

GENERAL SCIENCE

Intellectual Freedom

This should be guaranteed but no attempt made to solve problem of military information security, London conference proposes.

By VICTOR COFMAN

Cabled from London

➤ INTELLECTUAL freedom would be guaranteed but no attempt would be made to solve the problems related to security of military information, if proposals made by Archibald MacLeish, chairman of the U. S. delegation to the United Nations conference for the establishment of world educational and cultural organizations are adopted.

This suggestion has relationship to the problems raised by the atomic bomb development and the restrictions for military reasons placed upon the announcement of results of scientific research.

Mr. MacLeish's idea seems to be that the international organization would first tackle the job of free speech and free press in the broad cultural field rather than try to solve a complex situation that is a special part of the larger problem.

British scientists are insisting that the word scientific be inserted in the title of the proposed organization and this viewpoint was presented and supported by Britain's Minister of Education Helen Wilkinson. This viewpoint is understood to have insistent support among American scientists also.

Scientists among the 300 delegates from 43 nations include: Nobelist J. F. Joliot and Dr. Pierre Auger, physicists of France; Dr. Charles Armstrong, British chemist; Dr. H. R. Kruyt, Dutch chemist; Dr. Olaf Devik, Norwegian physicist, and Dr. Ellen Gladitsch, Norwegian chemist. Dr. Harlow Shapley, Harvard astronomer, the scientist upon the American delegation, joined the conference about Nov. 10.

Interim Commission

➤ THE formation of an interim educational, scientific and cultural commission, consisting of the representatives of 15 governments, to bridge over the gap until a United Nations Educational, Scientific and Cultural Organization is fully established has been suggested by the United States delegation to the organization meeting of the UNESCO here.

Another interim commission to examine the problem of controlling atomic research was proposed by the Belgian representatives. Prof. G. Magnel, civil engineer from the University of Ghent, told me that the Belgian proposal would involve the inspection of all nuclear research laboratories by an inspection service to be set up by each government, which would then report its findings yearly to UNESCO.

Two Alternates

➤ LIVING deep underground or the complete dispersal of our population into small, widely separated villages is the only alternative to the immediate abolition of secret diplomacy and the control of atomic bomb manufacture under international authority. This is the opinion of Prof. Marcus Laurence Oliphant, British physicist who participated in the making of the atomic bomb.

Any secrets in the manufacture of the atomic bomb cannot be kept more than six months, Prof. Oliphant warned.

No scientific knowledge should or can be kept secret, resolutions of the conference of the World Unity Movement and the Council for World Airways recited after the meeting had heard from three members of the Royal Society, Sir Leonard Hill, Prof. Launcelot Hogben and Dr. Kathleen Lonsdale.

Development of atomic energy without delay and subject to international control was recommended, and the cooperation of scientists was advised to devise the best means to exploit its use under a world authority solely and fully in the interests of the world community.

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PHYSICS

Betatron X-Ray Machine Ready for Industrial Uses

➤ PUSH-BUTTON controlled betatron machines, that generate 20,000,000 volt X-rays, are ready for industrial use, Gail D. Adams, Jr., of the University of Illinois physics department, told the Marquette University's radiography symposium in Milwaukee.



GETS NEW POST—Dr. Edward U. Condon, one of the country's atomic bomb experts, is now the new director of the Commerce Department's Bureau of Standards. He succeeds Dr. Lyman Briggs, retiring director. Photograph by Fremont Davis, Science Service staff photographer.

Perfected in secret during the war, the betatron was invented by Prof. Donald W. Kerst of the University of Illinois and now a commercial model has been made for industry and medicine.

The 20,000,000 volt machine makes X-ray pictures through 20 inches of steel in 1½ hours, shows up flaws as small as 1/32 inch, produces images enlarged to three times size, and produces sharply defined photographs because of the pin-point source of the X-rays.

The commercial model is arranged for simple, inexpert operation and takes a space only five feet long, three feet high and two feet thick.

The betatron operates by accelerating electrons, the light-weight satellite particles of an atom, to a speed approaching the speed of light.

Electrons are injected into the doughnut-shaped vacuum tube and are speeded by the rising phase of an alternating current in the magnet.

They spin around inside the tube, gaining 70 volts energy at each of 300,000 revolutions, are deflected from their orbit to strike the pin-point target which gives off 20,000,000 volt X-rays.

The concentrated beam from this point has been calculated to equal the radiation from at least 5,000 grams of radium.

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