Letters

Reducing Imports of Rare Wildlife

A constructive approach toward conserving the rare and endangered wildlife of Africa and South American countries is hampered by the political and economic conditions in those nations. Only by reducing the export of the wildlife can any control become effective. The United States and European nations are the principal importers of these animals. If these markets were closed, the international agencies might be able, through their educational programs, to gain support for conservation within the developing nations and prevent political moves which would further endanger these species.

At Kennedy Airport alone, between 26 June and 11 September 1967, some 20,000 birds, 4000 primates, and 6000 reptiles and amphibians were declared as imports, mostly from Africa and South America. These were legal, according to the provisions of the Lacey Act of 1900, an obsolete law governing animal imports. Representative Alton Lennon's bill (H.R. 11618), identical to Representative John Dingell's bill (H.R. 6138), proposes to end the importation of endangered species and their transport in interstate commerce. Legitimate scientific imports would be scarcely affected, if at all. This bill will be considered in full committee early in the next session of Congress and deserves the support of the scientific community.

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Scientific Responsibility in Modern Life

In his review of *Contemporary Change in Traditional Societies*, Eric Wolf (10 Nov., p. 759) expresses "anguish" at the social effects of a century of modernization which my colleagues and I describe in Africa, Asia, and Latin America, and, deploring our "neutral view" of social change, he asks "modernization for what?" In letters (1 Dec.) H. Wynberg and others ask "Does science neglect society?" The moral responsibility of scientists for social change and its attendant ills has been increasingly debated in *Science* and elsewhere since the bomb was dropped on Hiroshima. I submit, however, that the issue has been improperly phrased and an unnecessary dilemma thus created. It is my purpose to clarify the issue rather than to answer Wolf's review.

Modernization, or any form of contemporary change, represents the social effects of hundreds of thousands of basic scientific discoveries that have been applied to technology. Its social impact became marked with the industrial revolution. Today, scientific research is a basic culture value, and we obviously cannot hold any particular scientists responsible for its effects. Science must above all remain free. We do not ascribe to the agronomist moral guilt for so increasing crop yields that farmers have been facing a crisis. It is not the fault of the nuclear physicist that enormous new sources of energy are still used largely for potential mass destruction rather than for peaceful purposes. The fundamental issue is what consequences any new scientific research will have. The question, therefore, should be "What are the factors and processes of modernization and how may science predict the outcome of decision-making?" rather than "Should the scientist take moral responsibility in social issues?"

The factors and processes of modern change have been operating irreversibly for several centuries, and scientists have had little idea of the far-reaching and accelerating consequences of their research. Social science has become important with the recognition that change has entailed social disjunctions and conflicting values. Today, the international crises resulting from these conflicts threaten a nuclear holocaust. At the same time, many societies that were formerly traditional welcome modernization, with its promise—if not fulfillment—of better health measures, education, and access to the goods and amenities of the contemporary industrial world. The cost of modernization may be deplorable, but neither the societies nor the scientists know exactly what is in store. We know principally, as our volumes pointed out, that local isolation is replaced by linkage with the institutions of the larger society, that traditional values of sharing tend to break down under competition in the marketplace, and that factionalism and other sources of stress are generally concomitants of emergent nationhood. These are qualitative changes, and many other studies describe similar change.

What, then, is the responsibility of the scientist? The first and fundamentally important task is to assess the consequences of policies and decisions—to understand causality in human affairs so as to lay some basis for predictions. Only by such means can the consequences of future acts be appraised. It is pointless to stress responsibility for changes of the past.

To those who claim that the social scientist cannot separate his science from his human compassion I answer that he can and must. Most of us, for example, deplore the bombing and burning, use of napalm and tear gas, and killing of soldiers and civilians in Vietnam. But the social issue is not resolved simply by expressions of moral indignation or by holding protest rallies. The need is, on the one hand, to ascertain why this is being done—to clarify the objectives and explain the strategies—and, on the other hand, to present with plausibility the probable outcome of this or some other course of action. Anthropology has a considerable body of relevant data on formerly traditional societies that are emerging from colonialism, and if these were mobilized and presented as causal hypotheses which state "If this is done, then that will probably happen," the consequences of present policies would be far more convincing than protests of indignation.

A parallel case involving moral issues is the dropping of the bomb on Hiroshima, for which many nuclear scientists have carried a sense of deep guilt. What has been almost completely overlooked is that the horrors of the bomb lay less in its unprecedented power than in the fact that mass destruction of civilian populations had already become an accepted practice of World War II. By employment of many bombs, more civilians had been