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Science and the General Welfare in a Democracy

Most speeches by government scientists have the stimulating effect of a stiff dose of tranquilizer. The recent Harrelson lecture by Glenn T. Seaborg departs from this custom. He outlines some of the tremendous questions which face civilization in matters where science and technology affect the general welfare and indicates that our scientific leadership faces thorny problems in dealing with the support of science.

Seaborg selects for special discussion three major recent developments, each of which alone has changed or will change civilization irreversibly. Naturally he first examines the destructive and constructive effects of atomic energy. Computers and automation are the second development, one whose eventual impact is not yet fully perceived. Seaborg feels that "the potential effects of this technology are of such significance that we must restudy, and perhaps may have to reshape, what we had thought were unchanging economic concepts and principles." Pointing to a third development which may change man's destiny, he comments on potential discoveries in molecular biology:

"We may expect that inevitably our recently acquired knowledge of the genetic code will be applied also to the improvement of the human species. . . . But once we have the ability to determine the genetic characteristics of a human infant, who will step forward with sufficient wisdom to choose those traits most beneficial to the man of the future?"

Against this background of the role of science and technology in shaping civilization, Seaborg examines how well we are equipped as a nation to cope with problems in which the health of science is at stake. At this point in his speech he seems to remember that as chairman of the Atomic Energy Commission he must avoid criticism of other bureaucrats. Accordingly, for a few moments his remarks lose their sharpness. However, he ends this section with the observation that "we continue as a nation to be plagued by a persistent myopia as to our long-term national goals in science." He points out that "we will need to apportion funds among the different fields; weigh the relative merits of spending for research, for facilities, and for the improvement of teaching; and decide how much is justified for high-energy physics . . . and for other areas of work in which the costs for basic facilities are high." He asks, "How can we prevent a Science pork barrel?" And he cautions, "We must not let our national support of science and technology degenerate to the point where no state—no Congressional district—is complete without a Post Office, a reclamation project and a new science laboratory. . . . We must manage somehow to provide for the support of new centers . . . in such a way that we do not turn our best scientists into migratory workers . . . gravitating from one scientific mecca to another, dependent upon the fluctuating whims of Federal support."

Seaborg does not provide solutions, but in posing the questions forthrightly he has set a high standard for others. Public discussion of these issues will surely lead to more informed thinking and ultimately to wiser action.—PHILIP H. ABELSON

(Dr. Seaborg gave the Harrelson lecture at North Carolina State University, Raleigh, on 11 March 1964. Reprints can be obtained from the Division of Public Information, U.S. Atomic Energy Commission, Washington 25, D.C.)