

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. . . .

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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. . . .

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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."

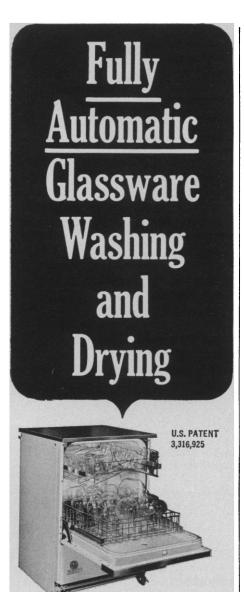
If Lieberman's opinions are correct, then socially responsible-responsive teachers and students *should* depart from the university and leave it to the pedagogues and their disciples. Then the university would, indeed, become analogous to a highway department, dealing as it would with pedestrian issues.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

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### **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



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means, but most cannot be eliminated except by costly chemical processing." While generally correct, this statement is subject to some qualification.

There is no magic wand or "thiomagustic" device that can draw sulfur out of a lump of coal without changing its physical structure. But it is quite possible and practical to destructively desulfurize coal without seriously penalizing total fuel value of the resulting char, condensable liquids, and combustible gas. These low sulfur product fuels can be efficiently burned together in modern powdered fuel steam generator fireboxes with minor modification, or the char alone can be efficiently burned in fluidized bed stream generators.

In most cases, the cost of such chemical processing will be less than 20 percent of the cost of good high sulfur steam coal delivered to consumers' plants. With experience, it should be possible to reduce this cost somewhat. This figure assumes a minimum plant requirement of 2000 tons of coal per day which is not large by modern electric utility standards.

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### Reproduction in a Finite World

Szabo asks "Do we hate our own species so much that it is regarded as a crime if people want to have at least three children?" (Letters, 3 Apr.). . . Those who favor the limitation of population do so because of concern for humanity, not hatred. Granted only that our world is finite, and that mass migration away from it is impossible, then the conclusion that the birthrate must inevitably equal the death rate follows with mathematical certainty. At that point in time each person, on the average, can at most reproduce himself; any excess offspring must die before maturity. Surely then it would be a crime, particularly against the children, for the size of the average family to be as high as three chil-

One point should be obvious: The numbers refer to averages. If some couples want large families they may still be able to do so provided others want smaller families or no families. We should be able to keep such options open provided we recognize the overall constraints.

This simple philosophical argument does not tell us when the limitation of family size becomes of such vital importance. The answer to that depends on which aspect of the world's finiteness is or should be most important: is it food, space, or something else? Basically it involves human values. If we could all address ourselves to the question of human values and desires we might begin to make some headway toward a better life for all.

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Szabo fails to recognize that it is because we love our species that some of us advocate voluntary tubal ligation and vasectomy. In a period when we are plagued with overpopulation and environmental pollution, the assumption that it is permissible, if not desirable, to have more than two children seems to be archaic. At one time this attitude was probably appropriate to the species because it was desirable to increase the population. Now, however, it is inappropriate, and man's attitudes must be altered in order for him to adapt to these conditions: overpopulation and environmental conditions.

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#### **Predicting Ovulation—Precisely**

In spite of all the discussion of the medical, mechanical, and social drawbacks of contraceptives which are currently available, I wonder if we are not missing the point. What we really need is not the "ideal" contraceptive, but the "ideal" predictor—of ovulation. Is anyone working on the development of effective means of telling precisely when ovulation is about to occur in a woman? If they had 2 or 3 days accurate warning, women would have a much better chance of avoiding problem pregnancies, with none of the added physiological or psychological strains which attend current contraceptive methods. With a really effective Distant Early Warning system, even the rhythm method ought to work!

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