LETTERS

"Across the boundary"

A physicist says that scientists have "basic responsibilities" to explain to the public "why they and their projects are worthy of public support." One reader argues that prehistoric cannibalism in the Americas is only a theory; another provides an historic example of such activity (right, ancient human bone with cut marks). The world's growing human population is discussed in relation to the "Green Revolution," "human-dominated ecosystems," and immigration policy. And events surrounding the mass extinction at the Permian-Triassic boundary are studied.

T. D. WHITE/BERKELEY

Basic Responsibilities

In his Policy Forum "Science and technology in foreign affairs" (1 Aug., p. 650), former Secretary of Energy Admiral James D. Watkins points a finger at Administrations, both present (Clinton's) and past (Bush's), for neglecting issues of science and technology in conducting foreign affairs. He shows how this neglect led directly to the failure of the Superconducting Super Collider project.

Judging by the subsequent letters that appeared in *Science* (29 Aug., p. 1185), scientists and a U.S. Department of State official were quick to rise to the bait. The temptation to find someone to blame for failures of science policy is strong enough to make some scientists act like nonscientists today. Under Secretary of State for Global Affairs, Timothy E. Wirth (29 Aug., p. 1185), says that the Administration treats science as an important issue, and the other letter writers (I. A. Lerch, 29 Aug., p. 1186; P. A. Cohen, 29 Aug., p. 1186) say that more needs to be done.

While I can agree that more attention needs to be paid to science in international affairs, especially if international projects such as ITER (the International Thermonuclear Experimental Reactor) are to be arranged, I think it is a mistake for scientists to expect the impetus for this to come from the federal government. It is primarily the responsibility of the scientists themselves to explain to the public, government officials, and the rest of the scientific community why they and their projects are worthy of public support.

There are many calls in *Science* for scientists to do more to explain science and technology to the government and the public. National Science Foundation director Neal Lane has said it often, and much better than I do. It is important nevertheless, not to be absolved of our basic responsibilities.

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Evidence of Cannibalism?

In the article "Archaeologists rediscover cannibals" (Research News, 1 Aug., p. 635), Ann Gibbons quotes Arizona State University bioarchaeologist Christy G. Turner II as saying that "[c]annibalism was practiced intensively" by early Americans, and University of California, Berkeley, paleoanthropologist Tim D. White as saying that the "analytical rigor" of research on cannibalism "has increased across the board." But Turner's and White's theories of prehistoric cannibalism remain only theories. The patterns they see in the material are selective and taken out of context, their application of forensics is subjective, and their differentiation between human and scavenger action on bone is suspect.

Sure, some of this human bone has been modified by other humans (although some of it, including the infamous "pot polish," is the result of animals); however, the same modifications can result from a number of different causes depending on the motivation of the protagonists (warfare, ritual execution, mortuary practices, and so on).

Cannibalism may very well have existed,

but the methodology used by Turner and White does not seem to consider culture and human motivation.

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Anyone who can't believe that our tender and delicate species could possibly resort to cannibalism should read of the fate of Giovanni Verrazzano, the discoverer of New York Bay (*1*). In 1528 he anchored his vessel off shore of an island in the Caribbean Sea and landed from a skiff to meet a crowd of natives, as did many captains who landed along the North American coast from Florida to Labrador. His audience immediately murdered him, then cut him up and ate him on the spot, while his brother watched helplessly from beyond the surf line.

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References

1. S. E. Morrison, *The European Discovery of America: The Northern Voyages* (Oxford Univ. Press, New York, 1971), p. 315.

World Population and Food Supplies

The subtitle of the article by Charles Mann, "Reseeding the Green Revolution" (Special News Report: World Food Prospects, 22 Aug., p. 1038) reads, "High-yielding varieties of wheat, rice, and maize helped double world grain production. A repeat performance is now needed [because of continuing world population growth], and that will require a new commitment to agricultural research." It seems important to repeat the question that Garrett Hardin (*1*) often asked: "Do we have a shortage of food or a longage of people?"

Is it responsible for scientists to hold out the hope that endless population growth can be matched by endless doublings of world food production? At some point, probably sooner rather than later, we are going to run into the limits set by the law of conservation of stuff. The people of the world would be better served if we scientists gave our primary attention to the achievement of zero or negative population growth, first in the United States and then worldwide, so that further increases in agricultural production could be devoted to substantially improving diets worldwide.

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References

1. G. Hardin, *Science* **162**, 1243 (1968).

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Maximizing U.S. Population?

With regard to the special section on "Human-dominated ecosystems" (25 July, pp. 485–525), who will be brave enough to echo the 25-year-old call of the President's Commission on Population Growth and the American Future to stabilize this country's population, which was about 205 million in 1972 (*1*)? Congressional disregard of the commission's admonition that immigration -policy would have to respect demographic goals means that, instead of leveling off at 240 million people by the year 2030 and then slowly declining (*2*), the U.S. population will probably reach 500 million by mid-21st century (*3*). It has become "politically incorrect" to present the data showing that immigrant women now contribute nearly 18% of all births nationally (making the difference be-