health, Education, and Welfare, Atlanta, Georgia; Raymond M. Dehaan, Upjohn Company, Kalamazoo, Michigan; V. R. Dowell, Jr., Center for Disease Control, Atlanta, Georgia; and Lucien B. Guze, Department of Medicine, UCLA, Los Angeles, California. (66 Contributors) This volume is an up-to-date information source on the bacteriology, clinical aspects, diagnosis and therapy of anaerobic bacterial infections. '75, 656 pp., 61 il., 121 tables, $27.50

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such aroma chemicals, however.

Test marketing of consumer products containing the counteractants—which Monsanto now calls amals—has already begun, although the company will not reveal the identities of manufacturers using them or of products incorporating them. They are not, however, present in certain highly advertised deodorizers that make rather extravagant claims. The products are being promoted cautiously because of the many previous times that manufacturers have made similar claims without being able to deliver. In the words of a Monsanto official, the industry “has cried ‘Wolf!’ once too often.” The counteractants have been or will soon be used in home air fresheners and such products as deploratories, shampoos, and cosmetics, all of which often contain essential malodorous ingredients.

Other potential uses might be in deodorant soaps, home “permanents,” underarm deodorants, douches, and pet litter boxes. Additionally, other work at Monsanto suggests that the counteractants could be incorporated into many industrial products in an encapsulated, slow-release form. Many kinds of box board, plastic tiles, paper, and other products, for example, produce odors that are not harmful, but that are offensive to potential purchasers of the products. Incorporation of the counteractants could overcome this problem.

Academic scientists have been reserved and skeptical about Schleppnik’s claims, in large part because he has not been able to supply them with samples of the counteractants until Monsanto is protected by patents. But those who have smelled for themselves believe the phenomenon is real, regardless of whether Schleppnik’s explanation of it is or is not correct. Some of the scientists, furthermore, suggest that the counteractants could be valuable for studying olfaction.

At present, the perception of odors can be blocked only with rather crude reagents that irreversibly alter receptors or the nerves connecting them to the brain. Because the effects of the counteractants are reversible, they should make it possible to conduct much more sophisticated experiments with the receptors. The counteractants might also be useful in the study of insect chemoreceptor systems and of proton transfer enzyme systems. But their value for such applications cannot be fully assessed until they are made available to more investigators.

—THOMAS H. MAUGH II

BOOKS RECEIVED

(Continued from page 878)


Cell Cycle and Cell Differentiation. J. Reinert and H. Holtzer, Eds. Springer-Verlag, New York, 1975. xii, 334 pp., illus. $29.70.


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Enzyme Induction. Dennis V. Parke, Ed. Plenum, New York, 1975. xii, 328 pp., illus. $27.50. Basic Life Sciences, vol. 6.


The Olympus CK: The basic tool.

Photomicrograph of an L292 Fibroblast taken with the Hoffman Modulation Contrast System; Achromat 10X Objective. Photomicrograph Courtesy: Dr. M. Padnos

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If you want to know more about the CK, just ask us. We'll be glad to tell you. Afterall, it's basic to us.

and seven others. Translated from the German edition (Berlin, 1971) by Derek and Inge Jordan. Springer-Verlag, New York, 1975. xii, 272 pp. $12.60.


Introduction to Experimental Nuclear Physics. R. M. Singru. Halsted (Wiley), New York, 1975. xii, 162 pp., illus. $6.95.

Land Use in Advancing Agriculture. A. P. A. Vink. Springer-Verlag, New York, 1975. x, 396 pp., illus. $25.80. Advanced Series in Agricultural Sciences I.


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Liquid FITC Conjugated Globulins

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Liquid FITC Conjugated IgG

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<td>$38.15</td>
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