Human Diversity in Colombia

Patricia Kahn's News & Comment article "Genetic diversity project tries again" (4 Nov., p. 720) and a lecture on the topic by S. Pena at the Latin American Congress of Biological Anthropology (Rio de Janeiro, November 1994) have made me think that perhaps our experience in Colombia may help in developing programs like the Human Genome Diversity Project. For 7 years, we have been conducting a diversity project in Colombia. Although initially restricted to genetic studies, it soon became clear that the needs of the people being studied were broader because many of them are in the process of becoming extinct. Therefore we redesigned our project. The second phase began in 1991. This time we asked the faculty of the Universidad Javeriana in Bogotá and other Colombian institutions interested in cooperating to think of the enormous human diversity in Colombia and to suggest a research or care project they could develop. More than 100 proposals were received, and our fieldwork began in 1992 with nearly 60 projects in almost all areas of human endeavor. During the next 10 months, we visited 26 ethnic groups in Colombia. Medical, dental, and nutritional assistance was provided, and a clinical laboratory and small surgical facilities were also available. Architects, designers, philosophers, experts in music, artists, and nurses, among others, took part. In all, some 10,000 individuals received medical and dental care in regions that are geographically or politically isolated. The last 1½ years have been spent analyzing data. The way in which we are handling the results of our investigations is somewhat different from traditional scientific work. Rather than proceeding to publish them in international journals at once, we are producing a series of books explaining our results in simple terms. These books are sent back to the people we visited, as well as to the state and private institutions that handle problems of Indian or isolated communities in Colombia, and they are also available to the general public. In that way, they may be useful to the communities for setting up action projects, in which we are willing to help, and to the institutions, providing them with information as to what sort of problems they have and, perhaps, how to address their needs. We also hope they may help us in generating some knowledge of and interest in human diversity among our fellow countrymen and women. In other words, we have tried to think of the problems of the people first. After all, we should not only be interested in the human genome but also in the human beings that carry it.

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Nicaragua's Research Agenda

I read with great delight the News & Comment article "Latin America: A personal technology transfer effort in DNA diagnostics" by Marcia Barinaga (25 Nov., p. 1317), which chronicles one of many individual contributions made by American scientists to Latin America. Barinaga asks two important questions, namely, whether polymerase chain reaction techniques can be integrated into Nicaragua's public health system and whether the use of modern DNA technology is sustainable in developing countries without continuous outside support. There is another problem. Because of economic difficulties, the Nicaraguan health and education systems are facing serious troubles, and local researchers have found themselves

in an especially precarious position. In this decade, local support for infectious disease surveillance and studies has diminished as a result of budget restrictions.

In order for the transfer of technology initiatives to keep functioning, continuous foreign support for collaborative work between local and outside academic institutions, including aid for graduate studies, is of utmost importance. The long-term health of science and education in Nicaragua will depend on the continued influx of talented and well-trained young scientists, and this poses new demands for substantial and well-organized monetary support.

As a Nicaraguan citizen I have been approached by several researchers at the University of California, San Francisco, who have requested information about science and education in my country, and some have even offered personal contributions. As Nicaragua begins to set up a research agenda, it must be strongly supportive of these individual efforts.

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External Ethics for Scientists

Bruce Alberts, Kenneth Shine, and the national academies are to be commended for the June 1994 convocation at the National Academy of Sciences and for the attempt, through their Policy Forum of 9 December (p. 1660), to raise our consciousness about ethics internal to the practice of science. Some of their examples were penetrating and illuminating. On most major university campuses, the science, technology, and society programs are running regular courses for engineers and scientists on such topics. My guess is, though, that fewer than 100 students per year take them on any campus.

By far the more important aspect of ethics in science is not internal to science at all; the damage one can do by painting mice or forging a few data points is seldom long lasting and has little impact in time or space. What society is demanding is ethical behavior by scientists when they deal with society. Specifically, I refer to the increasingly common examples of egregious exaggerations about the value of some tiny bit of science to society, especially when reported by the mass media. The most dangerous duo in the world of science ethics is the combination of a scientist with few scruples and a headline-hungry reporter. My involvement with the Superconducting Super Collider debate taught me that a large fraction of Congress simply doesn't believe our rhetoric any more. The damage done to all of science by such exaggerations—internally, by shifting attention and finite budget resources, and externally, by confusing the public and policy-makers—is incalculable. Recall the high T_c superconductor flap even involving the President of the United States. Now, more than a billion U.S. dollars of research later, has the public gotten its money's worth? No! Preserving our ethics demands more than courses for students; we must act on them.

Shouldn't every single professional society have a "small claims court," where egregious errors in scientists' claims could be quickly adjudicated and corrected and the results passed on to the public? I have urged the national academies to deal with "external ethics for scientists." I trust they will do so.

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