will now gallop off in all directions and plow up the continent of Africa with huge American tractors, scattering artificial fertilizers and pesticides as they go along. But what happens in those areas where it simply does not rain? And will African rulers allow all this intervention? People with substantial experience in high-technology agriculture are to be found in large numbers in Africa and they should be consulted. There is also a great deal of knowledge about possible increased food production in Africa. I have no doubt that American agriculture is efficient in the short run. But how good is it on a sustained-yield basis? What about the decline of irrigation farming based on the Ogallala aquifer in the United States and the increasing soil erosion all over the world, especially in Africa? How much will American-style agriculture cost in Africa, and who will pay for it? Already many Canadian and American farmers are going bankrupt because of low food prices. African rulers, with some noteworthy exceptions, have appeared to be more interested in cash crops than in food production.

Many years ago Kwame Nkrumah tried collective farming in Ghana, complete with large tractors. The effort was a disaster. There have also been attempts at collective farming in Ethiopia and Mozambique. These countries are now asking for food aid. The Soviet Union, the mother and father of collective farming, last year imported 50 million metric tons of grain. So we must conclude that there are different varieties of "high-technology" agriculture. Some work, while others are a flop.

The population of Africa was about 140 million in 1930 and is about 540 million now. Population growth is resolutely outstripping food supplies. Can we change total cultures in Africa? How will we (the West) be given this power?

W. HARDING LE RICHE
Department of Preventive Medicine and Biostatistics, University of Toronto, Toronto, Ontario M5S 1A8, Canada

Infrastructure

In his editorial of 1 March (p. 991), Erich Bloch reports guidelines for fiscal year 1986 budget development at the National Science Foundation. Specific reference is made to science and engineering infrastructure as one of the three major priorities. Renewed concern at the NSF for the people who will advance science and engineering is laudable and already visible. Recent review of the NSF's support for undergraduate institutions during fiscal year 1984 by a review group representing a broad spectrum of institutions and associations found that the first year of the NSF's effort to encourage and support research at these colleges and universities had proceeded quite well. Working with funding targets and through the dedicated efforts of its staff, the NSF awarded 141 grants in its Research in Undergraduate Institutions Program, 75 of which were to first-time awardees. Although the success ratio for funded proposals was less than the NSF average, review priorities were at least comparable. As a consequence of NSF encouragement a new, previously neglected, group of qualified research scientists has been brought into the mainstream. Their efforts, and the undergraduate students whom they inspire, offer renewed optimism for this nation's ability to retain research preeminence in science and engineering.

MICHAEL P. DOYLE
Department of Chemistry, Trinity University, San Antonio, Texas 78284

Nitropyrenes

A minor error mars the otherwise very informative account by Eliot Marshall of the Asilomar Conference convened by the Health Effects Institute (News and Comment, 15 Feb., p. 729). In that article, 2-nitropyrene is identified as a "highly potent" carcinogen that is present in diesel exhaust and was "recently" removed from xerographic toners. Actually, 2-nitropyrene is probably not an anthropogenic chemical and thus was not present in toners. Reference should have been made to 1,6- and 1,8-dinitropyrene, which are indeed carcinogens and were removed from xerographic toners 5 years ago (H. S. Rosenkranz *et al.*, Reports, 29 Aug. 1980, p. 1039). Subsequently these dinitropyrenes, as well as 1-nitropyrene and other nitrated polycyclic aromatic hydrocarbons, have been found to be ubiquitous products of incomplete combustion processes and have been detected not only in diesel exhaust but also, for example, in fly ash, the emissions of kerosene home heaters, and grilled chicken yakitori.

ROBERT MERMELSTEIN
Joseph C. Wilson Center for Technology, Xerox Corporation, Webster, New York 14580
HERBERT S. ROSENKRANZ
Department of Environmental Health Sciences, Case Western Reserve University, Cleveland, Ohio 44106