

NEW TOOLS FOR AN ABUNDANT LIFE

A PROGRESSIVE PROGRAM TO SECURE FOR THE PEOPLE THE BENEFITS OF SCIENCE & TECHNOLOGY

Notice

This is a preliminary draft. It is proposed that this statement be rechecked by scientists, then rewritten by writers, and be illustrated by artists.

Science is a growing body of knowledge and also a powerful method of solving problems; it continually transforms the conditions of life and makes possible either a world designed for satisfying human needs or by contrast, a world equipped with the means of efficiently destroying all life. We choose the creative applications of science and reject its use for war or for the profit of the few at the expense of the many. More and more scientists are finding common cause with their fellow citizens in seeking a practical democratic means of realizing this essential goal. We wish to speak out with those who feel the great possibilities of science in the service of man and who realize that enlightened political action, independent of the old political parties, is a necessity. Fortunately in our United States of America it is possible to influence the trend of events by voting, by criticism or praise of government or corporate policy, by public discussion of issues, and in many other political ways, including the formation of new political parties.

There are a number of questions which need examination in this regard:

- (1) What is the role of science in our country at the present time?

It is generally acknowledged that science is not now being used for promoting the general welfare to anywhere near the extent possible. There are two major reasons: First, the drive toward war has diverted a considerable number of scientists from their normal peacetime activities. Basic scientific developments are invariably retarded by war or preparation for war since during such

periods most scientists are not gaining fundamental new knowledge as is their usual custom, but merely applying old knowledge for purposes that have little use in peacetime. For example, the emphasis on atomic bombs has resulted in shamefully few applications of atomic fission, even to purely scientific problems. Second, the motive for doing scientific research and for improving methods of production is primarily not one of public service but one of securing a private gain, whether or not it benefits the public. True, we can see a great many important benefits of science which are available to the common man, and these must not be discounted. However, these benefits come to us partly as a result of public support for research centers, such as medical institutes or government and university laboratories, partly as a result of public vigilance in exposing the profit-seeking arrangements of the corporations - and partly as a by-product of private industry. Some industries genuinely seek, through a program of scientific research, to improve the quality and decrease the cost of useful products. It must be remembered, however, that research is costly and its fruits usually take years to mature. Hence these progressive industries are exceptions and often yield to temptations of immediate profits, especially when they have acquired a monopoly position. Also, these same industries bring about their improvements at the cost of displacing labor or making labor more routine and less suited to human requirements. Science has been applied much more generally to improving a factory product than to the betterment of the worker in the factory. In addition, much research is done merely to keep possible competitors out of the field.

The common understanding that many inventions are secretly suppressed by private interests, cannot of course, be as fully documented as can the few examples of the opposite behavior. However, the electric battery industry furnishes an example of how this practice probably works out in many other cases. In this instance the record has been made clear by the proceedings of the Justice Dept. in a little publicized anti-trust suit against the major battery companies for their agreeing to withhold from the market a new nickel-cadmium battery which

would render obsolete the well known lead storage battery used in autos. The new battery is the result of prolonged scientific research and promises to have a much longer life than the old type. The cost per year to the average automobile owner would be sharply reduced if the new battery were marketed. However, a pre-war cartel agreement provided for a German monopoly of their manufacture. Hitler's submarines benefitted from the research, but we did not. A prime motive for the behavior of the American companies was the considerable cost of investing in new techniques and equipment coupled with the prospect of selling new batteries to car owners only once in six or eight years rather than every one or two years. Even some time after the court judgement against these companies, the new batteries were still not available, except through small companies for special industrial purposes.

In addition to outright suppression of ^{invention} progress, there also exists the widespread practice of "educating" the public through the advertising of misleading or false claims to accept goods which are of inferior quality to what could be made by the best known methods.

(2) What could we reasonably expect to achieve by a whole-hearted utilization of science? *what does science offer the people*

A study of available resources and well established trends in scientific progress shows that the following are among the many practicable goals:

A) Food Production: Rational methods of soil conservation, soil nourishment, combined with already known ways of breeding superior animals and plant stock would yield several times the present food production within a generation.

Entirely new agricultural techniques have been explored which promise still greater returns - or an abundance of food with far less labor than at present. For example, by growing plants without soil in water solution of chemicals, compact, relatively simple producing units can be set up wherever there is sunshine. Over 200 tons of tomatoes per water acre have been produced by this method. An even

greater advance is indicated by studies leading to the manufacture of synthetic basic food, perhaps in the form of fodder for animals, from bacteria, sea algae or chemical conversion of waste materials. This planet has the potentiality of supporting many times the present population. Even with proven methods of production there is no scientific basis for the idea that wars are an inevitable part of a struggle to achieve a share of dwindling reserves in an overcrowded world.

B) Housing: New materials can already be produced which would permit attractive low cost housing on a mass production basis. Air conditioning in all climates at low maintenance cost.....

C) Manufacturing and Mining: If a nation decides to make a long term investment in improving the quality of manufactured products and the methods of production, using present scientific and technical knowledge, a several fold increase in productivity could be expected within two or three decades. Consider for example the basic industries, coal and steel, which influence the entire economy. The underground conversion of coal to oil and gas by chemical means appears feasible from studies and experiments already made; it would vastly improve fuel and raw chemical supplies and eliminate one of the most disagreeable forms of labor. In the steel industry the use of liquid oxygen in place of air would increase the productivity of blast furnaces by a considerable percentage. A basic reason why so few of the possible steps are not now being taken is the reluctance of private enterprise to take on investments which do not pay for themselves within five years or so. In certain fields only public responsibility can be counted on to seek these long range benefits of science.

D) Power: Even before the recent spectacular release of atomic energy, the development of electric power was so thoroughly understood and water resources so great that an unlimited supply of power for most areas was in sight. This nation, particularly under the Roosevelt administration, made great strides in acquiring

the necessary installations and in developing the many other benefits of dam construction, such as soil conservation and irrigation (as in the Tennessee Valley).

Now it is possible to conceive of electric power from atomic fission which can be set up in regions remote from hydro-electric stations. Although hydro-electric power, would probably be cheaper at the source than atomic power for some time to come, the latter would be important in cutting down transmission costs to areas not favored by rivers and dams.

E) Resources: Although our natural resources are not unlimited and have been selfishly despoiled in the past, there is no scientific basis for any major nation to have a policy of grabbing all resources in sight, throughout the world, in fear of being impoverished. The science of chemistry among others makes possible even at present the substitution of many materials for others, which at one time were considered to be essential or "strategic". Synthetic rubber is now commonplace and in many ways is superior to the natural substance. Magnesium and aluminum alloys can now be produced in abundance; Magnesium is extracted from seawater; Aluminum is made possible by cheap electric power.

A question of importance at present is the state of our petroleum reserves. It is interesting to note that even without further drilling for oil, this nation could in time supply itself with liquid fuel for transportation and heating by a number of ways which would cost only somewhat more than present fuels. The costs can be expected to drop when known scientific techniques are applied to studying the processes. These processes are: The distillation of oil shale, the chemical conversion of coal to liquid and gas, the conversion of agricultural waste material into alcohol. Surely a substantial long-range investment in developing such alternatives is wiser than depending on armaments for the protection of "our" somewhat cheaper Middle Eastern oil supply.

F) Medicine:

(Mention use of radio-active tools from atomic energy)

3. What practical steps can be advocated at present to speed the full-scale use of science?

A. Election of public officials pledged to rapidly develop our resources in the interest of the general welfare.

B. Public ownership of industries requiring long range development such as atomic energy.

C. Federal support for a broad program of scientific education, including training of farmers in methods of scientific agriculture, strengthening of the agricultural extension services, and scholarships for high school and university students.

D. Increased support for the U. S. Regional Agricultural Laboratories, Experiment Stations and Government Laboratories such as the Bureau of Mines and Bureau of Standards.

E. Increased support for fundamental research in our universities, free of political pressure or military influence.

F. Passage of a National Science Foundation Bill, such as

G. Revival of the soil conservation and reforestation programs commenced under the Roosevelt administration.

H. Expansion of the Pure Food and Drug Laws to give consumers more information about the unscientific claims of advertisers.

I. Cessation of attacks on the civil liberties and freedom of scientists, such as those carried out against Dr. E. U. Condon of the National Bureau of Standards, by the Thomas-Bankin Committee.

J. Abolition of secrecy restrictions in fundamental science; military considerations should not be the basis for restricting scientific knowledge in general, as distinguished from science applied to military problems. Scientists are most effective in an atmosphere of freedom of thought and of investigation.

K. Promote international exchange of scientific information and equipment.

Much more information is locked out than locked in by a policy of classifying scientific knowledge as a military secret.

4. What is the attitude of the Political Parties to the Development of Abundance and the Use of Science?

The record of Congress and its leaders shows the position of the old parties:

(Militarization of science)

(Secrecy, "loyalty" probes)

(Failure to pass science legislation)

(Obedience to lobbies)

(Cuts in funds for conservation services)

(Repudiations of Roosevelt's policies)

There is a great promise in the recent development of a new political party, the Progressive Party, which challenges the old on the fundamental issues of "Peace, Freedom and Abundance". It recognizes that "a just government must use its powers to promote an abundant life for its people. This is the basic idea of Franklin Roosevelt's economic bill of rights. The Progressive Party is born in the deep conviction that the national wealth and national resources of our country belong to the people who inhabit it and must be employed on their behalf."

At the Philadelphia convention the new party also proclaimed: "Only through the planned development of all our resources will the full benefit of the Nation's wealth and productivity be secured for the people. We mean to promote, through public ownership and long range planning, the peaceful use of atomic energy to

realize its great potential as a source of power and as a tool in science, medicine and technology."

In regard to science itself, the Progressive Party "calls for the enactment of legislation to promote science, including human and social sciences, so that scientific knowledge may be enlarged and used for the benefit of the people."

It is significant that the leader of the new party, Henry A. Wallace, is a man of scientific accomplishments in the field of agriculture, as well as a great statesman. His scientific contributions to mankind have invariably been related to the practical problems of increasing the productivity of plant and animal life. His demand of abundance for the people, then, is based on the solid foundation of knowledge and on an appreciation of the tremendous potentialities of science in the service of man. Furthermore, Henry Wallace has shown an understanding of the truth that a peaceful world cannot be secured without attention to the basic needs of human beings everywhere. It is no mere coincidence that "Abundance" is linked with "Peace and Freedom" at the apex of the Progressive Party's Platform.