

Letters

Research without Boondoggles

The editorial of Victor Weisskopf (13 Feb., p. 935) commenting on the threatened position of basic science is representative of much of the feeling in the scientific community. Basic research must defend itself against the current lower level of funding and increasing public concern. Commonly the short-sighted legislators or socially concerned youth who "don't understand the situation" are singled out as the bleak future of American science is echoed. Seldom, however, do the staunch defenders of more support for pure science examine the state of what it is that they are defending. It is usually assumed that the basic research is of good quality and that the scientists are reasonably competent. This is, of course, what we need more of. Unfortunately, however, the thought is seldom entertained publicly that some of the "research" that is being supported might be routine and unimaginative, if not incompetent. How much of the research dollar has been, and is being, spent on the solution of "problems" that are not really problems, or on those that have been published before by earlier workers? How many funded proposals result in "data looking for a problem" or in expensive and often redundant equipment purchased solely because the money was available at the end of the grant tenure or the fiscal year? How much has been wasted on feasibility studies, pilot programs, and other boondoggles hiding behind the respectability of fundamental basic science? Almost every scientist knows what goes on but few are willing to admit it, publicly.

Can a reduced level of material support to basic science, if intelligently and critically channeled toward weeding out such "research," produce more good science, attract and keep more good young scientists and lower the level of public concern and legislative skepticism? On the other hand would increased funding serve to further the level of mediocrity begun in the affluent

past and produce further public disinterest? What appears needed is more good basic research, not just more basic research. A more critical evaluation of priorities together with better evaluated research proposals cannot help but improve the signal-to-noise ratio. Academic freedom and the pursuit of the intrinsically interesting need not necessarily be compromised.

KENNETH M. TOWE
1475 North Van Dorn Street,
Alexandria, Virginia 22304

Campus Turmoil and Problems

Leon Eisenberg made some cogent observations in "Student unrest: Sources and consequences" (27 Mar., p. 1688). I am qualified to comment only in the sense of being a member and observer of this generation and one whose social adolescence continues to be prolonged by postgraduate and postdoctoral studies.

1) Having been denied access to dignified social roles, both ghetto blacks and white students have created counter cultures with value structures which give them a sense of significance. They are united in opposition to the existing order. These two countercultures borrow extensively from each other in terms of life style and ideology, and many of the most militant have feet in both camps.

2) Countercultures have inherent liabilities. The (ghetto) black and the youth cultures can exist only in opposition to the status quo. Neither could run our technical world without major changes in their value systems, which currently denigrate technology and reason. Another danger is that they will drift so far from the mainstream of society as to make return impossible. Counter-countercultures can emerge, such as the British skinheads, directly opposed to the counterculture. Finally, adherents to countercultures are particularly susceptible to peer group pressure. Having turned their backs on

society at large they must win acceptance by their chosen companions.

3) The mass media play a critical role in counterculture formation. First, they make large numbers of the disillusioned aware of their mutual existence—scattered individuals don't make a movement. Second, the media direct the counterculture's development by selective reporting. For instance, the media helped kill the urban hippie movement by overexposure.

Yet the situation is in no way hopeless. The young, and to a lesser extent the black, are crying out for a chance to rejoin society. Students call again and again for relevance. The outpouring of energies on behalf of Eugene McCarthy indicates the willingness of the young to work within the system if given meaningful roles. There is a growing feeling among university students that society has no real use for their expensive talents and encourages education merely to keep the young out of circulation. . . . Any number of national needs could appeal to the young and the black: rebuilding of the central cities by residents, reclamation of the environment at home and abroad, reparations in Southeast Asia, and so forth. The scientific community can play a part by helping to create socially valuable and ego-fulfilling roles for the young. But the political system must act soon; society should heed the calls for black pride and student power.

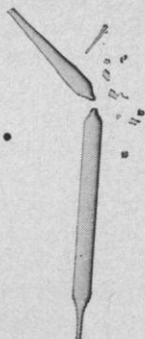
LEE PHILIP SCHACTER
Department of Biology,
Brandeis University,
Waltham, Massachusetts 02154

Luther J. Carter's article regarding the University of Michigan's response to black student demands (10 Apr., p. 229) includes a report of a full-page advertisement which appeared on 22 March, in the midst of the class boycott, in which 500 faculty members endorsed four principles condemning the violence and disruption on the Michigan campus. As Carter correctly points out, this advertisement was initiated and prepared prior to and independently of the Black Action Movement's actions; however, the unfortunate timing of its publication did much to exacerbate an already volatile situation.

Lest the public be left with the erroneous impression that the U. of M. faculty was unanimous in endorsing this four-point program for law and order, it should be noted that a reply to the original statement was published on 2 April (after negotiations had been

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concluded) over the signatures of 135 members of the Michigan faculty senate. The purpose of this reply was to express our profound concern over our colleagues' short-sighted response to violence.

Few, if any, on the faculty either advocate or condone the use of violence. Indeed, we are all equally agonized by its increasing frequency of occurrence, not only at Michigan, but on campuses across the nation. However, a more adequate response than the mere condemnation of violence is required. Violence cannot be viewed in isolation. We must examine the context in which it occurs if we are to understand the forces that drive some individuals and groups to perform such acts. The omission of these concerns from our colleagues' statement was sufficiently serious to cause us to publish our statement. . . .

SYLVAN KORNBUM

*Mental Health Research Institute,
University of Michigan,
Ann Arbor 48104*

Carter lauded the establishment of a 10 percent admission quota for Negroes at the University of Michigan. No doubt many other ethnic and racial groups are underrepresented at that and many other universities. For instance, students of Polish, Italian, and Irish extraction constitute a smaller proportion of the student body than that in the United States or the state of Michigan. On the other hand, Jews, who constitute 2.5 percent of total population, probably constitute over 25 percent of the student body and faculties of many universities. Why not establish ethnic and racial quotas similar to the immigration quotas based on the composition of the U.S. population, as we had not so long ago? Also, why limit quotas to undergraduate admissions? Why not graduate and professional schools, and why not quotas for degrees, including the doctorate? And why not for faculties? Quotas for university admission based on race or social origin have been common in many fascist states and are now in force in communist countries. It is ironic that today's liberals have embraced this concept.

At present the doors of most of our universities are wide open for any Negro with a minimum of ability and motivation. Special programs for the underprivileged student are extensive and should be further developed. On the other hand, racial quotas serve only to recruit the unsuited and unmotivated. These students will obviously fail any

normal curriculum, and special programs and degrees for this category will be required. The regents and president of the University of Michigan, having capitulated to the Black Student Union and their allies, will have to grant more and more concessions. The introduction of racial quotas is ominous and a dangerous precedent for all American universities. Vice President Agnew had some cogent comments on this issue, and it would have been fair and proper for *Science* to print his statement in that issue. . . .

JOSEPH KATZ

*Cedars of Lebanon Hospital Division,
Box 54265, Los Angeles,
California 90054*

With varying degrees of success, many writers have attempted to define what it is that "turns off" a large segment of the university student population. However, none has succeeded so well, albeit unwittingly, as Lieberman in "The university is not a highway department" (Letters, 17 Apr.). If Lieberman's point of view is shared by even 25 percent of university faculty members, then one can easily understand the disenchantment of our young people. It is pointless to comment on the specifics of his letter. Suffice to say that in the age in which we are now living, *all* of our intellectual resources must be brought to bear on social problems. Intellectuals, as typified by university faculties, can, and must, be socially responsible—and responsive—"men of action."

If Lieberman's opinions are correct, then socially responsible-responsive teachers and students *should* depart from the university and leave it to the pedagogues and their disciples. Then the university would, indeed, become analogous to a highway department, dealing as it would with pedestrian issues. Lieberman has performed a service by clearly illustrating the very essence of what makes the university non-relevant to the student.

BERNARD J. FINE

*Woodside Road,
Harvard, Massachusetts 01451*

Removing Sulfur from Coal

Abelson's editorial "Progress in abating air pollution" (20 Mar., p. 1569) includes a well-authenticated statement: "It is possible to remove some of the sulfur from coal by mechanical