

Technology, Challenge to Social Invention

By Charles E. Merriam

The National Resources Committee established a Science Committee, consisting of three members designated by the National Academy of Sciences, three by the Social Science Research Council, and three by the American Council on Education. The subcommittee on technology consisted of Professor William F. Ogburn of the University of Chicago, Dr. John C. Merriam, President of the Carnegie Institution of Washington, and Dr. Edward C. Elliott, President of Purdue University. Its report deals specifically and in much detail with the special developments of very recent technology and with some of the social implications of these recent developments.

The significance of this report does not lie either in the committee's findings or its recommendations, both necessarily broad in their terms, but in the fact that the national government in planning its long-time policies, takes cognizance of the importance of a rapid stream of technological change and its relations to the development and adjustment of our whole national economy.

These inventions open the door to incalculable wealth and opportunity and indefinitely higher levels of human happiness if we are able to utilize them in the fullest possible measure. This utilization will not come by chance, however, but requires the most earnest and comprehensive consideration by responsible groups of competent persons, both in and outside the government.

The question may be asked what has a National Resources Committee to do with technology and invention?

It is our position that research and invention are the very greatest of our national resources. The early Indians had the same natural resources that we now have, but they did not know how to use them. They might freeze because they lacked techniques adequate to the use of coal, oil, gas, hydro-electric power.

Raw materials are important, but if the mind is as raw as the materials, nothing much will happen. We

(Whatever verdict history renders on the social policies of the Federal government during the third and fourth decades of our century, one item may be certain of a kindly fate—its encouragement of research in the varied implications of national social trends. The reports of President Hoover's Committee on Recent Social Trends and of President Roosevelt's National Resources Committee, however hesitant in conclusion and proposal, have caught the public eye with the variegated facets of the modern social problem. Particularly noteworthy has been the work of the National Resources Committee, which, in an age inclined to turn toward business planning as a panacea, has shown the fundamental importance of land-use planning in the formulation of social policy. In its interesting study, "Technological Trends and National Policy," the committee indicated the social implications of material progress. Professor Charles E. Merriam of the University of Chicago, the noted political scientist who is a member of the committee, discusses some of the issues raised by this study in a paper, "Some Social Implications of Inventions," shortly to be published in full elsewhere, from which these remarks have been extracted.—The Editors.)

are interested not only in conserving land, water, minerals, but in utilizing and developing to the fullest extent possible the aptitudes, skills, techniques, technologies, without which land, water and minerals cannot be effectively employed and enjoyed by men. National resources planning which ignored these factors would be naive and futile in the extreme.

Furthermore, sound consideration of national resources planning requires not only the conservation of what we now have and the better distribution of what is produced in goods, services and values, but their constant development and enrichment—the continual widening of the circle of production.

National resources are not talents to be buried in a napkin, even if the

title is equitably divided, but rather like seed to be planted, nourished and cultivated for the commonweal.

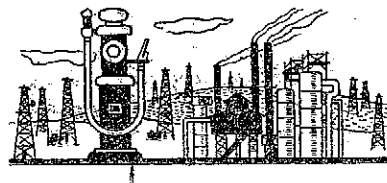
Standards of living rest upon levels of productivity which are determined largely but not wholly by levels of technology. We must add or include the social technologies which utilize the immaterial values of justice, liberty and the highest cultural aspirations of mankind, never to be forgotten in any human relations.

Our technology if properly utilized will lead us to higher levels of national productivity and higher standards of living. I am not unaware that the phrase "higher productivity" is sometimes made the pitiful excuse for enlargement of output without adequate distribution of the resulting gains, as a smoke screen to prevent or confuse consideration of just demands for fairer treatment of workers or consumers. But this type of greed should not and need not be controlling.

The drive for national productivity need not be a way of avoiding consideration of what we have now. It must constantly be borne in mind that the struggle over the just distribution of 100 units need not blind us to the importance of reaching out for the 200 units we might produce and consume if we could adjust our technology and our social problems satisfactorily. It is important to examine carefully from time to time the bottlenecks of production—as the building industry for example, with a view to opening out a wider and deeper channel of national production, national income and national welfare.

It has been suggested from time to time by defeatists that the thing to do is to suspend all invention and technological advance for ten years or so, until we can catch up with our social arrangements. There are several show men ballyhooing the featured exhibit of the decline and fall of western civilization, of cooperative, free-society democracy. But the price of admission is high steel rather than gold apparently, and the inside show not up to the outside come-on exhibits.

It is hard to hurry either democ-



racy or science, but this is not to say that they are incapable of swift and decisive action at critical phases of the cycle. In general, conclusions of this type are rash, and sounder wisdom may be invoked. Invention did not make our civilization, but, on the contrary, our civilization produced the inventions; and is able to produce social inventions adequate to utilize other types of inventions.

Some objections have been made to the program suggested by the Technical Committee. It has been said that since there are so many and such rapid changes in progress, it is impossible to make any plans based upon such a shifting foundation. If this suggestion were to be taken literally, then industry, government, social institutions might fold their hands and await the approach of change with idle curiosity perhaps, but nothing more.

It is surely not the habit of business to do nothing because there may be something new tomorrow. Nor can it be the accepted practice of government or other associations to await change passively and without the best possible preparation based on the soundest estimate of what the possibilities are. Of course, if there were no uniformities in nature, nothing could be foreseen or prearranged. But that is not the case. We have much that changes but more than remains stable. And from the known we build out into the relatively unknown, struggling to anticipate alternatives as best we may, realizing that mistakes will be made and that waste and loss will be found, but balancing the hope of larger gain against the smaller loss.

If we were to stop planning and fold our hands awaiting the end of the march of scientific discovery and technical invention, we might have some time to wait. This has not been the way of modern civilization, and we may safely forecast that it will not be the way of the next generation or cycle of development. Certainly I cannot subscribe simultaneously to the double and contradictory doctrines—(1) that we cannot plan because the world is changing, and (2) that we cannot plan because nothing human can be changed. One or the other must be wrong.

But it may be contended that there

SOCIAL CHANGE

With the beginnings of society arises the need for social intelligence—for that consensus of individual intelligence which forms a public opinion, a public conscience, a public will, and is manifested in law, institutions and administration. As society develops, a higher and higher degree of this social intelligence is required, for the relations of individuals to each other becomes more intimate and important, and the increasing complexity of the social organization brings liability, to new dangers. . . . The well-being of each becomes more and more dependent upon the well-being of all—the individual more and more subordinate to society. . . . There is in the past nothing to compare with the rapid changes now going on in the civilized world. . . . This rapid progress is primarily in industrial methods, and material powers. But industrial changes imply social changes and necessitate political changes. Progressive societies outgrow institutions as children outgrow clothes. . . . It is manifestly wrong to attribute either necessary good or necessary evil to the improvements and inventions which are so changing industrial and social relations. They simply increase power—and power may work either good or evil as intelligence controls or fails to control it. . . . Institutions which regulate the use of land constitute the foundation of every social organization, and must affect the whole character and development of that organization.

Henry George.

"Social Problems," 3, 4, 6-7, 140, 194.

is danger that the government will take in hand all forms of invention and end by drying up the springs of advance. This is a far cry from what the Science Committee has proposed. Their report has called attention through governmental channels to the enormous importance of the social effects of inventions; they have

suggested that appropriate governmental agencies continue the consideration of new discoveries and their social implications; they have also urged the encouragement of invention as a basic process in our national economy. They have indicated the urgent necessity to stimulate invention, and also, as far as possible to cushion the community against disadvantages in unemployment and obsolescence.

In a forthcoming report of the National Resources Committee now in the course of preparation by Prof. E. B. Wilson, of Harvard, Prof. Charles H. Judd, of Chicago, and Dr. Wm. F. Ogburn, of Chicago, the place and possible improvement of the scientific agencies in the United States Government will be thoroughly considered, as well as the grants made by the government for the encouragement of research, and the relations in general between governmental research and other forms of science and invention.

It has never occurred to us that the government should endeavor to monopolize or control indirectly all research and invention. On the contrary it has been thought that every effort should be made to encourage research and invention by every available agency, public, quasi-public or private, industrial, academic, institutional or otherwise, both in natural sciences and in social science; and that the government should use its friendly offices for the purpose of assisting them.

The government or governments themselves, including government departments and educational institutions all over the land, are, of course, research agencies of very great magnitude, both in the field of natural science and social science; and what they do should be done on the highest possible level. This whole subject will be discussed in a forthcoming report of the Science Committee in 1938.
