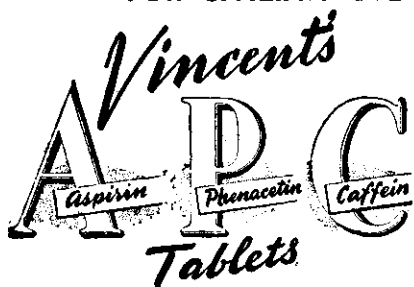


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CO-OPERATION OR CHAOS?

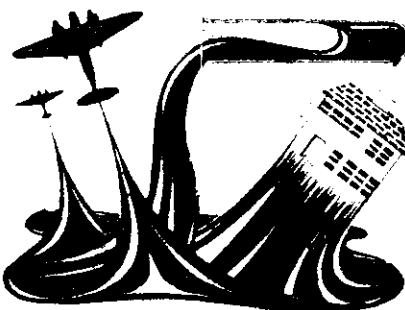
TWO weeks ago we published an address by Professor Polanyi on the place of the scientist in the community. Another aspect of the same question, not without some bearing on the atomic bomb and the Canadian spy hunt, is discussed in this article which we reprint from "The Saturday Review of Literature" (New York). The author is Robert R. Wilson, assistant director of the Los Alamos Division of the Atomic Bomb Project and professor of nuclear physics at Princeton University.

ON the desk beside me as I write is a book, not yet read through, by J. D. Bernal, called *The Social Function of Science*. I have already read J. G. Crowther's *The Social Relations of Science*. Before the war, while I might have thumbed through books of this sort curiously, I could well have said that the science I pursued, nuclear physics, had no immediate social function. The truth is that while scientists were as aware of social and political conditions as most men, they liked to think that their work as explorers of the unknown was an end in itself. The scientist of a few years ago working in his laboratory felt only a slight interest in the technological developments stemming, usually years later, from any discoveries he had made. He was pained to read the repeated slogan that his was a Scientific Age, for his connection with the world of radio and refrigerators, of bigger, better airplanes was reasonably remote. "Social function of Science," he might have muttered to himself. "The social function of science is to produce good physics or good chemistry or good physiology."

Smack Into Politics

This detachment of science and scientists was shaken when scientists were recruited for war work. There were few men who could leave their peaceful laboratories for experiments on weapons of death without scrutinising their consciences and the relation of their profession to society more thoroughly than they had before. But when the first successful atomic bomb ripped the air

of a desert in New Mexico called, appropriately enough, Jornada del Muerto—Journey of Death—the scientists were catapulted smack into political activity. Only six years after the discovery of uranium fission by Hahn and Meitner, bombs utilising the energy released by that fission fell upon Hiroshima and Nagasaki. Technology and science were no longer separate entities, but were fused into an awesome marriage. With more truth than it realised, the press



proclaimed the dawn of a new era; "The Atomic Age" they called it. We scientists then found ourselves among the few who understood the implications of this development. We found ourselves prophets of the new age.

Even before the successful test, we had begun tentatively to organise. At first a handful, then 50, and finally about 500 of us at Los Alamos met to consider the sociological implications of our work. Spontaneously and separately, the scientists at Chicago's Metallurgical Laboratory, at Oak Ridge in Tennessee, and at Los Alamos formed associations. These scientific organisations, like the atomic bomb, were something new upon the American scene. Up to this time, American men of science had remained aloof from any sort of political organisation. No matter what our personal political colour, professionally we were rugged individualists. There have been causes which might have evoked united action—the same economic drives and the same insecurity which lie back of most trade unionism. It is significant to me that when scientists did organise it was not for personal objectives, but rather as a result of a deep and profound sense of moral responsibility.

"Horried at the Possibilities"

We would be automatons, indeed, if, having unleashed a power like nuclear energy, we did not try to explain its implications. The men who worked on the atomic bomb are horrified at the possibilities of its misuse. All of the newly organised scientific groups have issued statements indicating their belief that atomic weapons are a radical development which will distort the picture of traditional warfare. These statements



examine the possible paths that the United States can take in respect to nuclear power and conclude that only one road is feasible—removing the atomic bomb from an armaments race by placing it under strict international control.

It is not an easy job for us to interpret the ramifications of nuclear energy to the American people. The rift between the scientists and the man in the street is one of long standing, and Sunday supplement articles have never bridged the gap. The language of science is admittedly difficult to understand. Scientists can command little influence through weight of numbers. Furthermore, scientists have always shunned personal publicity. What one has then, in effect, is a handful of obscure men rising up and insisting on certain political reforms. It appears almost quixotic. On our side we have amazing unanimity. More than 90 per cent. of the scientific personnel who developed the bomb belong to the new organisations and they are unanimously agreed that international control of nuclear power is imperative.

"It Would be an Ironic Calamity"

Our whole position during the war was an anomalous one. To work under conditions of secrecy and without contact with the scientists of other nations was, for us, a new experience. Indeed, had this condition been initiated a few years previously, we might not have known of the discovery of fission. Scientists normally do not recognise international boundaries. For them, the border is that between fact and superstition, and the only frontier is between the known and the unknown. Despite this internationalism, reinforced by publication of results all over the globe, and international congresses of scientists, the United States Government had no difficulty in mobilising its scientists for war, in many instances more than a year before Pearl Harbour. Fascism's ultranationalism and its mystical unreason made it a force inimical to us as scientists as well as to us as men. It would be an ironic calamity, however, if the tools we placed in the hands of our Government in order that it might defeat militant and threatening nationalism served only to reinforce chauvinistic tendencies here at home. It was not to give the United States nuclear energy as a great club that we sweated four years on the problem of the atomic bomb. It was, rather, to release the world from the fear of aggressive and imperialistic nations. We hoped also to make nuclear energy a reality at a time when it could be a great force for peace and collaboration between nations.

"We Cannot Go Back"

One might ask, "Why do not the scientists return to their laboratories, now that they have finished their war work, leaving the social and political problems

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