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A Run Worth Making

It has been said, perhaps too often and too loudly, that science is an objective process, one that is value-free. In our time, when science is being employed most conspicuously as an adjunct of politics and strategic national purposes, a vacuum of internal values tends to be invaded by prevailing external values. Not surprisingly, the eventual recognition of what is taking place produces a level of discomfort that expresses itself, within the strictures of science's methodologies, in concerted displays of scientific responsibility. The conscience of science comes, a step at a time, to life.

Despite admonitions from Rome that believing scientists have the duty to look themselves in the eye when they apply brainpower to weapons systems, scientists are justified in doing what is necessary to offset the unmistakable progress of an unpredictable adversary. But what must be added is that scientific responsibility has another dimension, and it is to look squarely at the consequences of violence in the application of scientific knowledge.

It has been a very good thing for the integrity of science, and a sign of courage, that some 40 scientists of high standing have gone public with their considered estimates of the global atmospheric effects and long-term biological consequences of nuclear war.* Whether such a weapons exchange would be small or vast in its scale, they believe, the effects on the biosphere would be lasting and literally deadly. In effect, life-support systems would be cut, and the diminished surviving populations would have little chance in a darkened and sunless environment.

Some four decades ago in the heat of war and its enforced secrecy, scientists prepared the nuclear weapons that were exploded without warning upon civilian populations. It says a good deal for the emergence of the scientific conscience that, in a difficult age of superpower hatreds and technological gusto, the present warning is timely, unvarnished, and stark. Nor is it the first of its kind. Health scientists have made clear the absurdity of assuming that there would be a medical care system after a major attack and have been stumping the country to put the message across.

There remains the question of who is listening and how deeply these warnings penetrate and adhere to the nation's thought. For a few days, the news of potential biological catastrophe is the stuff of media prominence, only to be quickly displaced by the next catastrophe. The society is exhausted and news-numbed. No special session of the U.N. General Assembly is called to digest and reflect on the appalling meanings of the scientists' findings. If alarms have shaken the American and Soviet tacticians ostensibly seeking a breakthrough in nuclear arms control negotiations, it is a well-kept secret. The drift continues, and the world is ablaze with "small" wars and threats of larger ones. What does this signal to concerned scientists? For all that is obvious about science as a universal force, as a trusted partner in the works of society and governments, can it be supposed that science cannot make a difference in the one matter that transcends all the others? This is not a conclusion that scientists will swallow.

Among the endless arguments centering on arms control agreements, no issue is more vexing than that of verifying compliance, especially as new weapons are promised to the arsenals of both sides. What the cluster of scientists concerned with biological effects have done very well is to nail down, as far as scientific method can do it, the probabilities of consequences of an exchange of nuclear weapons on the biosphere. Even allowing for the constraints imposed on scientific opinion in the Soviet Union, it is fair to assume that the same conclusions are held in that quarter. Here, then, is a new basis for dialogue and for an alternative run at restraint. It is a run worth making.—WILLIAM D. CAREY

*R. P. Turco *et al.* and P. R. Ehrlich *et al.*, this issue.