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of scientific purity, is not only spurious reasoning, but reveals a view of social science that is by no means uniformly shared.

Etzioni trots out familiar arguments about an educational system that for the first time, in part at least, has started applying the canons of social research to people who inhabit this country. The arguments that he adduces are no more, no less than those used in recent years by those who have opposed, on the basis of a Platonic theory of educational verities, the special programs that have enabled blacks to enter college. The penetration of racial minorities has not ruined the higher educational system in America. It might be argued that thus far it has not helped much and that special interest politicking is scientifically irrelevant. But I doubt that there is evidence that would show any actual measure of deterioration as a result of minority entrance into the higher educational sphere. If the alternative to benign neglect is an occasional serious injustice, this must be weighed against injustices committed on the side of neglect. Even if in this particular case there has been a possible injustice committed to Etzioni's graduate student, we can at least empathize with the reasons for this slight. In the past, the same kind of injustices have been committed for quite other reasons—not nearly as noble in purpose. If this was simply an isolated case, Etzioni had an obligation to engage in quiet diplomacy, or, in other words, not to transform an individual case into a universal condemnation. A personal grievance is not a social problem, and a unique example is not a law of nature.

IRVING LOUIS HOROWITZ
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Irony seems to be a dangerous way of making a point; both Preer and Horowitz seem not to address the issue I sought to raise (which naturally makes me grateful to Singh).

First, the Chicanos' qualifications were compared to those of others, but the reason he was hired was the need to balance the color chart. That is the whole point of hiring by genes.

Second, the issue I raised was not protection of academic purity, which was never free of pecuniary and status considerations; surely it deserves to be dilated somewhat for greater social justice. What I fear is its destruction, as master color charts, or quota systems, replace other hiring criteria. This tends to happen when "exceptions" made for one group (initially, chiefly blacks), are extended to many others. It is a sad truth that the academic system can live with concessions to one minority group but cannot survive the bending of standards for blacks and Chicanos and Indians and women and others.

As to how widespread the tendency to hire by race is, the reader can judge himself—is it an isolated incidence or a spreading practice?

AMITAI ETZIONI
Center for Policy Research,
New York 10027

Margin of Safety

The manner in which Swenerton and Hurley (2 July, p. 62) carried out their recent investigation into the teratogenic effects of ethylenediaminetetraacetic acid (EDTA) appears to be a well-executed, if uninspired, classical toxicological investigation. I do, however, question its applicability to reality. I would appreciate being advised of the circumstances under which a human being could ever be exposed, during pregnancy, to a chronic dietary intake of 2 to 3 percent (by weight) of EDTA, or its equivalent in strong chelators. Even if one includes nonchelating antagonists, the possibility appears to be exceedingly remote.

I am aware that a large margin of safety (a factor of around 100) is commonly employed in the certification of chemicals designed for human use. It seems to me that there is a large uninvestigated gap in this report between intake of 2 percent and intake of 0.02 percent. Indeed, to one used to dealing in microgram quantities of material, the range between 0 and 2 percent is simply enormous. If, as I suspect, this study represents the testing of "safety" factors far in excess of those commonly in use, then it serves little purpose save to alarm the uniformed. I believe that toxicologists have some responsibility to design their experiments to approximate reality. Should they fail to do so they must inevitably undermine their credibility not only with other scientists but, far more importantly, with the public at large.

R. D. HAMILTON
Freshwater Institute,
Fisheries Research Board of Canada,
Winnipeg 19, Manitoba
As Hamilton has pointed out so obviously, the chances are remote that a pregnant woman could receive an intake of EDTA equivalent to 2 to 3 percent of her diet. However, Hamilton has apparently missed the point of our report. We did not undertake the study in order to test the toxicological effects of EDTA. Indeed, as we mentioned, it was already known that EDTA would produce congenital malformations in pregnant rats. Rather, the purpose of our experiments was to elucidate the mechanism by which this disturbance of embryonic development occurred. Because of our previous work with zinc deficiency, we suspected that EDTA might act to produce a deficiency of this element in the embryo. It seems to us that this information is of scientific interest, even if not of direct practical application.

Certainly more experiments need to be carried out with respect to the effects of lower levels of EDTA, but Hamilton surely does not mean to imply that research should not be published unless it is directly translatable into practical terms.

Lucille S. Hurley  
Hehene Swenerton  
Department of Nutrition,  
Agricultural Experiment Station,  
University of California, Davis 95616

Committee on Chemotaxonomy

An ad hoc committee on chemotaxonomy sponsored jointly by the International Union of Pure and Applied Chemistry (IUPAC) and the International Association for Plant Taxonomy (IAPT) has been formed to look into the organization of international collaboration in chemosystematics. The committee consists of W. F. Grant (IAPT), chairman; T. Swain (IUPAC), secretary; J. B. Harborne (IUPAC); A. Löve (IAPT); T. J. Mabry (IUPAC); and B. L. Turner (IAPT).

The committee solicits comments from interested persons in biological sciences, biochemistry, chemistry, and the pharmaceutical sciences. These comments may be sent to the undersigned.

W. F. Grant  
Genetics Laboratory, Macdonald  
Campus of McGill University,  
Quebec, Canada

T. Swain  
Royal Botanic Gardens, Kew,  
Richmond, Surrey, England

8 OCTOBER 1971

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the protein component of the pigment is coded for by the host plant genome. The location of the genetic information for the nitrogenase components is not known.

The presence of effective nitrogen-fixing root nodules in nonlegumes, including some 12 genera of woody dicots scattered among a number of families, involves symbioses between unidentified actinomycete-like microorganisms and the roots of the host plants. Analogies to the legume symbiosis are striking: specialized root structures are involved, nitrate inhibits nodule development, and ineffective nodules have been described. In Alnus, which is the most studied nonlegume nodular symbiosis, the infective microorganism is still unknown, cannot be grown in pure culture, yet can be transferred by inoculation with crushed nodules. Infection is apparently via root hairs and involves proliferation of root cortical tissues and the formation of a thick periderm.

Although nodule-like growths have been reported on roots of monocots, including some grasses and sedges, and an occasional report has appeared on nitrogen fixation by grasses, no carefully documented occurrence of symbiotic nitrogen fixation by root nodules in cereals or monocots is known. Rather, evidence is increasing that grasses and cereals establish a close relationship with free-living microorganisms in the soil around the roots and on the mucilaginous covering of the roots themselves, where they are effective in fixing atmospheric nitrogen in respectable amounts. These organisms include, under different circumstances, anaerobic bacteria such as Clostridium, aerobes such as Azotobacter, many different species of blue-green algae, and facultative anaerobes such as Klebsiella. That these intimate interdependencies are important in the overall nitrogen economy of the monocots seems well established and might well be exploited by means which foster the relationship. The importance of maintaining beneficial associations between rhizosphere and plant during plant introduction was emphasized.

Discussions of the possible evolutionary origin of the Rhizobium-legume symbiotic association raised questions concerning the existence of other still unidentified symbioses or of the potentialities of genetic manipulation of both the host and the bacterial symbiont to increase the occurrence of the nitrogen-fixing capacity. Little optimism was expressed for success on this