

# Meetings

## The 21st Pugwash Conference on Science and World Affairs

Pugwash is the name of a small village in Nova Scotia where, in 1957, 22 distinguished scientists from ten countries met, in response to an appeal from Bertrand Russell, Albert Einstein, and nine other leaders of world science, to discuss the urgent necessity for actions on an international scale to avert nuclear war. In the 14 years since, there have been 21 international conferences and 15 topical symposiums, all going under the name Pugwash, where scholars from many nations have met informally and unofficially to discuss ways of preventing the misuse of science and technology and of promoting international collaboration among scientists and scholars for the advancement of peace and progress.

Since 1957, Pugwash also has come to symbolize a worldwide movement of scientists and scholars aimed at nuclear disarmament, peaceful resolution of international conflicts, and the benign application of science and technology to the pressing problems of this age (1).

As an organization, Pugwash is a loose, informal collaboration among individuals through a number of ad hoc national Pugwash groups, whose activities are coordinated by an international continuing committee and a central office in London, under the direction of Pugwash's Secretary-General Joseph Rotblat of the University of London's St. Bartholomew's Medical College. The national groups arrange symposiums on subjects of general interest to Pugwash and, on a volunteering and rotating basis, host the annual Pugwash Conferences. The substance of the agenda and the detailed planning, especially for the annual conferences, is the responsibility of the continuing committee.

The national Pugwash organizations vary from country to country. In the Soviet Union (and, similarly, in most East European countries), Pugwash comes under the auspices of the Academy of Sciences; in the United States, Pugwash activities are directed by a committee at the Boston-based Amer-

ican Academy of Arts and Sciences, with the cooperation of the National Academy of Sciences' office of the foreign secretary.

Last year, the U.S. committee organized two international symposiums—one on the impact of new technologies on the arms race and a second on science, technology, and development—as well as being host to the 20th conference in Fontana, Wisconsin, in September. This year's conference was held in Romania. As described in the statement issued after the conference by the continuing committee:

The Twenty First Pugwash Conference on Science and World Affairs was held in Sinaia from the 26th to 31st August 1971, at the invitation of the Romanian Pugwash National Committee.

The Conference was attended by 97 scientists from 31 countries; in addition there were 9 observers from 5 international organizations.

The theme of the Conference was "Problems of World Security, Environment, and Development," and under this title participants discussed the following topics in five Working Groups: (1) European Security Problems, (2) Current Conflicts, (3) International Security and Further Steps towards Disarmament, (4) Environmental Pollution, (5) Economic and Technological Cooperation amongst Nations, in particular for Development. . . .

In addition, there were plenary sessions on "Water Pollution," "General Consequences of the Green Revolution," and on "The Human Problems of East Pakistan and the Refugees." Taking into account the views expressed at this last session the Continuing Committee issued an appeal which is appended [See Appendix].

As usual, the major interest of the Conference was in problems of disarmament. This was reflected in the statement from the continuing committee, half of which is devoted to a summary of the report of the working group on international security and further steps toward disarmament.

This working group considered the entire range of arms control measures now under discussion, both at the Strategic Arms Limitations Talks (SALT) and in the Continuing Committee on Disarmament in Geneva. Of SALT, the statement said:

... the negotiating parties at SALT are urged to achieve an agreement which would severely limit the deployment of ABM, preferably at the zero level. The zero level was considered to be far preferable to any other because it avoids any questions about qualitative differences and hidden growth potentials and thus removes the last vestige of any stimulus for the further arms race not only in anti-ballistic missiles (ABMs), but to a substantial degree in the field of offensive weapons also. Any possible advantages of a severely limited ABM over a zero ABM do not seem to outweigh the dangers of a continuing arms race.

The negotiating parties at SALT were also urged to achieve a meaningful limitation on offensive weapons in order to stop the arms race immediately and to make it possible to begin the process of substantial arms reduction soon after. Such substantial arms reductions may be more difficult to negotiate, but they are absolutely essential if real world security is to be accomplished. It was emphasized that, in addition to limiting and reducing numbers, it will also be important to make provision for controlling and limiting qualitative features of weapons so that the arms race cannot be simply shifted in this direction. Qualitative features include size, multiple warheads, accuracy, etc. It was suggested that one good means for accomplishing this last objective would be a severe limitation on the rate of missile test launches, including confidence launchings. . . .

Disarmament negotiations also must give attention to limiting or, better, avoiding an arms race in new areas. In this connection the problem of anti-submarine warfare (ASW) was discussed, and it was pointed out that ASW research and development aimed against missile-bearing submarines is research and development on counterforce techniques. Such efforts could be taken by either party as indicating preparation for a pre-emptive attack by the other, and thus can be very destabilizing and can stimulate further arms races in unpredictable directions. An ASW limitation would therefore greatly facilitate the achievement of agreements to reduce substantially the numbers of long-range delivery vehicles.

Considering the possibility of extending the partial nuclear weapons test-ban to include testing under ground, the working group felt that:

... progress in the development of the means for detecting possible violations has effectively removed the obstacles which once blocked the achievement of such a treaty. These means include not only seismic methods for detection and identification of nuclear explosions but also satellites and other unilateral means for collecting information. The combination of all these techniques now makes it practically impossible to conduct meaningful nuclear testing without detection.

On the other disarmament issues, the group had little to add to the arguments now being widely aired in Geneva and New York. Thus, "there was an aware-



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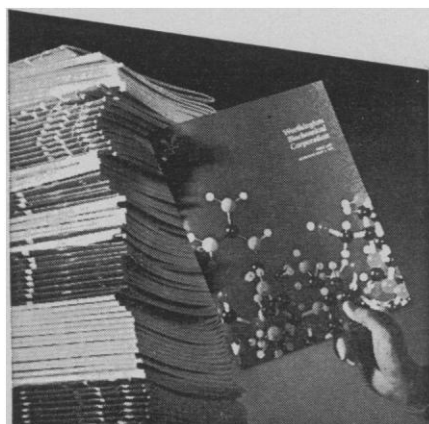
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ness that the continuing effectiveness and durability of the [Non-Proliferation] Treaty demand substantial progress in inhibiting vertical proliferation by real progress at SALT, adoption of other measures of self-restraint by all the nuclear powers, and agreement on the Comprehensive Test Ban Treaty."

Likewise, while applauding the agreement reached in Geneva on a draft treaty banning all biological weapons, the group was not able to resolve the main issue blocking an agreement on chemical weapons disarmament—"disagreement whether international verification of non-possession of C[hemical]-weapons is needed and is possible."

There was considerable discussion on the shortcomings of the present organization of disarmament talks, obviously reflecting a widespread anticipation of the imminent inclusion of China into the United Nations and other international forums—anticipation that called forth a spectrum of reactions, from enthusiasm through resignation to apprehension (2)—but also reflecting a rather widespread dissatisfaction on the part of other nuclear and near-nuclear nations with the dominating role of the United States and the Soviet Union in the disarmament talks. In the end, the group got on the bandwagon (gathering momentum from a variety of sources at the current session of the U.N. General Assembly) in favor of convening "a general disarmament conference . . . in which all interested states could participate and express their points of view."

On one issue, however, the working group on disarmament may have broken new ground. This was in advancing "A Specific Proposal for Tactical Nuclear Arms Limitation in Europe, designed to serve as a first approximation for further discussion."

a) No Foreign Nuclear Weapons in any European country. Delivery systems which are useful only when outfitted with nuclear warheads should be similarly prohibited. This in effect means denuclearization of Europe from the Rhine to the Soviet Border.

b) United Kingdom and French nuclear weapons should be limited to those now deployed, or currently in the process of being deployed. No distinction between "Tactical" and "Strategic" deployments or uses should be made in this case.

c) Soviet MRBM's and IRBM's which are located so as to be capable of striking Europe should be limited to a number equal to the total number of British and French weapons deployed on long range missiles. Similar arrangements for medium range aircraft should also be made.

d) The Non-Proliferation Treaty and the Partial Nuclear Test Ban should be

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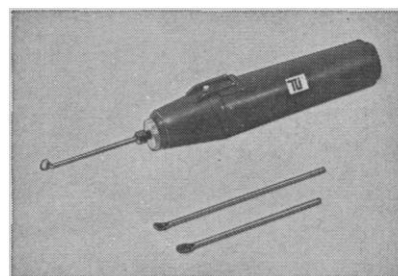
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continued in force and expanded to the extent possible. All possible political means should be used to reinforce the treaties so as to prevent any further spread of nuclear arms in Europe.

e) If these radical reductions are to be achieved, there must also be a substantial and simultaneous reduction of conventional armed forces and armaments."

Such an approach, in which nuclear and conventional disarmament in Central Europe are treated as the horse rather than the cart in a European security agreement, is in marked contrast with the more conventional approach, as expressed in the report of the working group on European security:

The prime objective of the ESC [European Security Conference] would be to negotiate an agreement between all member states under which:

1) All states in Europe agree to conduct their relations according to the following principles:

a) renunciation of the use or threat of force for the settlement of disputes, and acceptance of the obligation to settle all such disputes by peaceful means;

b) non-interference in the internal affairs of any state, and express recognition of the right of any state to choose without external interference its own social and political system;

c) recognition of the inviolability of existing borders and renunciation of territorial claims.

2) Steps would be taken to encourage co-operation on an equal basis between the European states in the field of trade, economics, science, technology, culture, information and travel aiming at the development of further political co-operation between the states.

3) There would be established a standing body or agency aiming at the development of further political co-operation between the states, which would provide, amongst other things, means for the peaceful settlement of disputes.

All of this would be a prerequisite to steps toward "a drastic reduction of nuclear and conventional forces . . . possibly accompanied by the establishment of nuclear-free zones; to be followed by the dissolution of the international military organizations of the blocs, the elimination of the remaining forces, bases, armaments and military manoeuvres on foreign soil."

Naturally, the presentation of two such different approaches engendered considerable discussion, not to speak of controversy. Although the proponents of the first scheme admitted to a number of difficulties and shortcomings—items overlooked, such as the question of the disposition of nuclear-capable naval forces, as well as serious political and psychological inhibitions—they were able to carry many of the con-

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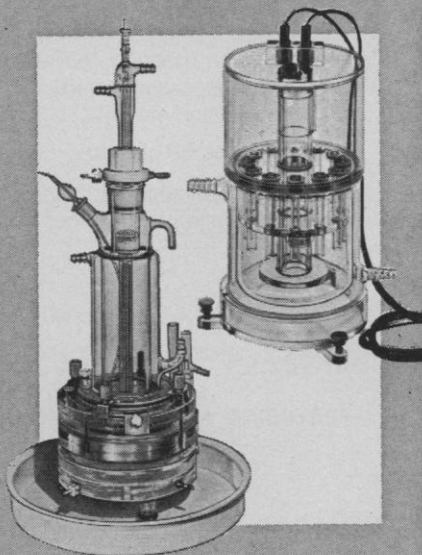
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ferees with them on the basis of a very strong feeling "that this radical approach may have a better chance of working than the traditional piecemeal attempts to ensure precise balance in every field each time a small disarmament proposal is made. Bold actions seemed to be the only practical way out of the present impasse."

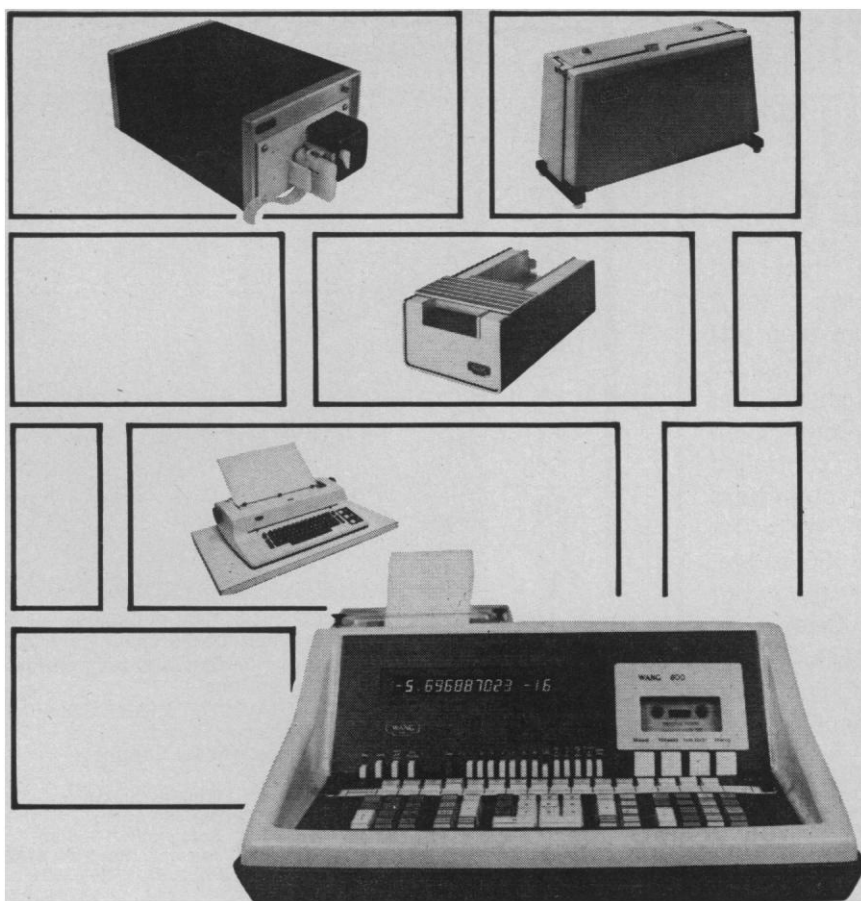
Besides such discussions of comprehensive and regional arms control and disarmament problems, as well as the inevitable (and inevitably frustrating) discussions of current conflicts, Pugwash conferences also devote an appreciable portion of their deliberations to problems of developing nations (with stress on scientific and technological problems and questions of international cooperation involving these problems) and, unavoidably now, on ecology. The former reflects the very strong feeling on the part of scientists from the developing portions of the globe that, on the one hand, their points of view are woefully underrepresented in most international forums and, on the other hand, that cooperation among scientists in developing countries, as well as with their counterparts in the developed regions, will enable these scientists to increase their influence on the decision-making processes in their own countries. On both counts, scientists from developing countries are coming increasingly to recognize in Pugwash a useful forum for promoting projects aimed at narrowing the gap between "north and south"; and they are recognizing, as well, a possibility for promoting "east-west" cooperation in the field of development.

Ecology, on the other hand, is a field in which Pugwash, like most other groups of scientists, is inexpert and greatly in need of education on what the problems really are, especially in their international ramifications. Considering that the United Nations is preparing a major conference on environmental problems next year, Pugwash scientists have felt a great need for such self-education; they have therefore discussed a number of the international aspects of pollution in last year's and this year's conferences (3).

Next September's Pugwash conference, to be held in Oxford, England, will celebrate the 15th anniversary of this unique institution. As has been the case after every quinquennial period, the 1972 conference will serve as the occasion for a searching reexamination of the Pugwash movement, its potentials, and its goals. Despite past achieve-

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ments—its pioneering and essential role in the attainment of the Test Ban Treaty of 1963, of the Nuclear Non-Proliferation Treaty of 1968, of the Ban on Biological Warfare Weapons now before the United Nations, and, indeed, of the SALT negotiations themselves—many participants feel that the problems of survival through the 1970's and 1980's require a new approach and a greatly broadened base in the world's intellectual community. Most Pugwash veterans are convinced, however, that Pugwash can be one of the most effective vehicles for enabling the world's intellectual community to face up to these problems; that if it did not exist, it would have to be invented for this purpose.

## APPENDIX

The Problem of East Pakistan Refugees—an appeal by the Pugwash continuing committee.

Recent events in East Pakistan have caused unprecedented human suffering and created a grave situation on the Subcontinent. There has been loss of life on a mass scale and millions of people have been forced to abandon their homes and seek refuge in India. The resulting tensions in the region threaten international peace and therefore demand the urgent attention of the United Nations. We appeal:

- to the Government of Pakistan to promote speedily a peaceful political settlement, refrain from actions which can make such settlement more difficult to achieve, create conditions for the safe return of the refugees to their homes and lands, and make possible the effective operation of international relief agencies among the affected population;
- to all governments to exert their influence on Pakistan to advance towards a peaceful political settlement;
- to all Governments, United Nations and other international organizations to recognize that the relief and welfare of the refugees in India is an international responsibility, and that they should, therefore, assume immediately the bulk of the financial burden; and
- to all outside countries to avoid any steps which might further aggravate the situation and, in particular, to refrain from supplying arms to Pakistan.

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## References and Notes

1. Pugwash is also the name of a pirate captain in a popular British comic strip.
2. Chinese scientists attended the first six Pugwash conferences but, since the conference held in Moscow at the end of 1960, they have been absent, although always invited. It is hoped they will resume regular participation in 1972.
3. Summaries of the reports of working groups at Sinaia will be published in *Bull. At. Sci.*, in press. Last year's summary can be found in *ibid.* 27 (No. 3) 20 (March 1971).