

## SCIENTISTS WARN OF 'ANNIHILATION'

Nova Scotia Group Declares Misuse of Nuclear Energy Can Be Fatal to Mankind

By RAYMOND DANIELL  
Special to The New York Times.

PUGWASH, N. S., July 11—Twenty-four Russian, Chinese, Japanese, and Western scientists joined today in a warning to the governments of the world that misuse of nuclear energy could lead to the annihilation of mankind.

The statement by the scientists was made after four days of deliberation as the guests of Cyrus Stephen Eaton, Cleveland industrialist and financier, in the friendly and informal atmosphere of a Nova Scotia fishing village. The scientists included geneticists, physicists, chemists, physicians and other experts, some of whom had helped to develop nuclear energy.

The statement of the scientists, in which three of the Soviet Union's leading physicists joined, said that observations based on the results of test explosions already made led them to the "unquestioned conclusion" that unrestricted nuclear war would be a "disaster of unprecedented magnitude." They found little ground for hope that nuclear war, once begun, could be limited to any region.

First, they said nuclear energy must never be used in war. The scientists, from ten countries from both sides of the Iron and Bamboo Curtains, agreed among themselves that the effects of radioactive fall-out from bomb tests thus far conducted "were not widely different though somewhat greater than those recently presented by official government agencies."

Nevertheless, they agreed in a final statement that the hazards to life on this planet, compared to others to which mankind is subjected from natural causes, is "small" from the tests so far conducted. However, the scientists warned that because of the fact that some areas might be subject "to effects much above the average, close attention to the dangers should be maintained especially if the tests of bombs which give large radioactive fall-out continue to be made."

The principal effects of radiation, the scientists said, was due to strontium 90. The scientists agreed that the tests conducted over the past six years will be responsible for an increase of about 1 per cent over the natural incidence of leukemia and bone cancer during the next few decades. In the next thirty years this increase would amount to about 100,000 additional cases of leukemia and bone cancer, they said.

The second principal affect of global fallout, the report of the committee on radiation hazards said, would cause "serious injury to about as many individuals as those in whom leukemia or bone cancer will be produced by the strontium 90. The effect from any given amount of fall-out, unlike the affects from strontium 90, will be scattered over many generations, they said.

### Effects in General War

In the event of an outbreak of general war, the scientists said: "The radiological hazards would be thousands of times greater than those due to fall-out effects of test explosions.

In combatant countries hundreds of millions of people would be killed outright by the blast of heat and by the ionizing radiation at the instant of explosion whether 'clean' or 'dirty' bombs were used."

By "clean" bombs they meant bombs 90 per cent free of harmful radioactive fall-out, such as President Eisenhower recently was assured by United States technicians could soon be made. "Dirty" bombs are those of the old type with their deadly radioactive effects.

If "dirty" bombs were used in warfare, the scientists agreed, "large areas would be made uninhabitable for extended periods of time and additional hundreds of millions would die from the delayed effects of radiation from local fallout, some in the exposed generation from direct radiation and some in succeeding generations as a result of genetic effects.

Even those countries not directly hit by bombs would suffer through global fall-out," which, under certain conditions, may be of such intensity as to cause large-scale genetic and other injury," the scientists agreed.

By that the scientists warned that even those who escaped death or mutilation might pass on the danger to children yet unborn.

### Effects of Testing

The report said:

"With regard to the effects of nuclear testing we have found that separate calculations carried out independently in Great Britain, Japan, the United States and the U. S. S. R. have yielded in results in good agreement with one another on the amount of fallout and on its effects.

"A principal effect is due to strontium 90. If, as some evidence indicates the production of leukemia and bone cancer by radiation is proportional to the dose, even down to very small doses, then we may estimate that the tests conducted over the past six years will be responsible for an increase of about 1 per cent over the nature incidence of leukemia and bone cancer during the next few decades. Over the next thirty years this increase would amount to about 100,000 additional cases of leukemia and bone cancer. The correct number may be several times larger or smaller. These additional cases could however, not be identified among the 10,000,000 or so normal cases of the same diseases.

"A second principal effect of global fallout consists of genetic mutations. We estimate that these will cause serious injury to about as many individuals as those in whom leukemia or bone cancer will be produced by the Strontium 90. However the genetic effects from a given amount of fallout, unlike the effects of strontium 90 will be scattered over many generations.

The scholars who sounded the warning included A. V. Topchlev, of the Soviet Union; Hideki Yukawa of Tokyo University, Prof. Chou Pei-yuan of Peking University and an array of other famous scientists from the United States, Britain, France and other Western nations.

From their observations on the effects of tests thus far and the probable future effects of the use of nuclear weapons, the scientists declared that if the human race was to be preserved "war must be abolished and not merely regulated by limiting the weapons that may be used.

They saw the greatest peril to mankind in the "delicate strategic balance" now prevailing that makes negotiated settlements of even secondary questions difficult because "every solution seems to be to the ad-

vantage of one or the other disputants."

All agreed that the greatest danger before the world today was that the United States and the Soviet Union might intervene on opposite sides and resort to atomic or nuclear weapons in a war between two small countries. In such a case the scientists agreed it would be "difficult to limit a local war once atomic bombs were used."

In the preamble to their statement the scientists from both East and West agreed that there were two aspects to the international problem of this age. One was technical and the other political, their statement said.

They could discuss with authority, they said, only the scientific and technical implications of atomic energy. At the same time they noted that they must take into account "the political problems which are the background to international negotiations."

The time had come, the statement said, for scientists to consider "the implications of their own work." Their views on politics, they said, were as diverse as those of other men. This made it extremely difficult for them to reach agreement on such controversial matters as the political and strategic problems their meeting here under the of the nuclear age. Nevertheless, most informal circumstances, free of the responsibility of speaking for their governments, had made it possible to define the areas of disagreement and agreement and reach an understanding of each other's opposing opinions.

The meeting, inspired by Bertrand Russell, Britain's 85-year-old philosopher, and made possible by Mr. Eaton, is to be followed by others on an even broader base. This opening session ended with a dinner last night at which representatives of the ten countries toasted the host and each other in the pledging himself to work for warmest terms, each spokesman the cause of peace.

### THE ATTENDING SCIENTISTS

Those participating in the conference were:

Prof. M. L. Oliphant, Physicist, director of the post-graduate research school of physical sciences at the National University of Australia; Dr. H. Thirring, professor of physics, University of Vienna; Dr. Brock Chisholm, of Victoria, B. C., and former director-general of the United Nations World Health Organization; Prof. John Stuart Foster, professor of physics at McGill University, Montreal; Prof. Chou Pei-yuan, vice-director of Peking University; Dr. E. H. S. Burhop, physicist, University College, London; Prof. C. F. Powell, of the H. H. Willis Physical Laboratory at Bristol, England, Nobel Prize winner in physics; Prof. J. Rotblat, professor of physics, University of London and executive vice president of Atomic Scientists Association; Prof. A. M. B. Lacassagne, Institut du Radium, Paris; Prof. S. Tomonaga, department of physics, Tokyo University; Prof. Hideki Yukawa, director of the Research Institute for Fundamental Physics, Tokyo University; a Nobel Prize winner in physics; Prof. H. Ogawa of Tokyo University; Prof. Marian Danyasz, of the University of Warsaw; A. M. Kuzin, of the Soviet Academy of Sciences; D. F. Skobeltsyn of the National Academy of the Soviet Union and director of T. N. Lebedev, Institute of Physics, Moscow; A. V. Topchlev, head of the Institute of Silicates of the Soviet Academy of Sciences; Prof. Paul Doty, Department of Chemistry, Harvard University; Prof. H. J. Muller, professor of zoology at Indiana University, Nobel Laureate in medical physiology; Prof. Eugene Rabinowitch, research professor, University of Illinois; Prof. Walter Selove, department of physics, University of Pennsylvania; Prof. Leo Szilard, physicist, collaborator with Enrico Fermi in setting up chain reaction at University of Chicago where he is now professor of physics; Prof. Victor Weisskopf, Prof. David F. Cavers, associate dean at Harvard Law School.

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