

July 1981

Volume 19

No. 1

Pugwash Newsletter

issued quarterly by the Council of the Pugwash Conferences on
Science and World Affairs

PUGWASH NEWSLETTER

Vol: 19

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Reports of the Pugwash Conferences, Symposia and Workshops represent the views of the individuals attending a particular meeting. Occasionally, the Pugwash Council or its Executive Committee issues official statements on behalf of Pugwash.

THROUGH BANFF TO WARSAW

The issue of the Newsletter is devoted to three of our recent meetings held in April and May, and leads up to our forthcoming Conference in Banff, and beyond (see Calendar back page). The Council session in Banff will take up the Quinquennial Conference in Warsaw in 1982, where Pugwash and organizational structure for the succeeding five years will be determined. Groundwork for that session has been provided by the Executive Committee held in Geneva in conjunction with the fourth Workshop on nuclear forces in Europe, and at the Symposium in Israel held shortly afterwards.

A few words about the reports of the April and May meetings. As you will note, we are continuing the practice of recent meetings in avoiding the time-consuming and often sterile task of trying to reach a comprehensive agreed statement by the participants. Instead, agreed verbatim statements have been left for the most part to the prerogative of the Executive Committee (or Council, at Conferences) when a statement for the public was felt to be indicated, and a personal account of a particular meeting has been provided by one or two participants to inform our readers of the general content of the discussions which took place. We have not, however, as yet solved the problem of how to deal with the frequently futile battle of words in the drafting of Working Group reports which takes place at our Conferences. Perhaps there is no completely satisfactory solution to this problem, and we shall have to continue living with whatever compromise can be achieved (see, however, Peierls and Schaerf p.37).

A report on the Eighth Workshop on Chemical Warfare (Geneva, 2-4 April 1981) was published in the preceeding issue of the Newsletter. On page 3 of this issue you will find the personal impressions of two of our veteran participants in these Workshops, Julian Perry Robinson and Karlheinz Lohs, which fill in details of the discussions held in April. A fine cocktail reception was given for the group and guests by the Brazilian Ambassador to the Committee on Disarmament, Celsio Souza e Silva.

The fourth in a series of Workshops on nuclear forces in Europe, extended to the linked issue of resumption of SALT negotiations, was held in Geneva on 23 and 24 May (p. 6). As with previous Workshops on this subject, a highly expert group of individuals participated. Discussions were spirited and realistic, as Bernie Feld's account indicates (p. 12). Let us hope that some of the ideas advanced take root in the minds of decision-makers without the undue delay that would neutralize the effectiveness of some of the suggestions made, in particular for unilateral initiatives. Again, we are beholden to the Swiss Association of Friends of Pugwash for financial support for the meeting. We are especially indebted to H. Dudley Wright for the splendid reception and dinner for the group held at his home, which was also attended by many of the leading supporters of the Association.

The Symposium on the Future of Pugwash was held at the well-known Weizmann Institute of Science in Rehovot, Israel, on 26-30 May. We met in the charming former home of Chaim Weizmann - a distinguished chemist, and the first President of Israel - which has now become a shrine. Shalheveth Freier and his colleagues spared no efforts, uniformly successful, in making our stay comfortable and interesting. Most of the participants were veteran Pugwashites so that questions of "what and how" concerning our future were reviewed in the light of much experience. As can be expected, views were often very divergent, but consensus was reached on many basic issues of policy and organization (p. 15). The brief account of Patricia Lindop and Shalheveth Freier (p. 19) gives some flavour of the discussions.

Thus, we are well on the road to Warsaw. All Pugwashites should reflect on our problems and choices for the future and discuss these in their national groups in order to ensure our making the best possible decisions in August 1982. Now - Banff.

M.M. Kaplan

PUGWASH RECEIVES THE UMBERTO BIANCOMANO EUROPEAN PRIZE

The above prize awards were started nineteen years ago by a national committee, with headquarters in Milan, to honour a humanist statesman in Italian history. The prizes are given annually to leading cultural, political and artistic personalities and organizations in recognition mainly for their contribution to European cooperation. The roster of past awards is a distinguished one, and this year, in addition to Pugwash, includes Alfred Kastler, Nobel laureate in physics, Max Bill, Swiss architect and artist, Gaston Thorn, president of the European Economic Community and a former president of the United Nations General Assembly, Fernand Braudel, historian of the College de France, Robert Triffin, Belgian economist, Oscar Ghez, founder of the Petit Palais art museum in Geneva, and Gerald Genda of Geneva, a well-known watch designer.

A ceremony for the awards took place at the Petit Palais in Geneva on 27 June and was attended by the laureates and officials of the city and canton of Geneva.

Leopold Senghor, former President of Senegal and an honorary Biancomano laureate, transmitted a moving appeal for help to the Third World, and for renewed efforts for peace.

The award consists of a bronze sculpture designed by the Italian sculptor Lucio Fontana, and a diploma with a citation for Pugwash's contributions towards peace.

Dr. Kaplan conveyed the greetings and thanks of Professor Dorothy Hodgkin and accepted the award on behalf of Pugwash.

RECENT PUGWASH PUBLICATIONS

"Science and Ethical Responsibility"

Proceedings of the U.S. Student Pugwash Conference, University of California, San Diego 1979.

Edited by Sanford A. Lakoff. (Addison-Wesley Publishing Company 1980).

"New Direction in Disarmament"

Monograph of the 35th Pugwash Symposium held in Racine, Wisconsin, June 1980.

Edited by William Epstein and Bernard T. Feld. (Praeger, 1981).

IMPRESSIONS ON THE EIGHTH WORKSHOP ON
CHEMICAL WARFARE

by Julian Perry Robinson and Karlheinz Lohs

It has always been the practice in this series of Workshops of the Pugwash Chemical Warfare Study Group (PCWSG) for a final consensus report to be adopted by each Workshop setting out points on which it seemed worth recording agreement. This time round, however, we put less of our time into this activity and more into substantive discussion, so the report from the 8th Workshop, which was published in the April 1981 issue of Pugwash Newsletter, is therefore shorter than earlier ones, and does not reflect so much of the proceedings. The purpose of the present note is to convey a fuller impression of what went on at the meeting. As such it is, of course, no more than the personal views of two participants.

The 8th Workshop was larger than previous ones, mainly because it was the first time the PCWSG had met in Geneva. The Committee on Disarmament (CD) there has long taken an interest in our work and, taking into account the dates of our Workshop had arranged its Spring agenda so that chemical warfare would be under discussion at the time of the group's presence in Geneva. Several PCWSG members serve as technical advisers to their countries' CD delegations, and we were pleased to welcome other such advisers present in Geneva for the CD into the group. This fortunate coincidence of interest and timing meant that the Workshop was informed of the exact state of the intergovernmental proceedings and could thus identify more precisely topics on which Pugwash scientists might usefully contribute. The spread of geographical representation on the PCWSG also increased, including scientists from Australia, Belgium and China, thus bringing the total number of nationalities in the PCWSG up to 25.

There were three principal items on the Workshop agenda: a review of world events since the 7th Workshop (Stockholm, June 1979) for their bearing on the prospects for the projected Chemical Weapons Convention and for its content; experience gained in the practicalities of destroying chemical-warfare agents and munitions; and the question of on-site inspection as a verification technique.

As to the first of these items, one of the Workshop papers had summarized and documented a variety of happenings, drawing attention, in particular, to the slow pace of progress towards intergovernmental agreement on chemical disarmament as compared with the now seemingly accelerating pace of chemical armament; and it recorded the reporting, since June 1979, of the actual use of chemical weapons in no less than eight different conflicts. These are developments which give urgency to Pugwash and all other efforts in this field. The construction in America of a factory for producing binary nerve gas munitions which now (after the vote in the US Senate of 21 May) looks certain to proceed, may have brought us to the verge of a new chemical race. The allegations of use of chemical weapons - which have, however, been denied by the authorities concerned - are especially ominous for their suggestion that the CW arms-control regime which we have already (based on the 1925 Geneva Protocol and associated customary law), let alone the prospects for the strengthened regime we are seeking, may be crumbling.

Julian Perry Robinson, Science Policy Research Unit, University of Sussex, Brighton. UK.
Karlheinz Lohs, Academy of Science Research Unit for Chemical Toxicology, Leipzig, GDR.

The UN has recently established an expert group to investigate the allegations of chemical warfare. Some of the people involved in this undertaking participated in the Workshop, and we discussed ways and means in which Pugwash might lend assistance, either collectively or as individual scientists. This discussion broadened into a more general one on the manner in which scientific expertise could be brought to bear on all types of CW verification activity, not only concerning alleged uses of CW weapons but with respect to the provisions of a CW disarmament treaty. From the way in which the intergovernmental talks are proceeding, it looks as though complaint or challenge procedures will become a major instrument of verification. Should procedures ever come to be utilized, it seems unlikely that the nature of the initial evidence available would be anything other than fragmentary, open to conflicting interpretations and, in some aspects, highly technical. Because it would also carry a high political charge, the need would be great for objective scientific assessment. On this, the point was made that political people, by and large, are not very good at differentiating fact from opinion in technical matters; nor, very often, do they have sufficiently good channels of communication with the appropriate scientific communities to ensure that they receive a sufficient spread and depth of advice. The idea, then, of a technically competent expert group acting as a filter for the protection of states-party to the future CW Convention - and, indeed, for the protection of the Convention itself - against frivolous, ill-considered or malicious allegations of violation seemed to make a lot of sense. It could provide an intermediate option between diplomatic *démarche* and the institution of formal complaints. Its value would depend heavily on the manner in which the group could be convened, how it would be constituted, and its method of reporting.

These modalities were themselves, it was generally recognized, highly political matters, ones on which the Workshop was neither especially competent nor inclined to put forward specific recommendations. But their bearing on the main agenda of the Workshop - the circumstances under which requests for international on-site inspection could be made or could be rejected - was considered in some detail. In the intergovernmental talks, consensus seems to be developing around a concept in which states-party make public declarations about their stocks of CW weapons, about their means of production for them, and about the procedures and schedules they intend to adopt for eliminating any such stocks or means they might declare. These declarations, and perhaps others too (on, for example, civil commodities or production facilities that might have significant utility in chemical warfare), could serve to focus the verification arrangements in such a way that any international on-site inspection that might be necessary - and the Workshop Report recorded agreement that some such inspection would be necessary - could be held to a minimum. Whether this would be effective, that is to say sufficiently reassuring to governments doubtful about the treaty intentions of potential adversaries, would clearly depend on the content and timing of the declarations and, in the case of the demilitarization declarations, on the degree and continuity of access allowed to foreign observers of the actual destruction operations. In considering this last matter the Workshop had arrived at the very heart of the present intergovernmental negotiations, but had little to offer that was not already very familiar within the Geneva Disarmament Committee. There the present situation is one of suspended animation, the delegations waiting with increasing impatience for the Reagan Administration to make up its mind about CW arms control and brief its representatives accordingly.

There would, of course, be inadequacies in a verification system in which the techniques employed were used only to verify whatever declarations states-party might choose to make. And such a system would, moreover, be discriminatory against states-party lacking resources in 'national technical means' for detecting stockpiles or facilities that might not have been declared. This is a problem which the PCWSG has often

considered in the past. Although it was not on the agenda of the 8th Workshop, participants did, however, discuss the possibilities of existing international monitoring systems (in the areas of, for example, air pollution, public health and water quality) and of existing national control systems (as regards, especially, environmental protection, occupational hygiene, and the licensing of chemical production) for exploitation, expanded if necessary, for CW verification purposes.

One question arose which, perhaps more than any other, encapsulates the present verification dilemma. How can a CW disarmament regime be made to cope with the situation in which a country that is widely but erroneously believed by its potential adversaries to possess a large and modern arsenal of CW weapons has declared a stockpile consisting only of rather small supplies of, say, World War II vintage weapons? Did the only remedy lie in provisions for massively inspection procedures? Or could some sort of deception-proof confidence-building scheme be envisaged that would reduce the credibility of misperceptions? Agreement to the continuing presence of foreign observers at stockpile-destruction operations could, it was felt, go a long way towards generating the requisite confidence.

Thus, as has so often been the case in the work of the PCWSG, the Workshop found itself grappling with questions which, while having a strong scientific or technical element, were in fact essentially political or diplomatical. Some participants preferred to steer well clear of them, seeing politics as no business of Pugwash. Others seeing one function of the PCWSG as a forum for private and noncommittal discussion of conceivable diplomatical initiatives, did not, and proceeded, further, to suggest possible future areas of negotiation. These included the idea of chemical-weapons-free zones; of regional CW agreements that might later be consolidated within a global treaty; of a moratorium on production of supertoxic chemicals; of certain specific confidence-building measures applicable in the CW field but forming part of a wider strategy of confidence-building in Europe, such as has been mooted in Madrid, thereby bringing wider benefit. It has to be said that the number of strictly technical matters that still, after a decade of CW-disarmament enterprise in Geneva, require clarification is not large; and that although such clarifications are a necessary and onerous task that must be performed before a treaty can be finalized, they are hardly rate-determining yet in the process of reaching agreement. They include such matters as the standardization of toxicity measurement and the identification of precursors and reactants that could be involved in CW-agent production. These have long been recognized as possibly useful subjects for the future work of the PCWSG.

Other such subjects that came up during the Workshop included the roles that new analytical techniques could play in verification. This has been a long standing interest in the PCWSG, especially with regard to near-site and off-site inspection.. A team sponsored by the Finnish Government and the University of Helsinki has been studying (and developing) the available range of techniques in admirable detail. Now that that work has advanced so far, the Workshop felt that the PCWSG could usefully examine its full practical implications, taking the 'blue books' submitted by the Finnish Government to the Disarmament Committee as points of reference.

And finally there was the perennial question of toxins - those diverse naturally occurring poisons which some diplomats evidently believe fall into a well-defined scientific category, and which are subsumed, at least in principle, within the scope of the 1972 Biological Weapons Convention. In view particularly of the verification needs which these substances and related toxic bio-technological-process products could generate, some participants felt that it was high time the Disarmament Committee explicitly subsumed them within its working definition of chemical-warfare agents, and thereby also within the scope of the projected CW Convention. Consideration of possible future CW agents remains on the list of topics that have been recommended for PCWSG workshops.

FOURTH PUGWASH WORKSHOP ON THE RESUMPTION OF NEGOTIATIONS ON
STRATEGIC ARMS LIMITATION AND NUCLEAR FORCES IN EUROPE

23 and 24 May 1981, Geneva, Switzerland

AGENDA

1. Possible bases for the resumption of negotiations on strategic arms limitation
2. Specific measures and terms for a NATO/WTO agreement to stop and reverse the race for nuclear weapons in Europe.

PARTICIPANTS

General (ret.) Wolf Graf von Baudissin, Director, Institute for Research on Peace and Security, Hamburg, FRG

General (ret.) H. de Bordas, Chairman, Foundation for Studies on National Defence, Paris, France

Dr. Anders Boserup, Adviser on Disarmament, Copenhagen, Denmark

Prof. Francesco Calogero, Professor of Theoretical Physics, University of Rome, Italy

Prof. Marian Dobrosielski, Deputy Minister for Foreign Affairs, Warsaw, Poland

Prof. Christian Dominice, Director, The Graduate Institute of International Studies, Geneva, Switzerland

Prof. Paul Doty, Director, Center for Science and International Affairs, Harvard University, Cambridge, Mass., USA

Prof. William Epstein, Adviser on Disarmament, New York, USA

Prof. B.T. Feld, Professor of Physics, M.I.T. Cambridge, Mass., USA

Prof. Jacques Freymond, Chairman, Centre for Applied Studies in International Negotiations, Geneva, Switzerland

Prof. E.E. Galal, Convener of the Pan African Pugwash Group, Cairo, Egypt.

Prof. Dorothy Hodgkin, President of Pugwash, Nobel Laureate, UK

Lt. Gen. Tønne Huitfeldt, Commander Allied Forces, Bodø, Norway

Dr. M.M. Kaplan, Director-General of Pugwash, Geneva, Switzerland

Prof. Peter Klein, Institute for International Politics and Economics, Berlin-Adlershof, GDR

Mr. V.I. Kobyshev, Central Committee of the Communist Party, Moscow, USSR

Dr. R.J.H. Kruisinga, former Minister of Defence Netherlands

Acad. M.A. Markov, Academy of Sciences, Moscow, USSR

Prof. Maciej Nalecz, Chairman of the Pugwash Council, Warsaw, Poland

Dr. Vladimir Pavlichenko, Academy of Sciences, Moscow, USSR

Prof. J. Rotblat, Emeritus Professor of Physics, University of London, UK

Dr. Jean-Pierre Stroot, Institute of Nuclear Sciences, Brussels, Belgium

Prof. Eberhard Schulz, Deputy Director, German Institute for International Politics, Bonn, FRG

Prof. Edward P. Thompson, Historian, Worcester, UK

STATEMENT BY THE PUGWASH EXECUTIVE COMMITTEE ON THE FOURTH WORKSHOP

The Workshop was attended by twenty-four participants from thirteen countries in their personal and unofficial capacities.

The Committee is seriously concerned at the present deadlock over a treaty to limit strategic nuclear weapons, and the danger of a renewed nuclear arms race in Europe. We stress the urgency for the rapid resumption of negotiations both in strategic arms limitation (SALT) and on the limitation of nuclear forces in Europe. In the meantime, the climate for negotiations would be greatly improved by unilateral actions on the part of the USA and USSR to halt the deployment of medium range nuclear weapons in Europe. There is a large scope for such initiatives in view of the grossly excessive level of armaments available to both sides.

We emphasize that the erosion of security for each party resulting from a continuation of the present trend, characterized by an escalation of weapons development and deployment, constitutes a serious danger. We reaffirm the conclusion of our previous meetings in this series that negotiations would be greatly facilitated by a determination of the parties involved not to take any practical steps during the preparations for negotiations, and during the negotiations themselves, that would increase the present level of nuclear forces in Europe.

LONG RANGE THEATRE NUCLEAR FORCE DEPLOYMENTS IN EUROPE

A background paper by F. Calogero

This is the fourth Pugwash Workshop on this theme.

The decision of the Pugwash Executive Committee (December 16th, 1979) to convene the first Workshop was motivated by the NATO decision of December 12th, 1979, and by the resulting crisis in East-West relations. The meeting took place in January 19-20, 1980, in the aftermath of the Soviet intervention in Afghanistan, and the discussion focussed mainly on this issue. (See Pugwash Newsletter, vol. 17, No: 3, January 1980).

The second Workshop took place April 11-13, 1980. It was then possible to discuss more specifically the current and envisaged deployments of Long Range Theatre Nuclear Forces (LRTNF) in Europe. For instance, in a paper by J. Rotblat and myself, the following two criteria for an agreement on nuclear forces in Europe were proposed;

- A. No deployment by NATO in Europe of nuclear missiles capable of hitting the heart of the Soviet Union
- B. No deployment by the Soviet Union of a force that includes many delivery vehicles with accurate nuclear warheads.

The Workshop urged the resumption of negotiations and proposed that, during the preparation of the negotiations and during the negotiations themselves, both sides should agree not to take any practical steps that would change the present balance of nuclear forces in Europe. (See Pugwash Newsletter, vol 17, No: 4, April 1980)

The third Workshop took place December 6-7, 1980. It was convened to explore in some detail the possibility of an agreement acceptable to all sides (Agenda: Terms of a NATO/WTO Agreement Aimed at Stopping and Reversing Deployment of Nuclear Forces in Europe). For instance, in a background paper prepared for that meeting (and written before the American elections) I suggested, as a tentative ground for discussion,

the following terms for a preliminary simple agreement:

"The Western side should suspend immediately the development of any cruise missile with a range over 600 km, and undertake not to develop (nor produce) any such cruise missile. This would of course imply that no such weapon would be deployed in Europe.

The Soviet side should undertake that the introduction of the SS20s yield no increase in the total number of warheads deployed on intermediate range missiles. This would presumably lead to the elimination of all SS4s and SS5s and to an upper limit (in the range 150-200) on the number of SS20s, thus implying a more or less immediate halt to their production.

Moreover, the Soviet Union should also undertake not to develop any cruise missile with a range in excess of 600 km, this being an obvious counterpart to the analogous Western commitment".

This and other proposals were discussed during the Workshop, but of course the change of administration in the United States that was then in progress excluded the possibility to map out in any detail what the terms of an agreement acceptable by all sides might be. The Workshop urged once again the resumption of negotiations (after the non-committal sessions held in Geneva in October and November 1980) and reiterated the recommendation "not to take any practical steps during the preparation for negotiations, and during the negotiations themselves, that would change the present level of nuclear forces in Europe". (See Pugwash Newsletter, vol. 18, No: 3, January 1981).

The Pugwash Executive Committee has convened this fourth Workshop with the hope to contribute thereby towards the achievement of an agreement to stop and reverse the impending novel round of the race for nuclear weapons in Europe.

In this paper I will briefly review the more important recent events relevant to our agenda. I will also outline some thoughts relevant to our discussion, refraining however from any repetition of the ideas aired in the preceding Workshops, much as I consider them still valid and topical.

1. POLAND

The most important recent events in Europe are of course the political developments in Poland. So far, they have indicated that the Polish regime is highly viable. If things are allowed to develop without external interference, there is justified hope that a much healthier situation will emerge in Poland, in Eastern Europe, and in fact, all over Europe. Indeed, the capability to adjust to popular demands will eventually stabilize the political scene in Eastern Europe and at the same time it will favour a process of reapproachment and détente with Western Europe. The Soviet Union has little to lose from such developments, and a lot to gain by joining in the process.

It is possible that such a positive and optimistic assessment is not universally shared. On the other hand, nobody can reasonably belittle the consequences of an armed intervention by the Soviet Union in Poland. Aside from the immediate military and moral problems associated with the bloodshed that would be caused by such a move, and the risk of escalation, there would result a dramatic break in East-West relations. The international scene would return to the cold war atmosphere with, in addition, the sure prospect for the Soviet Union to alienate altogether large sectors of the political Left (for instance, the Italian Communist Party). Any hope of arms control would have to be shelved, perhaps for a whole generation, as well as any possibility of cooperation and collaboration in the economic, scientific and technological sectors. Yet we all know that only an eventual transition to a collaborative mood offers hope to avoid catastrophe - the destruction of Europe - that hangs over our heads as a permanent threat as long as the foundation of European security is nuclear deterrence, namely, the risk that any

conflict may escalate to a nuclear war.

Let me emphasize that these considerations are not reported here to lend credence to coercive threats, but merely as objective predictions - predictions that it would be unwise to ignore, since there can be little doubt that the consequence I have outlined would indeed come to pass, for they would result not so much from preplanned policy decisions of governments, as from the pressure of a public sentiment that no government could afford to ignore.

An important element of the recent events is a surge of Polish patriotism. This is traditionally antagonistic (for obvious historical reasons) both to Russians and to Germans. I submit this fact has a positive connotation for European security. For whatever the developments in Poland - and there is absolutely no intention by Solidarność to change the foreign policy alignment of Poland - this fact implies the Soviet Union may remain assured, for the indefinite future, of the contribution by Poland to the defence of Eastern Europe and Russia, in the (most unlikely) event of a military threat from Central Europe. (If German troops ever enter into Poland, they may be sure to find a stiff resistance!). Thus, the Polish events do not justify the Soviet Union worrying of a weakening of her defensive military posture.

On the other hand, in the framework of a military aggression from the East to Western Europe - the preferred, if unlikely, scenario of NATO military analysts - the Polish events imply a substantial weakening of the military strength of the Warsaw Treaty Organization (WTO), since at least some doubts are justified about the willingness and unanimity of the Polish nation to take part in such an enterprise. This is an important consideration that bears on the arguments advocating a strengthening of the nuclear defence of Western Europe to match an alleged, overwhelming, superiority of WTO forces in the context of a conventional conflict.

2. THE SOVIET AND OTHER PROPOSALS

The Soviet Union is now bent on a vocal "peace offensive". For all the propagandistic elements this campaign entails, it would be folly for the West to reject the olive branch that is proffered, without engaging into a serious exploration of the substance of the proposals that are put forward.

It is true that no termination of the military presence of the Soviet Union in Afghanistan is in sight. It is also true that the current proposals have been late in coming (see below). Yet progress in arms limitations would be advantageous not only to the Soviet Union and the WTO, but to the United States and NATO as well. In particular, in the European theatre both camps have much to lose - in terms of outright degradation of their security - from the current, envisaged and prospective deployments of Long Range Theatre Nuclear Forces (LRTNF). It is evident that the planned deployments of Pershing II and Ground Launched Cruise Missiles (GLCM) by NATO in Europe constitute a disturbing threat for the WTO countries, and in particular for the Soviet Union. No less disturbing is, for the NATO countries, the prospect of an open-ended continuation of the deployments (one per week!) of Soviet SS20s. And even more unpleasant is the prospect of the development and deployment of cruise missiles by the Soviet Union. But who can reasonably doubt that these events will eventually come to pass, unless there is an arms control agreement to cancel the planned NATO deployments (at least the GLCMs), and to commit the Soviet Union to limit severely the procurement of SS20s and not to develop and deploy strategic cruise missiles (say, with a range over 600 km).

The major proposal by the Soviet Union concerning LRTNF in Europe has been formulated by Brezhnev in his opening speech at the 26th Congress of the Soviet Communist Party (Moscow, February 23rd 1981). It offers a moratorium on the deployments of novel medium range nuclear missiles in Europe, including the SS20s and

the novel NATO LRTNF (Pershing II and GLCM), and in addition the US Forward Based Systems (FBS). Such a moratorium should enter into force immediately, and would provide the proper environment for negotiation aimed at the limitation and reduction of LRTNF in Europe.

The inclusion of FBS in the Brezhnev proposal greatly complicates matters, because a moratorium should be simple. But one might well imagine the FBS component of the proposal to have been introduced mainly as a bargaining chip.

I think it would be in the best interests of the US and NATO to accept the Brezhnev proposal (possibly simplified by the exclusion of any reference to FBS), but I am afraid it is unlikely to happen. Indeed the moratorium has been already officially rejected by the US administration and by NATO.

The matter deserves, however, a more detailed analysis. Let me begin by asking why the idea of a moratorium was not acceptable to the Soviet Union before the NATO decision of 1979. What our Soviet colleagues were telling us then was that the concept of a moratorium was unbalanced, since it involved an effective limitation for the Soviet side (the interruption of the ongoing deployment of SS20s) but no correspondingly operative limitation for the NATO side (who at the time had no program of LRTNF deployments in progress, or even officially planned). In the myopic framework of strategic analysis, the argument appeared sound. The result is now plain: most probably in a few years 108 Pershing II and 464 GLCMs capable of striking at the heart of the Soviet Union will be deployed in Western Europe. In the meantime, the Soviet Union may well have deployed hundreds of SS20s, targeted on Western Europe. But will the security of the Soviet Union have been enhanced, or decreased, after all these deployments have come to pass?

On the other hand, let us suppose the moratorium proposed now by Brezhnev were accepted by the Western side (as I have advocated above). Then, in the framework of strategic analysis those who, within the Soviet decision making system, were opposed to the acceptance of a moratorium two years ago, would be proven right, since the goal to prevent the Western deployment would then be achieved with the Soviet Union having in the meantime procured perhaps a hundred more SS20s.

The perverse logic of the situation is highlighted by noticing that if instead no agreement is reached (as I have predicted above), and the NATO LRTNF deployments come to pass, the resulting sense of insecurity and the perceived need to 'respond' will again enhance, within the Soviet decision making system, the influence of the 'hawks' who advocate novel weapon developments (including certainly a major technological effort towards an operational strategic cruise missile) and more deployments - irrespective of the fact that these same advisors may have been responsible for excluding the idea of a moratorium two years ago, when it might have effectively preempted the NATO decision to deploy the Pershing II and the GLCMs.

The conclusion of this brief analysis is that the advocates of restraint do not have much chance of achieving a determining influence on final policy decisions, especially in an arms control context.

Much the same analysis applies in the Western context. Indeed, here the debate is somewhat more visible and the workings of the perverse mechanism I have outlined are quite evident. In the past, a glaring example has been the unwillingness to restrain by agreement the technological development of Multiple Independently Targetable Re-entry Vehicles (MIRV). Those same people who opposed restraint point now to the threat represented by Soviet Mirving. And rather than being held responsible for having opposed any attempt to prevent this development (by the only available means, namely the conclusion of arms control agreement), they acquire additional influence on decision-

makers, and also on public opinion, by advertising that threat. The same story will recur with the introduction of the strategic cruise missile (moreover, the arms control community in the United States has been less than unanimous in recognizing this as a major danger - a serious mistake, in my opinion). The prevalence of the myopic idea of a balance will, I am afraid, prevent any acceptance of an agreement that would 'sanction' Soviet superiority in intermediate range nuclear missiles in the European theatre, in spite of the fact that Western Europe had lived with this specific imbalance for some twenty years.

In conclusion, this analysis suggests that there is little hope in the traditional arms control approach. And under the present circumstances few will quarrel with such a conclusion, for all its pessimism. The basic problem is the apparent inability of decision makers and also of public opinion to take the long view: to recognize that the attempt to score the maximal possible gain in every negotiation is in fact self-defeating, that the obsession with the idea of a precise balance of forces is inapplicable and indeed plain silly in the face of the preposterous overkill capabilities available to both camps. In the meantime, the exclusive reliance on a quantitative and qualitative escalation of weapon deployments brings about a steady degradation of security that is now approaching a critical stage, as witnessed by the attempts to rehabilitate the idea of 'limited' nuclear war as a feasible option. Incidentally, the recognition of such a degradation commands a very ample, almost unanimous consensus, encompassing 'hawks' and 'doves' alike. And a sad symptom of the situation is the fact that so many decision-makers issue dire warnings to humanity as to the catastrophic course we are running, but they do this (from Eisenhower to Carter, from Krushchev to Mountbatten) only after they are out of office, or just as they are leaving it.

If the traditional arms control approach is bankrupt, i.e., ineffective to stop the continuation of the arms race, and even sometimes acting as a stimulant rather than a restraint, it is incumbent on us to search for alternatives. This Workshop, however, is probably not the proper occasion to go into this in detail, since it is presumably preferable that our present scope remains focussed on the concrete and immediate steps especially relevant to the European scene.

3. OUR TASK IN THE PRESENT SITUATION

Let us then return to the specific issue of European nuclear deployments. For all our scepticism on the chances of reaching an arms control agreement soon enough to prevent the escalation of current and perspective deployments, it is our task, both within and outside Pugwash, to work towards this goal. In particular, at this Workshop we should once more review what the terms of an acceptable agreement might be and, most importantly, what is the preferred route to achieve such an agreement. In this connection let me re-emphasize that, as time goes by, the deployments of the SS20s continue and the development of the Pershing II and the cruise proceeds (and the expiration of the SALT II Protocol approaches; this is, of course, not a binding Treaty, yet it is an important document, having been signed if not ratified by both sides). Hence the need for an agreement to interrupt this trend, an agreement that should be achieved quickly and which should therefore be rather simple. It is rather obvious what must be traded: from one side, the SS20s (and the eventual development of strategic cruise missiles); from the other side, the Pershing II and the cruise missile. The formula I suggested at our previous meeting focussed on the Western side - on the GLCMs, or rather, more generally, on the cruise missile as a weapon system. I continue to believe such a formula has merit, since I view the introduction of the cruise missile as a major danger for international security, and I therefore consider a high priority interest for both Superpowers to impede this development if they can (but I have little hope in this respect). Other formulae might also be envisaged, and this Workshop is certainly an appropriate occasion to discuss them. What should be kept in mind is that the pros and cons of any formula are to be measured not only against those of a different formula (indeed, a more convenient one can always be easily invented) but also against the predictable consequences of the lack of any agreement.

Let me end by noting that the US Administration and NATO have now expressed their willingness to resume negotiations with the Soviet Union on European LRTNF. Although the slow pace that appears to characterize the preliminary steps aimed at reactivating this negotiation is unsatisfactory, this decision constitutes welcome progress, especially since one hopes it signals a definite change of trend. In any case these very recent developments underscore the topicality of our Workshop and should spur us to scout in detail, through a frank and, if need be, a completely discreet discussion, the route towards an effective agreement.

AN ACCOUNT OF THE WORKSHOP

by B.T. Feld

The main problems discussed at the Workshop were the limitation of strategic weapons and the current and envisaged deployments of medium range nuclear missiles in Europe. The position of the new US administration on strategic arms control matters was described, to the extent it is already clear. The drastic change in the attitude of the USA with regard to SALT II, arising from the change of administration, was noted to have cast a shadow on the prospects of future negotiations.

However, it was also mentioned that the new US administration, in the spirit of a fresh start and on the basis of a recognition of the excessive overkill capabilities available to all sides, might eventually come round to proposing substantial reductions of strategic weapons. The need was noted for appropriate preparation for such an eventuality so as to avoid any misunderstanding that might cause an unjustified hasty rejection. The role of Pugwash in such preparations was emphasized.

There was a consensus that the level of armaments has grown beyond any reasonable justification. In particular, the recent suggestion by George Kennan was mentioned that the USA and USSR should start by an immediate cut of 50% of their strategic forces. The fact was also emphasized that even greater cuts, e.g., by a factor of 10, in strategic nuclear forces would still leave much more than is required for a minimum deterrence posture, so that these reductions could very easily be agreed upon if there was the political will to do so.

Such reductions, while still leaving more than enough weapons to satisfy any needs for mutual deterrence against the initiation of nuclear war, would relieve the current threat of total nuclear annihilation that hangs over mankind. Furthermore, limitations on the availability of nuclear arms would greatly reduce the pressures for the adoption of such dangerous delusions as the doctrines of 'limited' or 'winnable' nuclear wars.

It was noted in this context that there is great scope for unilateral moves by both sides. Such actions would promote the security of all, especially if they succeed in reversing the present trend, characterized by a qualitative and quantitative escalation of strategic weaponry and by a parallel erosion of security.

The issues of nuclear weapon deployments in Europe were discussed in considerable detail. If no agreement is reached within the next few years, hundreds of additional missiles will have been deployed by both sides, a highly undesirable development. Some participants, however, stressed the essentially political and symbolic role that these deployments play in the European context, and the consequent difficulties of reaching an agreement. The recent proposal by President Brezhnev was therefore welcomed for a moratorium on new deployments to facilitate the initiation and success of negotiations.

The readiness of the USA and NATO to enter into negotiations with the Soviet

Union on European nuclear weapons was also welcomed, although some concern was voiced that this decision was undertaken mainly for cosmetic reasons. Regret was also expressed over the slow pace that appears to characterize the onset of negotiations.

The relevance to European security of recent Polish developments was briefly mentioned. It was pointed out that these are essentially of a domestic character, and that it is desirable that they should maintain this character.

The recent emergence of popular opposition in Western Europe to the new deployments of nuclear missiles was noted. Some expressed their support of this development, and their conviction that the strength of public opposition will make it practically impossible for the envisaged deployments in Western Europe to come to pass. This would be especially likely if there took place a dramatic unilateral step by the USSR as, for example, a time-limited moratorium on further deployment of SS20 missiles, whose continuance would be predicated on agreement for reciprocated restraints in projected NATO deployments. Others expressed their worry at the unsymmetrical fashion in which such public pressures affect the Western and Eastern parts of Europe. The possibility of a popular backlash resulting in the emergence of more hawkish decisions in Western Europe was mentioned in this connection.

There was a brief discussion of the desirability and technical feasibility of banning cruise missiles.

Many of the participants voiced a positive evaluation of the usefulness of the Workshop and recommended a continuation of this activity. While it was generally considered premature to indicate a definite date, it was suggested that one might tentatively aim at another meeting towards the end of this year.

ERRATUM - Klaus Gottstein (April Newsletter)

Due to a typing error two lines were omitted in the Concluding Remarks by Klaus Gottstein printed on page 121 of the April 1981 (Vol. 18, No. 4) issue of the Pugwash Newsletter. The respective section should have read: "One of the papers contributed to this Symposium called attention to the different vocabularies used by the East and the West in CBM discussions. It is very important to learn each other's vocabulary in order to avoid misunderstandings. The term "non-use of force", e.g., has very different meanings in Eastern and in Western dictionaries. We must realize that for the USSR the support of friendly liberation movements using force against hostile governments, and the support of friendly governments using force against hostile liberation movements is always justified. Force is only forbidden against governments and movements friendly to the USSR. I say this without cynicism. This is just the Soviet doctrine which it is good to learn and in spite of which, or rather because of which, confidence building measures have to be applied, i.e. measures creating clarity and removing misunderstandings....."

38th Pugwash Symposium: "THE FUTURE OF PUGWASH"

26-30 May 1981, Rehovot, Israel

AGENDA

- A. Pugwash Spirit and Goals
 - 1. History of Pugwash
 - 2. Choice of themes and commitment to action
 - 3. Character of Pugwash membership
- B. The Impact of Pugwash
 - 1. The impact as seen by Pugwashites
 - 2. The impact as seen by non-Pugwashites
- C. Pugwash Action
 - 1. Types of meetings and conventions of procedure
 - 2. Contacts of a discreet nature
 - 3. Putting across Pugwash views

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REPORT ON THE 38th PUGWASH SYMPOSIUM

INTRODUCTION

The meeting to discuss "The Future of Pugwash" is one input into the discussions leading up to proposals to be prepared for consideration at the Quinquennial Conference in Warsaw in 1982. It is intended to stimulate discussion in the Council and National Groups.

A draft summary was discussed at the final session, and this report includes the principal recommendations from the Symposium. It is clear that these summary conclusions do not stand on their own, and must be read together with the papers submitted.

The starting point for the discussions was the recommendations adopted at the Munich 1977 Conference on the Modalities of Pugwash Activities. Some of the recommendations reinforce some of those proposals, not all of which have been successfully implemented to date; other recommendations are new.

They are made on the assumption that the primacy given to the avoidance of nuclear war derives from three considerations:

- it would be terrible for all countries, developed and developing alike, if a nuclear war were to occur;
- fear of it should be a compelling motive for everyone to try and avoid it; and
- development problems of the Third World, while important, are the active concern of a substantial number of international organizations.

The Symposium discussed "The Future of Pugwash" from three aspects: activities, participation and organization, and publicity and publications

The following is a list of what most participants thought commendable (recommendations), and proposals made and discussed which warrant further discussion.

I. ACTIVITIES

A. Recommendations:

1. The avoidance of nuclear war remains the principal concern of Pugwash.

Efforts in this sense include:

- a. Halting and reversing the nuclear arms race, including a determination

of the effects of nuclear war, and reducing the fears and ambitions which fuel the arms race.

b. Study of ways to reduce nuclear stockpiles without impairing perceived national security concerns.

c. Assessing the impact of new technologies on the stability of the present "balance of terror", and warning against the introduction of destabilizing elements and concepts (such as that of a limited or winnable nuclear war).

d. Study of proposals on how incentives for the proliferation of nuclear weapons can be reduced.

2. Local or regional conflicts, and especially those which could lead to war involving the major powers, should continue to be a Pugwash concern.

3. Problems of development should occupy Pugwash primarily when they include the relation of development to possible conflicts.

B. Proposals made and discussed which warrant further discussion:

1. Crisis management and an understanding of motivations for the general arms race.

2. A comprehensive study of concepts of security, including deterrence and unilateral initiatives.

3. Exposure of dimensions of the arms trade and ways of limiting and reducing it.

4.a. The strengthening of international law in order to provide brakes on warlike initiatives and give motivated national groups standards around which they can rally.

b. The progressive development of international law concerning the limitations of national freedom to possess armed power (the law of arms control and disarmament), to be performed by the United Nations and initiated at the 2nd Special Session on Disarmament. (There was disagreement on this proposal).

5. Improving the quality of life is a major Pugwash concern. (The "under-trodden of the world" are afflicted by natural disasters and to them nuclear war would be one more disaster, while it is the only stark disaster which threatens to befall the industrialized nations).

6. Pugwash should press for Soviet-American summit meetings, and with other nations, in order that causes of possible conflicts (e.g., the assurance of future oil supplies) be removed. Pugwash should for its part promote studies designed to suggest ways of removing such causes of friction.

II. PARTICIPATION AND ORGANIZATION

Recommendations

1. Individuality of participation must be retained. The method of choosing participants from national groups varies from country to country. In some, an appropriate Academy of Sciences exists to act as an advisory group. In others, committed individuals have formed "clubs".

2. It remains a matter of foremost importance that scientists and scholars of national or international standing should participate in the activities of Pugwash, in both its national groups and its executive organs.

3. The proper proportion of scientists and scholars of different fields should be

a matter of concern, with the idea that the traditional role and proportion of natural scientists should not be diminished. In addition, efforts should be made to attract more participants from the Life Sciences and Medicine.

4. Scientists and scholars competent in problems of disarmament or arms control, as well as on strategy and technical problems of defence, should become involved in Pugwash activities irrespective of their views on specific issues.

5. New blood is needed in Pugwash, and efforts should be made to interest in Pugwash activities young scientists who already show promise in their respective fields.

6. There should continue to be no formal membership. The practice to assume that participation in a Pugwash Conference implies automatically affiliation to Pugwash should continue. Some suggested that the practice be extended to participants in Workshops and Symposia. Voluntary contributions to the costs of production and distribution of Pugwash publications (Newsletter, Conference Proceedings, etc.) should be encouraged.

7. National and Regional Groups

a. The present flexibility in the nature and structure of National Groups should be maintained, but the Council should exert its influence towards these groups reflecting as broadly as possible their respective scientific communities, taking into account the aims of Pugwash.

b. The primacy and independence of national groups should be guarded. Regional groups should be encouraged where national groups are non-existent or embryonic.

c. National groups in some geographical regions should be encouraged to organize jointly Pugwash activities, in cases where such joint actions would be useful.

d. Bloc formation by Regional Groups should not be encouraged.

8. Conferences

Conferences form an essential part of Pugwash activities, but efforts must be made to improve the quality of the discussions in them.

Some proposals along this end are listed in the Munich Conference Recommendations, 1977. The following additional proposals were made:

a. Adequate preparation of papers, including payment for commissioned papers and attendance.

b. Use of previous successful symposia as background papers for working group discussions.

c. Papers prepared by non-participants or Institutes with special expertise should be accepted, but only if introduced by a participant.

d. Involvement of younger scientists, identified in the national scientific community, by calling for papers to be submitted on special topics relevant to Pugwash.

e. Organization of working groups as symposia in the Conferences.

f. The best method of preparing good working reports has not yet been achieved, but less emphasis should be given in the working group discussions to the drafting of the report.

9. Council

There was a brief discussion on the methods of election of members of Council and many participants felt that the system of constituencies is not a suitable basis for election of Council members. Different opinions were expressed and no attempt was made to arrive at a conclusion.

III. PUBLICITY AND PUBLICATIONS

Publicity

It was agreed that the fundamental characteristic of Pugwash, that all discussions were private, should be re-emphasized. One of the most valuable functions of Pugwash is to provide private channels of communication for opposing sides to have a free exchange of views, aiming at a solution of difficulties, for transmission to decision-makers of respective governments. This is best achieved by normally retaining a low profile for Pugwash. However, since Pugwash has a responsibility of informing other scholars and the public, Pugwash should, where appropriate and indicated, make its views known as widely as possible. Public statements can be made only by the Council or Executive Committee. Public meetings should be organized in conjunction with Pugwash Conferences, Symposia and Workshops, for the purpose of informing and educating the public.

Publications

Good conference and symposia papers should be selected for publication in 'Pugwash Annals' which should follow the system of peer review. Reports warranting wider circulation should be sent to an appropriate selection of governments, U.N. delegations, members of armed services, foreign affairs and international security committees of parliaments NGOs, university libraries, newspapers, press agencies and periodicals. Efforts should be made to induce member states of the U. N. to present such reports as U.N. documents. Publication of factual material and preparation of textbooks and materials for educational purposes should be aimed at.

On the 25th Anniversary, it would be a good project for one or more national groups to undertake to go through past Conferences, Symposia and Workshops for outstanding papers, to be published as a volume.

IV. ADDITIONAL RECOMMENDATIONS

1. National Pugwash Groups should encourage all nations to improve their participation in the 2nd Special Session on Disarmament 1982.
2. Ways should be sought to have the Secretary-General of the United Nations include in his annual reports a survey of local wars, including the number of people killed, wounded or displaced.
3. Attempts should be made by national groups to promote and assess the influence of Pugwash meetings on their governments and scientific community. Reports of these efforts and their impact should be made to the Council, and should be requested for circulation at the Warsaw Conference in 1982.

.. .. .

Editor's Note:

The full texts of the papers submitted to the Symposium are printed in this issue. It is hoped that they will stimulate thought and discussion in national groups in preparation for the Warsaw Conference. During the course of next year we shall be glad to consider for publication in the Newsletter individual or group suggestions on substantive questions, under the general rubric "The Future of Pugwash", on which

decisions will be made at the Warsaw Conference. Submissions should be brief (not exceeding some 250 words), and should be presented in itemized or outline form.

A VIEW OF THE SYMPOSIUM

by S. Freier and Patricia Lindop

Reflections on the future of Pugwash are called for on account of major changes on the international scene which had come about in the 24 years which have elapsed since its inception and consequent changes within the Movement. Pugwash appears to be doing well according to some and to have lost much of its usefulness according to others.

To a large extent this is due to the fact that both in participation and purpose there has been a steady dilution of the singularity of Pugwash.

Instead of the single-minded goal to reverse the nuclear arms race, an increasing variety of topics figured on our agenda. Instead of individuals of scientific distinction and specialized knowledge, workers from many disciplines and walks of life take part in our activities. Instead of seeking participants appropriate to the subject discussed, there has been a trend towards numerically equitable national representations.

Pugwash, as a clublike meeting ground for different types of experience, interests and knowledge may fulfil a useful function. No doubt, the different contacts established there can have a beneficial bearing on official policies; the debates at some workshops are of a quality which invites attention; the greater weight given to the problem of developing countries reflects shifting foci of potential danger. However, many feel that Pugwash has a singular mission, i.e. the prevention of a nuclear war, and that all other topics have a subsidiary character.

In the light of this situation, it seemed particularly important to engage in a discussion of goals well in advance of the Quinquennial Conference due in 1982, because these must determine the choice of participants and the character of the Institutions required to support them. Coupled with a discussion of goals, it also appeared necessary to examine the efforts made to implement recommendations pertaining to them. While recommendations of an organizational nature within Pugwash are implemented as a matter of course, more thought must be given to the manner in which national groups and Pugwash executive organs should lend force to recommendations consonant with the Pugwash mission, beyond disseminating them in writing.

It is against this background that the Symposium conducted its deliberations. While a majority of participants agreed that the avoidance of nuclear war should remain the principal concern of Pugwash, the report of the Symposium reflects the diversity of topics put forward by the participants, and the need eventually to determine unequivocally the hierarchy of Pugwash concerns. On participation in Pugwash, the Symposium reiterated former decisions, but in fact did not suggest how the desirable composition of Pugwash participation could best be assured. This is a thorny subject, but basic to the level of any beneficial influence Pugwash can have.

Lastly, the election of the Council was touched upon, and it was clear that attitudes in this respect could not be divorced from the concept participants had of Pugwash goals and the character of participation in the Movement. It is strongly recommended that the papers submitted to the Symposium be read in preparation for further discussions of the issues raised.

SOME DISRESPECTFUL THOUGHTS

by E. Bauer

1. Pugwash has existed for a long time and its achievements are sometimes difficult to measure.

We speak about our 'unique expertise', but we are very often well-meaning amateurs. This is in the essence of Pugwash, but it has its drawbacks.

We are supposed to speak as persons and not as representatives of governments, which is not equally true for all the members. This is a fact and a question.

2. We focus our activities on weapons, but not on the 'reason why' of armaments. Is the so-called Brezhnev doctrine (once socialist, forever socialist countries) a form of imperialism, which leads to armaments? Is it the same for the Monroe doctrine? What is meant under the word 'safety': military, economic, home policy questions? What is the impact of fear and of automatic technical progress?

3. Is it normal that the Russian policy in Africa should be implemented by foreign armies (the Cubans?) Is this to be considered as an aggression?

4. Is it progress when a country becomes free of imperialism and when its citizens are in the hands of the army and the police of a local dictator who can be overthrown by a faction of its own army without the people being democratically consulted? Too often the economy of those countries and their agriculture then go to the dogs. Who sells the weapons. And what for?

5. We take as a dogma that if many countries have the nuclear weapons it makes the danger of war more probable. Still, 30 million people were killed by classic weapons since 1945.

6. Being engrossed in the East-West and nuclear programmes, do we really perceive the growing dimension of the so-called North-South problem, with its many different aspects?

7. The agendas of our conferences are nearly always on the same subjects, except in the working group on current conflicts that has been disbanded.

8. We could not keep the rule of rotation in the council. Is it a fair approach?

9. Would it not be possible to have some invited papers on the same subject coming, for instance, from different institutes of foreign affairs, with those papers being written by real experts?

10. Would it not be wise for each conference to have one subject divided into different groups, rather than to deal with all the problems at the same time and have a too encyclopaedic and repetitive approach?

11. How can we deal with hot problems such as the Iran-Iraq war or the question of the oil supply by new ways including the scientific attache without trying to find the experts from the concerned countries?

12. We must remember that arms control and disarmament are different things. It is not obvious that the SALTS are not a stimulation towards technical 'progress', even if it is a good thing that the two big powers speak to each other. But who cannot see the danger of this duopol.

13. Anyhow, we are entering difficult times and Pugwash remains more useful than ever. Small and secret meetings are more than ever effective. Maybe we should have a sort of emergency tool to deal with problems like Poland, Ethiopia, Afghanistan, Salvador.....

THE FUTURE OF PUGWASH

by F. Calogero

The future of Pugwash should be essentially the same as its past. The strength of Pugwash originates from our peculiar nature and function; it would be jeopardized by any substantial modification of our *modus operandi*.

Pugwash is an elitist organization - and we should not be ashamed of it. Good scientists and scholars are an elite; the purpose of Pugwash is to channel some characteristics peculiar to this elite towards the advantage of mankind. Taking part in such an endeavour implies no 'aristocratic' attitude; quite the contrary. (Obviously a mediocre scientist is, *a priori*, neither more nor less democratic than an outstanding one; although of course the latter is a member of a more restricted elite than the former).

Three characteristics of the scientific elite that constitute the backbone of Pugwash are particularly relevant to our mission.

The first is the conjecture that the members of this elite are more reasonable than other groups. I am not fully convinced that this is true, although the conjecture might indeed stand if the comparison groups are limited to those having a major influence on world affairs.

Second, and most important, is the fact that scientists and scholars - especially good scientists and good scholars - have a communality of interests and of ethos that operates beyond national ethnic religious boundaries. It does not suggest that scientists have no empathy with their national communities. But they are generally more able than others to establish and sustain a meaningful dialogue, even between individuals that belong to different, antagonistic camps.

Finally, scientists are naturally involved in the drastic changes - the benefits and the dangers - brought about by science and technology. They should feel some responsibility for these changes. In any case, they are likely to know and understand these changes better than others.

As I see it, these three points are the pillars on which Pugwash stands. And I repeat: our *raison d'être* is, to channel these specific properties of the world scientific community towards the advantage of mankind; in particular, to elaborate ways and means to avoid the catastrophic outcome that may originate from scientific and technological 'progress'.

From these premises, there follows rather clearly what Pugwash can and should do, and what Pugwash cannot and should not try to do.

Pugwash is a rather loose and amateurish movement of scientists and scholars, with no bureaucracy and great organizational flexibility (vide the varied structure of the national groups). This is as it should be (although of course a less tight budget of the central office would be welcome; indeed it is needed, both in terms of efficiency and because we cannot indefinitely rely on the saintly dedication of our staff to cope with a task that exceeds the available means). The amateurish aspect of Pugwash is an asset, not a liability - and it is an essential component of our *modus operandi*. When we discuss a problem, we must of course also involve the professionals; for instance, on nuclear problems, military and other experts and decision-makers. But there must also be some individuals present who are more innocent and candid - although preferably not altogether naive and ignorant - who can look at things in a less narrowly constrained framework, and who can thereby facilitate a dialogue that might otherwise easily fall into a predetermined stale pattern.

The main task of Pugwash is to address the more difficult and controversial world problems, in particular those that have an important scientific and technological component. The most important such problems are those associated with nuclear weapons and other weapons of mass destruction. This has been in the past, and should continue to be in the future, the primary focus of Pugwash activity.

Any other problem on which the special expertise and commitment of scientists and scholars can be usefully brought to bear falls within the scope of Pugwash. But it would be silly for us to undertake projects that can be dealt with more efficiently in other frameworks. Many of the problems having to do with 'development' issues belong, in my opinion, to this class; many, but not necessarily all. (It should be emphasized in this connection that to establish what should be the focus of Pugwash activity the important question is not whether one set of world problems is more important than another - say 'disarmament' versus 'development' - but rather how important and peculiarly appropriate would a Pugwash input be).

Pugwash operates by consensus in the framework of loose rules and a well established and tested tradition. The capital of mutual trust that has evolved through this mode of operation - and that has made possible the continued existence of Pugwash - constitutes our main asset. It makes it possible for Pugwash to operate even in time of crisis; indeed, especially in such situations our activities become relevant, although not necessarily evident, since much can and must be done in the most discreet manner.

This situation also implies some constraints, such as the need to keep our operation away from the limelight. We often hear recriminations about the fact that Pugwash does not succeed in influencing adequately public opinion at large, or even the scientific and intellectual community. But this fact is inherent to the very nature of Pugwash, and any drastic attempt to modify this situation would result in the destruction of Pugwash. Indeed, the gentlemen's agreements on which the entire Pugwash operation is based - as indicated above - could not survive the heat of propaganda pressures, with the associated repercussions inside the different national communities.

More specifically, there are two reasons why Pugwash must exercise the utmost care in 'going public'.

In the first place it should be clear that Pugwash is not, and should not become an advocacy group. There is not, and there should not be, a 'Pugwash line', for the vitality and usefulness of Pugwash depends on the presence of different viewpoints. Thus, for instance, we must always try to involve also the 'hawks' in our discussions on international security and arms control, especially those who are likely to have access to, and influence on, decision makers. This would clearly be impossible if Pugwash were to change from a forum for debate into an advocacy group. Of course, that does not imply giving up our basic stand - shunning our responsibility to try and avoid that scientific and technological progress be the direct or indirect cause of catastrophic outcomes. Indeed these goals are universally shared. The essential point is how best to implement them, and our contribution is better fulfilled precisely by facilitating the communication between all parties, in an atmosphere that favours the prevalence of reason and good sense.

A second reason that suggests the need to exercise restraint in going public are the differences in the political systems, East and West, North and South. There are political systems where an eminent individual can publicly criticize, even in an international context, his own government, without losing the possibility to influence policy. There are other political systems where this is quite impossible. As a result Pugwash, which operates by consensus, runs a constant risk of appearing biased, by omission if not by commission - and that would not only impair its prestige and therefore its effectiveness, but eventually it would bring about a disintegration of the mutual trust on which its very existence is based.

I have elaborated on this point because it constitutes a potential source of misunderstanding and friction within Pugwash. It is hard to argue, in circumstances when we are all essentially agreed on an issue, against taking a public stand. But if we do this time and again, the downfall of Pugwash will follow.

That of course does not exclude a priori any effort to have an educational impact on public opinion (happily we never have tight rules in Pugwash). Moreover, especially on more technical matters, ample scope for this aspect of our activity is provided by the Symposia and the books that often result from them. For instance, I cite an especially useful example, the 1978 Pugwash Symposium in Canada on "The Dangers of Nuclear War by the Year 2000: An Attempt at Assessment" and the resulting book (The Dangers of Nuclear War, edited by F. Griffiths and J.C. Polanyi. University of Toronto Press, 1979).

We are now witnessing a definite deterioration of the world scene. As we know from past experience, this not only underscores the need of our commitment to try and redress a precipitating situation, but in fact enlarges our scope. When very few other channels, if any at all, are visible, the Pugwash connection plays a more essential role. Thus we should overcome the gloom that many recent events motivate (with one most important exception so far: Poland!), and set out to our task with reinforced dedication.

One last point. Should the present situation, in particular the overall crisis of the arms control approach and even of detente, be interpreted as proof of the failure of Pugwash, and therefore as a suggestion that we must drastically change our ways? I do not believe such a conclusion would be justified, because we cannot reasonably presume to have such a determining influence on world events. This remark does not derive from a defeatist attitude as regards the influence of Pugwash. In fact, quite the contrary. One of the reasons I become impatient when much is made of the need for Pugwash to 'go public' is precisely because the impact we can have in that manner - a few headlines in a few newspapers - is ridiculously tiny as compared to the impact we can and often do have by our approach based on discreet contacts and the direct involvement of eminent individuals. Yet, important as our influence will ever be, it certainly cannot be expected to determine world events. Hence the current deterioration of the world scene cannot be interpreted as justification for the need to change Pugwash drastically, but rather as a spur to make Pugwash more effective, and this is best achieved by relying on our tradition. And however frustrated each of us is by current developments, we should nevertheless realize that the little influence any of us can hope to have on world affairs is multiplied manyfold by operating through Pugwash (of course, even after such enhancement, it remains marginal, perhaps negligible - a predicament that can be escaped only by way of delusion).

Of course, my conservatism as to the future of Pugwash does not exclude the recognition that some renovation is called for. We need to involve novel people, especially eminent scientists and scholars; and especially from the younger generations, i.e. individuals who have a more pragmatic and less stale vision of the world, and who have more at stake since they are more likely to be there when the disasters towards which the present course of world events is drifting will come to pass. We must extend our geopolitical coverage; and in this respect the return of China to Pugwash is a goal we must pursue with determination, without fear - but with appropriate care - for the difficulties this may entail. And perhaps we must review some of our organizational practices, for instance the format of our annual conferences. The main occasion for doing this will be at the 1982 Quinquennial Conference in Warsaw. But some preparations to this effect must begin already at the next Council meeting in Banff, and it will be most useful to have some informal airing of these issues in this Symposium. The main message of this contribution of mine is that we ought to do this analysis not in the prospect of a drastic change of Pugwash, but rather on the basis of continuity and of reliance on a tradition that must be strengthened, not abandoned, since it constitutes our main asset.

ON THE FUTURE OF THE PUGWASH MOVEMENT

by V. Emelyanov

A group of outstanding scientists of our times, A. Einstein, B. Russell, F. Joliot-Curie, H. Yukawa and others, most of them Nobel Prize winners, laid the foundation more than a quarter of a century ago for the Pugwash Movement of scientists with the purpose of preventing the annihilation of human civilization, preserving peace, and for general and complete disarmament.

They fully realized the mortal danger which all mankind faced due to the emergence of horrible weapons of mass destruction - nuclear and later hydrogen and thermonuclear weapons.

Rapid progress in manufacturing these weapons, their further modernization and the coming to possession of these weapons by many countries within only a decade, laid special emphasis on the fact that all of humanity was endangered as never before.

Having realized and correctly assessed this danger, the scientists addressed the nations of the world with an appeal known as the Russell-Einstein Manifesto, each word of which cannot but move every human being; "We appeal, as human beings, to human beings: remember your humanity, and forget the rest. If you can do so, the way lies open to a new Paradise; if you cannot, there lies before you the risk of universal death".

The Soviet people are well aware of the disasters a war can bring. And Soviet scientists are able to take a sober view of the consequences of a nuclear war in the world of today.

Members of the Soviet Pugwash Committee, which consists of outstanding Soviet scientists, want the Pugwash Movement to concentrate its attention on the main purpose - the struggle of scientists for peace and disarmament. The 27th Pugwash Conference held in August 1977 in Munich (FRG), which marked the 20th Pugwash Anniversary, showed that this opinion was shared by wide circles of participants in the Pugwash Movement. At the same time this anniversary conference demonstrated the growth of this movement. Two hundred and twenty three scientists from forty seven countries took part in this Conference. There were outstanding scientists among them, most of whom with universal recognition for their scientific achievements.

Dedication to the noble aims and deep awareness of the participants in the conference of the necessity of cooperation among scientists from countries with different social systems aimed at the achievement of these goals - all this was reflected in the final documents of the conference.

Summing up the results of discussions, which took place in plenary sessions and in eight working groups, the Pugwash Council adopted a declaration and a statement, which are of great importance.

The declaration warns the scientific community and the world public opinion of a 'new, more intensive and more dangerous stage of the arms race'. The neutron bomb, 'cruise missiles' and other new types of weapons play a 'provocative and destabilizing role'. 'To halt the spread of all these new types of weapons' - is what the declaration demands.

The statement on the principles of the Pugwash Movement, adopted by that Conference being also the programme of action for the movement for the forthcoming five year period, meets the requirements which reality sets before the public peace movement.

"The main preoccupation of Pugwash remains with problems of disarmament and

related issues of international security. High priority should continue to be devoted to the relationship of scientific and technological cooperation among all nations to world peace; in other words to the links between peace, disarmament and development...

...We all bear responsibility for the preservation of the civilization of which we are the human heritors, and its improvement for those who will come after us. As scientists we share heavily in this responsibility. Science must be used only for the benefit of humankind - never for its destruction".

Soviet scientists and the Soviet people share the anxiety and concern for the future of peace and express a desire toward its strengthening through disarmament which has been so convincingly voiced by the Pugwash Movement. It is not for the first time that the scientists participating in Pugwash addressed the problems of the future of the Pugwash movement. These problems were treated in the reports of Professor B.T. Feld, Academician M.A. Markov, Professor J. Rotblat and others. In our world which is being transformed rapidly and constantly, many new problems emerge and they demand attention and careful consideration.

The beginning of this year was marked by a great event in the life of the Soviet Union, the 26th Congress of the Communist Party which mapped the main guidelines for our country in home and foreign policy.

Speaking at the ceremony commemorating the opening of the Memorial Complex in the Hero-City of Kiev on May 9, 1981, the General Secretary of the CPSU Central Committee, Chairman of the Presidium of the USSR Supreme Soviet, L.I. Brezhnev characterized the importance of the USSR foreign policy decisions, adopted by the 26th Congress:

"...the recent Congress of the CPSU confirmed that peace is the supreme aim of the Soviet Union's international policy. The complex of initiatives set forth by the Congress has been named by people a Peace Programme for the 1980's. And we know well that in the struggle against the dangerous plans of the preachers of a new war, in the struggle for lasting peace, all the peoples of the world are on our side.

The advancement of the programme, naturally, is only the beginning and not the end of the matter. All the work, all the struggles are yet ahead. We are for a broad dialogue, and any constructive idea will always find understanding on our part.

No matter where talks are conducted and no matter what problems they are devoted to, we always have given and will give pride of place to the interests of peace and peaceful cooperation...

We shall work insistently to ease off tensions, to preserve detente and ensure its further development. This is the key issue.

Our thoughts are pure and noble. Our might is great. But we shall never turn it against other people. It serves and will serve the cause of peace".

EXPANDING THE ROLE AND ACTIVITIES OF PUGWASH

by W. Epstein

Despite eight multilateral treaties and some dozen bilateral American-Soviet Agreements and treaties in the last twenty years, the arms race continues to intensify. The stock-piles of nuclear weapons continue to grow larger and more dangerous with new generations of weapons and new types of weapons systems. World military expenditures are approaching \$600 billion dollars a year. The world is now poised and preparing for an

explosive qualitative and quantitative escalation in both nuclear and conventional arms. In short, efforts to halt or even curb the arms race have failed.

Although Pugwash has played a very useful role in these efforts, particularly in maintaining continuous communication and contact between East and West, Pugwash too, has failed. It cannot succeed in its objectives unless the arms race is halted and reversed.

The failure of the UN, of governments and of Pugwash is not due to any lack of ideas, proposals or plans for arms limitation and disarmament. These exist in abundance. The most important ones were embodied in the Final Document of the UN Special Session on Disarmament in May and June 1978, which was adopted by consensus.

The reasons for the failure are to be found in the absence of the necessary political will on the part of governments to undertake any really meaningful measures to stop the arms race. This political will can be generated only by the pressure of public opinion. This was recognized by the UN Special Session when it listed in paragraphs 99 to 108 of its Final Document a number of specific measures for mobilizing world public opinion on behalf of disarmament.

The Final Document of the World Congress on Disarmament Education convened by UNESCO in June 1980 also contained a number of principles and recommendations for promoting and improving disarmament education and information. These were endorsed by Pugwash at its 30th conference at Breukelen in the Netherlands in 1980.

In order to contribute to improving and promoting disarmament information, education and research, Pugwash should 'go public' and play an increasing role in the widest dissemination of information about its work and activities. I proposed a number of specific ideas in this regard at the 27th (Quinquennial) Pugwash Conference at Munich in 1977 (1). I believe they are still valid.

If Pugwash were to expand its activities along the lines suggested it could perform a most useful function and play an increasingly effective role in helping to generate the necessary political will for disarmament.

(1) Proceedings of the 27th Pugwash Conference, Munich 1977, p.221.

THE FUTURE OF PUGWASH

by B.T. Feld

It is almost twenty-five years since the beginning of Pugwash, at a time when women and men of peace, everywhere, were acutely concerned over the possibility of a nuclear war between the Soviet Union and the United States. Much has happened in these twenty-five years: the 'cold-war' has been intensified and then abated; we have seen the hopeful beginnings of nuclear arms control -- via SALT I and the negotiation of SALT II -- and detente. But the available weapons of mass destruction have multiplied steadily, and their lethality and sophistication continue to grow; now we stand at the threshold of an imminent proliferation of such destructive means to many more nations, as well as to non-governmental groups. And the cold war seems to be back with the same intensity and similarly frightening form as at the time of the Pugwash beginnings.

Indeed, we seem to have come full cycle in the last twenty-five years -- and not

especially for the better.

This is not to deny that Pugwash has had a certain (if limited) impact in its time. We have undoubtedly contributed to the clarification of the issues of the nuclear confrontation -- of the implications of nuclear war and its dangers; we may well have had a role in the avoidance of nuclear war in this period, in the growing awareness by governments and their peoples of the impossibility of use of nuclear weapons for the resolution of their conflicts. We may even have provided a useful unofficial forum among smaller nations for the peaceful amelioration of lesser conflicts that might eventually have involved the superpowers and endangered the fragile balance of peace.

The question before us is whether and how Pugwash can adjust itself to the times so as to continue to play a positive role in the resolution of international conflicts. Note that this formulation of the Pugwash mission does not exclude a meaningful Pugwash role in the solution of problems of 'development', in so far as progress in this area is a prerequisite to the avoidance of international instabilities which are now and will be increasingly in the future the major source of international conflict. At the same time, in my view, the major (but not necessarily the exclusive) concern of Pugwash should remain a relatively shorter-term one of averting or resolving those conflicts that appear to have appreciable potential for leading to a military conflict involving the nuclear weapon states.

On this basis, a major future function of Pugwash needs to be one of expanding the so-called East-West dialogue to include the other important actors whose role in the future maintenance of world peace can no longer be ignored. Necessary as Soviet-American rapport is for the avoidance of nuclear war, it can no longer be regarded as a 'sufficient' condition; nor is the problem simply one of an expanded NATO-Warsaw Pact negotiating forum; it goes beyond. Peace is now truly and indivisibly a world-wide problem.

But having made this observation, it must be emphasized that existing world bodies (the United Nations or the Committee on Disarmament) - have not yet found the appropriate formula for effectively carrying out this responsibility. It is here that Pugwash could make an indispensable contribution, by seeking mechanisms whereby the world scientific community can become more directly involved in the peace-seeking and peace-keeping process. While it is likely that the necessary inventions and innovations to achieve this end are political, it cannot be excluded that new or novel technological inputs may play an important role (e.g., space satellites, novel communication systems).

It is in such new and uncharted areas that Pugwash may hope to make its most useful future contributions to the maintenance and strengthening of world peace.

"A TIME TO PLANT AND A TIME TO UPROOT" (Eccl. 3,2)

By S. Freier

Pugwash appears to be doing well according to some, and to have lost much of its usefulness according to others. This is largely due to the fact that in membership and purpose there has been a steady dilution of its particularity.

Instead of single-minded attempts at reversing the nuclear arms race, there has been a proliferation of topics for discussion; instead of a few individuals of scientific distinction, people from many disciplines and walks of life have become prominent in its

councils; and instead of a general concern for participation appropriate to the subjects discussed, there has been a trend towards numerically equitable, national representation.

It may be said that Pugwash as a clublike meeting ground for different types of experience, interests and knowledge is very useful; that discreet contacts established there can have a beneficial bearing on official policies; that some of its workshops are of a quality which invites attention; and that appropriate weight given to the needs of newer countries reflects shifting foci of potential danger and necessary intervention.

The advantages of this approach can be easily argued.

Others, however, feel that Pugwash has a mission, the prevention of a nuclear war and that all other topics are of a subsidiary character.

In the early days of Pugwash it was thought that the abolition of the then existing nuclear arms was a rational and feasible goal. With the nuclear arsenals now existing, it seems that the dangers of nuclear war can be contained in two ways mainly:

- to enquire into the causes of major conflicts and bring about meetings of the principal opponents in order to try and settle those issues which might bring on a nuclear war, to the detriment of the parties themselves and the rest of us.
- to detract from the temptation to acquire nuclear arms.

I feel that the prevention of nuclear war - as set out above - should remain the major mission of Pugwash and that the standing of its individual members and the composition of its membership should ensure the necessary influence on the thinking and doing of governments.

If this view is adopted, it would lead Pugwash in a direction different from the one it has been taking in recent times. It would recommend the curtailment rather than the growth of its membership; it would make for selectivity rather than democratization; it would make for the choice of unfashionable and unpalatable topics rather than those which determine priorities at the United Nations; and it would engender stricter criteria for self-assessment than those which obtain at present.

The major obstacle to any change from the present is, of course, the fact that it requires an act of self-denial on the part of many who have rightly come to regard Pugwash as their own. And this is one of the unpalatable subjects this workshop should not avoid discussing.

SOME THOUGHTS ABOUT THE FUTURE OF PUGWASH

by K. Gottstein

Pugwash has existed for almost a quarter of a century. The brochure "The Pugwash Movement at Twenty One" puts on record what Pugwash has done during this period.

Twenty-five years ago few would have dared to predict that by 1981 nuclear war would not yet have happened. And some of the few who would have been optimistic enough to make that prediction would have assumed that during that long period mankind would invent some social and political mechanism to make nuclear war impossible.

As we all know, this mechanism has not been invented. We are far from it. But nevertheless, nuclear war has been avoided. Both this failure and this achievement are related to the role of Pugwash

Let us look at the achievement first. It is no small accomplishment - and I am

afraid many of us have been so used to it that they do not even recognize it as such - that for more than 35 years now, in our part of the world, we have lived in peace. This is by no means due to the fact that the institution of war has been eliminated from the human repertoire. It has existed on that repertoire ever since human history began, and it still exists there, as the many wars fought during the past decades, particularly in the Third World, show very sadly and very clearly. There is no certainty that war will not break out again in Europe and North America and develop into a worldwide conflagration. But somehow this has been avoided so far. It is entirely possible that the contribution made by Pugwash towards this desirable result was not at all insignificant.

Now the failure. It is represented by the fact that 36 years after the explosion of the first atomic bomb the amount of nuclear explosives piled up for military purposes in the East and West corresponds, according to some estimates, to 4 tons of TNT for every man, woman and child in the world. What is worse, however, is that there is no guarantee that these explosives, all or part of them, will not be used sooner or later. We have succeeded in harnessing nuclear energy but, as mentioned above, we have not succeeded in designing a mechanism which, for nuclear energy, breaks in a reliable manner with the age-old human tradition that every available resource is used for war as well as for peace. It will take some heavy learning to change this habit because we have inherited it from thousands of generations of our ancestors. But it must be changed.

Under these grim circumstances Pugwash should aim at improving its performance both in the areas where the contribution of Pugwash to the maintenance of peace was not insignificant and in those in which we have all failed.

Great efforts should be made to improve the quality of the channels available to Pugwash for the assistance in crisis management, and to enhance the capacity to remove possible misunderstandings about the intentions of either side in a conflict. This requires

- full understanding of the motivation, ways of thinking and methods of decision-making on both sides;
- the maintenance of lines of communication to the decision-making bodies on both sides.

Pugwash should continue its successful programme of conferences, symposia and workshops. But it should make sure, even more than in the past, that the participants are of high calibre and are therefore listened to by the political decision-makers.

Pugwash should also have in mind the continuity of the movement. There is a scarcity in Pugwash of leading scientists of the younger generation.

To attract these active, younger women and men it will be necessary to get involved where the roots of the problems are. In the Eighties it will not be sufficient just to warn against nuclear war and its consequences. Although it will remind the forgetful public of the sword hanging above it, we must also be aware of the observation that constant repetition of unwelcome facts leads to resignation and psychological repression unless a realistic way out of the impasse is offered at the same time. If we want to avoid such resignation and repression about the continuation of the arms race we must offer alternatives. If these are to be realistic Pugwash must get involved in the details of why previous and current attempts at arms control and disarmament have failed, and how better results could be obtained in the future. Mere admonitions will not do.

We must try to understand why everybody wants peace, nobody wants destruction and still the arms race goes on. It cannot be sheer stupidity: nobody in leading

positions is that stupid, otherwise he or she would not have reached that position. It cannot be lust for profit or power: his or her goals would not be served by total destruction. But it could be the result of misunderstanding the situation of our modern world, of having not yet understood completely the necessity of a drastic change in the notions of international politics, or of having not yet found practicable notions to replace the old ones.

Pugwash must not limit itself to issuing warnings about dangers which are nowadays fairly well known, and to proclaiming values like peace to which nobody objects (actually armaments have always been justified as measures to preserve peace).

We shall have to go into details and understand the arguments of both sides and try to mediate between them. Otherwise the world as we know it will go up into smoke one day, and all we can then say in our last seconds will be "We told you so!" But there may be nobody left to praise Pugwash for its foresight. Indeed, if there will be survivors, they may curse Pugwash for having had this foresight and still having not done enough to prevent the catastrophe foreseen so clearly. It was certainly commendable and necessary to exhort mankind to remember its humanity and forget the rest. But we now know that mankind cannot easily forget the rest. We must find out ourselves, and explain to mankind, how to do that.

We cannot look at the armament problem in isolation. People, at least in general, do not spend their valuable resources on arms just for the fun of it. They arm because of fear. Their fears have many roots, psychological roots, ideological roots, historical roots, economic roots. It would be naive to just say forget your fears. These fears exist, they cannot be forgotten. Perhaps they can be repressed temporarily. But in that case they will do even greater harm and return sooner or later. Psychoanalysts know that.

Since, at least in some parts of the world, decision-makers are influenced by public opinion, it will also be necessary to inform public opinion sufficiently. This information should not only concern the scientific facts about new weapon technologies and strategies and their respective implications and consequences, the risks incurred by their production, storage, deployment and use. The public should also be presented with an unbiased picture, as far as that is possible, of the political forces at work on both sides so that unjustified fears - and the resulting urge for arms - are removed or at least reduced.

No effort should be spared to get away from the habit of depicting the political opponents as warmongers and thereby justifying ones own armaments. The socialist principle of 'partiality' is a great problem here because it states dogmatically that whatever the leadership of the party decides is right by definition. For the case considered here, this principle means in practice: arms in socialist countries are always for peace, arms in capitalist countries are always for war. It will be the difficult task for Pugwashites in socialist countries to work for mutual trust and understanding under these conditions without violating the rules of the society in which we live. On the other hand, Pugwashites in Western countries have an equally difficult task. Although it is easier for them in a pluralistic society to state their views without violating any rules it may be more difficult for them to be listened to. The public is influenced by a press which often misrepresents or over-simplifies positions and developments. Here, too, Pugwashites are called upon to stress the "principle of complementarity", well-known to physicists. This principle is also valid in other fields. It means that the real nature of things can, and must be, described in various, seemingly contradictory ways (e.g. light appears as a wave under certain condition, and as composed of particles under other conditions). One description, convincing as it may appear, only covers one aspect of truth. The whole truth is encompassed in the complementary description. This, *cum grano salis*, holds also true for social

phenomena. We must learn to accept the fact that the social and political world can be described by various theories and philosophies, and that although these theories and philosophies may appear mutually exclusive and contradictory, they are part of the whole truth if some people are convinced by them and/or if actions in some part of the world are governed by them. As long as it is pretended, in violation of the principle of complementarity, that any one of these theories or philosophies is superior to the others in the sense that the expansion by force of the region in which this one theory or philosophy is officially recognized is considered justified, or as long as the spreading of new ideas is prevented by force, so long will mistrust and the traditional justification for armaments persist.

But Pugwash should not give in here. Pugwash should support any effort by politicians and diplomats to come to an agreement on the reduction of armaments, and to remove the motivations for armaments. Pugwash should oppose any attempt, both in the East and the West, to misrepresent the motivations and political forces of the other side. We, and the public, must learn that it is a misrepresentation when only a partial picture, only a partial truth is offered and not the whole truth which consists of many 'complementary' phenomena.

Pugwash should pay particular attention to convincing politicians and the public that with modern technology the old equation - more arms = more security - has become highly questionable.

Pugwash must continue to be aware of the sad fact that there are several predicaments menacing mankind, and that they are all interlinked: nuclear overkill capacity, hunger, overpopulation, devastation of nature, the lag between cultural and technological development, North-South relations, East-West relations etc

Aurelio Peccei has named them in a recent invited lecture at the International Institute for Advanced Systems Analysis. We cannot tackle any one of these problems without studying the others. It seems, however, that the menace of nuclear war is the most immediate and most deadly one to the survival of civilization. It should be tackled with the highest priority.

Perhaps Pugwash should consider inviting the main arms control negotiators and other actors such as Senators and Secretaries of Central Committees, or their principal advisors, and investigate with them, in the non-committal and discreet atmosphere of Pugwash, the obstacles to agreement, possible ways around these obstacles, and those conditions the fulfillment of which would be considered inalienable by each side. Although investigations of this kind certainly cannot replace the poker game part of the real negotiations between diplomats and politicians, they could supply the latter with some useful options, remove misunderstandings, stress the 'complementarity' of the approach of either side, and bring home the fact that the modern technical world has no acceptable alternative to the finding of peaceful solutions for its problems.

Summarizing I would suggest that in the future Pugwash should:

- look more into the reasons why everybody is for peace and nobody disarms, and deal with these reasons in detail;
 - improve its own level of expertise by, e.g. involving the best experts available for any field under investigation;
 - keep closer contact with decision-makers;
 - involve younger scholars and scientists;
 - inform the public better by, e.g., scheduling press conferences about the agenda of Pugwash Conferences a long time in advance, and in many cities and countries:
- and - carry on.

QUESTIONS

by M.M. Kaplan

As indicated in Mr Freier's background paper, there are several major unresolved questions concerning the future direction of Pugwash activities. A final decision on policy will be made at the Quinquennial Conference in Warsaw in August 1982, and this Symposium is an opportune time to initiate thought and discussion on some of these problems. The Council and our almost 2000 Pugwashites will consider these and other matters during the next year and the views expounded here could well provide bases for discussion in the Pugwash constituency as a whole.

1. Pugwash has been accused of being elitist because of its private meetings, restricted participation, and attempts to influence international affairs from the inside rather than through public pressure. Often we have fallen between two stools in trying to satisfy the need for privacy and our responsibility to inform the public to the widest extent possible. How can our approach to this problem be improved?
2. Should Pugwash become more of a public activist organization, and if so, to what extent? (A corollary to the preceding item.)
3. Should Pugwash be involved in technical problems of development, e.g. economic and social, or should its activity be limited to attempts at specific conflict prevention and resolution?
4. Given our limited resources, which particular subjects for workshops and seminars should Pugwash focus upon, e.g. technology of arms, political obstacles to arms control and disarmament agreements, geographical 'hot-spots' for potential conflicts, publications (e.g. consequences of nuclear war), energy, natural resources, specific confidence building measures?
5. Pugwash is almost twenty-five years old. It is essential that young scientists of high calibre and other new blood be recruited for more active participation in our work. How can this best be done?
6. It is obvious that the functioning of Pugwash could be vastly improved, both at national and international levels. Our very limited funds (at both levels) is a decisive and often crippling constraint. How can this defect be remedied and, at the same time, enable us to retain our independence? Possibilities are: mandatory or voluntary contributions of our 'membership'; solicitations to the public through, for example, national associations of Friends of Pugwash (receiving in return the Newsletter or other information notices about Pugwash); approaches to reputable wealthy individuals and industrial organizations (no strings attached, of course); private and governmental foundations and other organizations.

The above questions are not new, but they must again be examined in the light of the present deteriorating world situation and the decisions to be made at the Warsaw Conference for the succeeding five years.

PUGWASH PEOPLE

by Patricia J. Lindop

Pugwash functions only through the activities of the individual scientists who are able and willing to work at and between conferences and symposia, on particular areas

of Pugwash interest, be it East-West arms control, energy resources and the environment, or problems of developing countries. It is essential therefore that participants are good scientists.

Pugwash aims to influence the decision-makers, with particular emphasis on those in governments. This needs to be supported however by influencing the scientific community, and ultimately by influencing the people.

It is essential therefore that participants are nationally and internationally recognised as being of a high calibre in their own field, and also of having achieved a career status making them relatively invulnerable to political pressures.

Pugwash needs to communicate with non-scientists, specialists in arms control, military affairs, international relations, and the media.

It is essential however that whilst learning from these specialists, the scientists and their scientific approach are not swamped so that the calibre of the Pugwash studies is reduced.

Pugwash needs to attract young scientists of high potential in their own subject. This it will only do if participation in Pugwash activities is seen to be an honourable duty which will not adversely affect, by implications of lack of scientific expertise in Pugwash, the developing scientists's career.

Looking at these requirements for Pugwash scientists, I am dismayed at the failure to meet these standards, in comparison with my earlier experiences in Pugwash in the late Fifties and early Sixties.

- (1) The participation of scientists of high repute, as expressed in the percentage of Nobel Prize winners attending the Annual Conferences, has gradually decreased:

	<u>Nobel Prize Winners Attending (%)</u>				
Quinquennium	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u> ← (incomplete)
Percentage of participants	12.5	6.7	3.8	1.8	2.1

What efforts have been made to encourage Nobel Laureates and other top scientists to continue to participate and new ones to come to our meetings?

- (2) The influx of scientists from the physical sciences has been decreasing. At the same time there was a remarkable increase in the percentage of social scientists among the newcomers to Pugwash:

	<u>Profession of Newcomers to Pugwash (%)</u>				
Quinquennium	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u> ← (incomplete)
<u>Field of Study</u>					
Philosophy etc.	5	10	10	5	4
Physical Sciences	60	42	39	28	30
Biological & Medical Sciences	17	22	14	18	13
Social Sciences	18	26	37	49	53

These figures do not of course reflect the relative achievements of the scientists from the different fields of study in Pugwash activities and specialized continuing study groups, such as those on biological and chemical weapons, or technological innovations in armaments and arms control which have been successful by participation of a small number of specialists working on the same topic for a longer time. But in the over-

all effectiveness, this Table shows that we have attracted too few biological and medical scientists, and perhaps too many social scientists in relative terms.

There has been the need for an international medical group to emerge, and this could have happened within the Pugwash framework, but it did not. We should therefore look again at what other needs or opportunities Pugwash is not meeting.

(3) There is an increase in the numbers of non-scientists in Pugwash activities, e.g. military, professional diplomats, bureaucrats, newspaper men, etc. A glance at the invitations to the next Workshop on the Resumption of Negotiations on Strategic Arms Limitations and Nuclear Forces in Europe, a topic in need of highly specialized and original scientific expertise and input, if Pugwash is to contribute significantly, shows that over half are non-scientists even in the broad sense of that term.

Pugwash people must be chosen for their individual scientific excellence, and every effort should be made to help them to attend and keep on participating in specialized discussions. This means selection and finance on a more precise and controlled scale than is currently operated in Pugwash.

REFLECTIONS ON THE SPIRIT AND GOALS OF PUGWASH

by S.E. Okoye

It would appear that science, as a human activity, has from time immemorial been the preserve of the privileged. Starting initially from a stage in which the pursuit of scientific knowledge itself was a past-time engaged in, under the patronage or even directly, by the nobility, we have today arrived at a situation where science has become a highly institutionalized as well as professionalized actively associated with the economically and technologically strong nations. Science in the fullness of its progress has brought with it not only tremendous material benefits to mankind but certain negative spin-offs which threaten the very basis of the existence of mankind. The emergence of the Pugwash Movement can thus be ascribed as a rational response to this danger posed to the future of the human species by man's perverted exploitation of science.

The strength of the Pugwash Movement, on the other hand, derives from its moral predicates especially as they pertain to the issue of the extinction of the human race. This, if one may entertain a 'heretical' approach, raises important philosophical questions which arise when dealing with similar issues like 'mercy killing' and the 'right to life'. Thus, it is legitimate to ask whether man has any moral right to question any attempt to abridge or to prolong the existence of the human species if he has shown no real interest or commitment to issues relating to the quality of the human existence itself. In other words, should the undertrodden of the world, constituting the bulk of humanity, condemned to slavery and perpetual deprivation, be expected to care very much if the world were to come to a sudden and catastrophic end, if such an end were in itself merely to deliver them from the ordeal of sub-human existence and the misery that accompanies it? The truth of the matter is that the hue and cry about the much feared nuclear-generated Armageddon constitute a sword of Damocles only over the heads of the scientifically aware, privileged, overfed, and luxuriated members of the world society. To the so-called primitive tribesmen in Africa, for example, the net effect of a nuclear holocaust cannot be differentiated from that of a natural disaster such as floods or drought; neither is he able to cope

or deal with either of these effects. The objective reality in this case is whether man in such a primitive condition is able to cope with the process or transitional change known as death. To primitive man, therefore, a catastrophic disaster like a nuclear holocaust could only evoke fears of pain and/or death, and depending on his religious inclinations, fear of an unknown quality of existence after death. Consequently positions taken on the issue of man-made holocausts will be based on primitive man's concern for, or fear of, pain and/or death as well as fear of the unknown quality of existence after the transition constituting death.

The perception of man in a highly advanced and technologically advanced society of a nuclear holocaust is however dramatically different. For him, life still remains a struggle against the forces of nature. But he has also learnt to master and control these forces, as evidenced by many artefacts of his creative genius, his science and technology, surrounding him, acting as a source of great pride to him, as well as generally inspiring him into further progress. A nuclear holocaust in this case means not only the destruction of this glory and the easy life associated with it, but also it may reduce man to the helpless level of primitive homo sapiens now under the control of the forces of nature rather than in control of these forces himself. The occurrence of a nuclear holocaust could thus mean getting back to square zero. Unlike the primitive man who is anyway close to square zero, there are centuries of progress to lose. As a proverb in Igbo (a Nigerian language) summarizes the situation, "he who is already on the ground need fear no fall".

It is evident, therefore, in any effort to prick the conscience of the international community of scientists or of the gnomes of political power, that it is not often enough that benevolent action taken in the name of mankind bears any relevance to the real interest of the generality of mankind which in an absolute sense may exclude even those advanced nations espousing the good. In this regard, we have seen that though the physical consequence of a disaster such as a nuclear holocaust will be independent of geography, its meaning will be varied and will be culturally dependent. In order to fit the above conclusion into a proper context, it is evident that a nation's attitude to the issue of nuclear disarmament and nuclear non-proliferation will to a large extent be dictated by its position in the socio-political peck-order of the globe. Thus, if military capability is a guarantor of economic and political power, it appears logical to expect that a nation without political or economic clout and which can fall prey at any time to the militarily and economically strong nations, in reality can have no options as regards the issue of nuclear non-proliferation or disarmament. These issues are only meaningful to those nations that are economically and technologically buoyant, and which therefore can choose whether or not to develop a nuclear technology programme.

It seems that if Pugwash is to work for the welfare of the whole of mankind, it must be seen to be serving the interests of a broad spectrum of humanity and not just the vocal few who are affluent and powerful. This means that its conduct, organization as well as pre-occupation must not only reflect the global commitment of concerned citizens, but it must address itself particularly to those problems threatening the common values of humanity. Of all these values, it would appear that it is the pursuit of good quality of life rather than concern with or fear of death which is common to the generality of the human race.

Thus, while Pugwash (like the profession of curative medicine) will continue to combat such issues as the self-extinction of the human species (which problem in any case will cease to exist with complete nuclear disarmament), considerable attention ought to be given to such issues as how science can be used, not for warfare, but for the welfare of all mankind. That is, Pugwash ought to be addressing itself more to issues of social and political stability as well as justice in the world,

since it is an unstable world order that challenges human genius, through science, to the production of deadly weapons of destruction. The approach to international conflicts should therefore be more 'preventive' than 'curative'. In this regard, adequate attention should be given to such issues as 'the role of science and technology in the destabilization of the political world order', 'constraints to an equitable economic world order', 'latent north-south confrontation', 'failure of the UN Conference on Science and Technology for Development' and other related issues which directly or indirectly act as sources of international conflicts.

The universality of science is today an accepted phenomenon. Thus scientists constitute an international community collaborating routinely in promoting their discipline. It is, therefore, believed that the social responsibility of scientists is a matter that can be handled within the international community of scientists. Only too often, both the positive and negative spin-offs of science are not only identified by the scientists themselves but are 'sold' to the active users, whether these are economic or political entrepreneurs. It seems highly desirable that some kind of international control be placed on the misuse - especially for military purposes - of scientific knowledge. Pugwash could be helpful in working out procedures for dealing with such problems, in much the same manner that the United Nations, through the Legal Sub-Committee of the UN Committee on the Peaceful Uses of Outer Space (UNCOPUOS) has, by the enactment of multilateral treaties, established guidelines for scientific activities in outer space. This approach obviously assails not only accepted notions of 'academic freedom' of research workers in universities but also the 'right' to new knowledge, of sponsors of scientific research in other establishments. But these problems could be obviated if there were internationally instituted 'bill of rights' for scientific research workers.

Pugwash as a movement must in the final analysis evolve with the ever-changing socio-political world order. Recapturing of the spirit which inspired the beginnings of the Pugwash Movement may already have become irrelevant in a situation in which terms like "the world" and "mankind" no longer refer to the technologically advanced countries and their peoples respectively. Similarly, a Pugwash Movement which is essentially a club of like-minded people will, apart from degenerating into a regional group, also prove ineffectual as a lobby for educating and moulding world opinion on issues relating to the interaction of science with society and the social responsibility of scientists. Pugwash ought to represent an international forum for scientists to meet to discuss world problems in the context of science, with a view to influencing appropriate action. The organizational structure must reflect an international character which, while not insisting rigidly on numerically equitable national representation in the controlling organs, must nevertheless recognize the equality of all nations as well as a reasonable measure of geographical spread, while acknowledging the leadership capability of individual scientists.

CONFERENCE WORKING GROUPS

by R. Peierls and C. Schaerf

We know that working group discussions are often more amateurish than they ought to be after nearly 25 years of such discussions, and that their reports are often lacking in substance, repetitious and superficial. It is recognized that improvements could be made by better advance preparation of the work, and by a different form of reporting.

Advance preparation should include listing the questions relevant to the agenda,

and looking for papers which classify the nature and the background to these questions. These might include past working-group reports and papers from relevant Pugwash symposia. Where such material exists, references or copies should be made available to participants (keeping the amount of material reasonable). If such papers cannot be found, an effort should be made to get them written, by persuading suitable Pugwashites to write, or, if necessary, by commissioning.

Such suggestions have been made before, and in principle agreed to, but they have not been implemented, mainly because of two difficulties: (a) the late appointment of conveners; (b) the tradition of having two or more conveners for each group.

As a result of (b) each convener is reluctant to take any preparatory action without consulting his co-conveners and the delays in such correspondence in practice make progress impossible. The reason for having several conveners is the need for balance, particularly on sensitive topics. However, the people now called 'conveners' have three distinct responsibilities:

- A. Advance preparation
- B. To conduct the discussions. (This includes often, but not always, chairing the meetings)
- C. Drafting the group report

In B and C balance is important; it does not seem critical for A. We therefore propose to separate the functions and charge one person with the duties under A. Although this corresponds precisely to the original meaning of the term 'convener', we shall avoid confusion by using the term 'organizer'.

The organizer would, of course, be a person knowledgeable in the field of the working group. He could ask for advice from other experts to whom he has convenient access. If he wants to invite papers from Pugwashites in other countries, particularly on the other side of the ideological division, it would be useful to have a contact, or contacts, for such correspondence, but such people would not have the responsibility for the preparatory work. In this way the organizer would solicit papers on suitable aspects of the subject of the working group. However, contributed papers should be accepted, as at present.

For all the above it is essential that the organizer be appointed early, and here we encounter the difficulty labelled A above. The solution to this must involve some departure from present procedures. One move of this kind would be to give the organizer a place independent of the quota for his national group, so that his selection would not commit any place available to the group. This would, however, still leave the problem of the travel expenses of the organizer, which would be particularly serious if he belonged to a small group or one with poor resources. We have no specific solution to suggest, but feel that the cost involved is not very great and the possible advantages considerable.

A subsidiary problem might arise if the writers of background papers or other papers solicited by the organizers were not chosen by their national groups for participation (or for other reasons unable to attend). It might be worth taking a risk here, because in many cases people writing such papers will in fact commend themselves to their group; failing this, one should of course waive the usual rule that only papers by participants can be accepted. Such invited papers should be considered by the group even in the absence of the author.

Reporting. (Most of the following is based on suggestions made by members of the Symposium, but it is useful to present it in the context of the thoughts on advance

preparation). Most group reports contain (i) a few, if any, agreed and constructive statements, (ii) some problems on which no consensus was reached, but where the discussion led to a clarification of the nature of the disagreements, and (iii) an account of topics discussed without consensus or clarification.

It has been suggested that in place of an agreed report by the group there should be an account of the discussion by a rapporteur, which would be signed and be the responsibility of the rapporteur. Any items of type (i) must of course be submitted for approval by the group - one hopes they could be brief and would not take too long to formulate. On type (iii) the group would probably not insist on having their own say, provided it is made clear that the rapporteur's account does not commit the group. However, in some cases the group might suggest another person or two to whom the rapporteur would show his draft for comments, or who might even act as co-authors.

For the very important category (ii) it will usually be necessary for two or more people representing different viewpoints to be involved in the drafting.

The rapporteur should be selected in advance so as to allow him to take appropriate notes during the discussions. If others are to join him in the drafting, they could be added later, as the nature of items under (ii) emerges, or, if the situation can be foreseen, they could also be chosen at the beginning.

The rapporteur might be the same person as the organizer, but there are arguments against this. The organizer might, through his preparatory work, have formed firm views of the problems, whereas the rapporteur should keep an open mind. The rapporteur should not be a member of the Council, since Council duties during the Conference would interfere with his work as rapporteur. On the other hand, there might be no objection to the organizer being a Council member.

Summary of Proposals

Entrust the preparation of a working group discussion to one organizer, to be selected early (at least one year before the conference).

When necessary arrange for contact in other countries through whom an approach could be made for suitable authors for papers.

The places for the organizers not to be counted for the national quotas.

Some provision to be made for the organizers' travel expenses.

Reports from the working groups to be confined to brief statements of agreed recommendations or conclusions, supplemented by accounts of the working group discussions written and signed by a rapporteur, where necessary in consultation, or jointly, with others nominated by the group.

Rapporteurs to be appointed by the beginning of the Conference.

SUGGESTIONS FOR FUTURE WORK

by B.V.A. Röling

The first task of Pugwash has been to be a meeting place of East and West in a period in which almost no contact between East and West existed.

The scholarly contact was motivated by the wish of the scholars to inform the world about the effects of atomic warfare.

At present many contacts exist between East and West. In this respect Pugwash

has lost its original significance. Many publications inform the world about the effects of nuclear weapons. But, here is still a task for Pugwash.

1. To inform the world about innovations in weaponry, and about the character and effects of these innovations.
2. To discuss innovations in strategies which may have very dangerous aspects. An example is the introduction of the concept of limited nuclear war, in which tactical nuclear weapons are considered as usable combat-weapons.

Consequently, in the future Pugwash might continue discussing the arms situation, and continue informing the public about dangerous aspects of it.

In this connection I would like to suggest discussions in the future about the concept of security. It was from the beginning related with military matters: it was the function of the military to provide for external security, military security, security which might be threatened by the opponent's use of weapons.

Clear distinctions should be made here between two dangers related with weapons.

1. The danger that an opponent might misuse his weapons for armed attack, or coercive diplomacy. This danger is translated in 'fear of the Russians', or 'fear of the Americans'. In connection with this kind of fear, nations want to have national armed power so that an opponent will not misuse his armed power; hence a desire to establish some kind of 'balance of power' to provide for 'enemy security'. .
2. The danger that stems from the weapons themselves, apart from the people that possess the weapons. If opponents have a 'disarming first strike capability' war will be almost inevitable, whoever the opponents are. A weapons posture thus may constitute a separate danger of its own. This is already the case if a state has the military capacity for an effective surprise attack.

There are other dangers related with specific weapon postures. I mentioned two cases in which, in time of peace, the weapons situation gives a premium on haste. The same may be the case in time of war. Specific weapons (e.g. the eurostrategic weapons) or specific weapon postures may lead to the wish of one party to destroy them as soon as possible and, for that very reason, may urge the other party to use them before they are destroyed. Destabilizing weapon systems may lead to sudden escalation of the fighting, which would be disastrous in the case of accidental, inadvertent war between East and West (a war that is far more probable than a war deliberately begun by one of the parties).

Offensive and destabilizing features of weapons and weapon systems that may bring about that the danger lies in the weapons themselves. If that is not the case, one could say that weapon-security exists.

In my opinion the distinction between "enemy-security" and "weapon-security" should be stressed. Measures to provide for the former often are damaging the other. Together they form "military security".

The emphasis on the concept of 'security' is desirable also for another reason. The growing economic interdependence, implying for the rich countries a dependence on raw materials in Third World countries, has brought to the fore the concept of economic-security which is related to the danger that economic interests might be endangered or violated by non-military actions in the economic field, e.g., an oil-cut-off. The regular and sufficient supply of oil is going to be considered a military responsibility: 'rapid deployment forces' are established to perform this task.

The same development can be seen in the ideological field e.g., the willingness for military reaction to ideological challenges, as is the case of Afghanistan. It seems

to me that here an ominous development is taking place. It might be the task of Pugwash to stress the principle that the only legitimate function of armed power is to resist an armed attack (art. 51 UN Charter). The concept of security should be limited to military security. Interest-security should be provided for by other means. In the atomic era the use of weapons is too risky.

It should be noted that the introduction of rapid deployment forces may have disastrous consequences in the field of armament. The prospect that these forces might be used will provide Third World countries with strong incentives to arm, even to go nuclear! The more powerful they are, the more a superpower might hesitate to use force.

In case armed force will be used against a Third World country by one superpower, the probability exists that the victim will seek protection by the other superpower. North-South conflicts in this way enter East-West relations. The introduction of 'rapid deployment forces' might therefore enhance the wish of the superpower to have superiority over the other, to deter its involvement. Hence, the chances of arms control and disarmament diminish considerably.

In this connection Pugwash might stress the observance of the prohibition of the use of force, as formulated in art. 2 par. 4 UN Charter. If the state is considered to be entitled to use force in case of economic actions or ideological developments, the prohibition of war loses all significance. The world returns then to the old situation that every state decides in what cases it is entitled to go to war.

More than ever the world needs the strict rule that war is prohibited, that it is prohibited to begin with the use of force, especially now that it has become clear that a nuclear war might totally destroy the participants, and every 'limited war' might escalate to atomic warfare.

Pugwash should stress the validity of the existing law prohibiting the use of force, and should emphasize that the only function of national military power is to provide for military security. But Pugwash might go further and take the stand that a link exists between the right to use armed force and the right to possess armed force. If the only legitimate function of national military power is to deter the other party from using its weapons, the conclusion could be drawn that the possession of arms capable of going beyond that function is prohibited. Consequently, the arms posture should express the function of inoffensive deterrence. Norms might be developed by which arms with more extended potentialities are forbidden. Especially for the European theatre, the concept of inoffensive or defensive deterrence is valuable.

Principles and rules should be developed to be applied in disarmament negotiations, based on the legitimate function of military power.

It is in the first place within the United Nations that these principles should be formulated. The Final Act of the Special Disarmament Session has created several bodies in which these issues should be discussed and decided. It is the historic mission of the smaller powers to establish these principles. The superpowers have failed to arrive at effective arms control. The Special Session was already the expression of impatience of the smaller powers. They should continue to stress the principles which should serve as guiding principles for arms control, and which in the future might constitute a body of legal rules concerning the legitimate possession of armed power. The basic principle being the right to possess arms is not unlimited. Further elaboration of rules is needed concerning the prohibition of offensive or destabilizing weapon-postures.

Pugwash should especially appeal to the smaller states. They should become more active in matters of arms control. They have a task in the global context, in the

United Nations. They have also a task in the alliances, in NATO and WPO, compelling the alliances to become instruments of detente and arms control. The growing awareness of the growing danger to which the smaller partners are exposed - now that the concept of the limited war is coming up, and nuclear weapons are more and more considered as combat-weapons - warrants such an appeal.

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I hope that other papers will deal with the topics of human rights and development issues. They belong to fields in which Pugwash should be active. The proposals in this paper are restricted to weapon-issues. But this does not mean that other issues should be excluded from our suggestions about future activities of Pugwash.

SHOULD PUGWASH CONTINUE AS A GROUP OF INDIVIDUALS?

by J. Rotblat

A. Principle of individuality

1. From the very beginning the main and unique feature of Pugwash has been that those taking part in our activities did so in their individual capacities and represented nobody but themselves. In discussing the future of Pugwash all dogmas need to be re-examined from the point of view of their applicability to the current situation. This should include the principle of individuality, as defined above, particularly since I understand that a suggestion has been put forward that this principle be abolished, although I do not know the reasons behind this suggestion.

2. A possible reason might be that the principle of individuality did not work in practice; I have not seen evidence to this effect. I am fully aware of the limited applicability of the principle. In some countries some participants may be briefed before coming to a Pugwash meeting; moreover, the selection of participants from some countries may be such as to ensure that many of them hold 'official' views. But this is never admitted openly, and this fact is by itself very important. It means that a participant, while fiercely arguing for the views he holds and opposing those of others, will never say "your views are unacceptable because they conflict with the brief I have received". As a result of this, from time to time we manage to reach agreement on an important issue, with both sides having compromised; this would have been impossible if everybody stuck to his remit. In my opinion, the principle of individuality is at least partially fulfilled.

3. Another reason for abolishing it might be that it is not in the best interests of Pugwash. Such a reason would be acceptable only if evidence were produced that an alternative policy would be more beneficial to Pugwash.

4. Among alternative policies one can envisage that Pugwash participants are sent as delegates of some national scientific body, for example an Academy of Sciences, or of an international body, such as IUPAP or ICSU. I mentioned scientific bodies because I assume that Pugwash would continue as an association of scientists, but one might also think of representatives from semi-scientific bodies (e.g. the International Institute for Strategic Studies), or from peace research institutes, or from the UN family of organizations (members of which in the past attended only as observers); or perhaps even from semi-official bodies, for example, advisory panels of some governmental departments. It is my strong conviction that any such system of representatives or

delegations, far from fulfilling the aims of Pugwash, is likely to bring its demise.

5. In paragraph 2, I have indicated why any brief from an outside body is likely to result in even fewer agreements than we have scored in the past. But more importantly, Pugwash would then become vulnerable to changing political moods, and to the consequences of crises the solutions of which is one of our aims. I shall illustrate this danger with two examples:

a) USA-USSR Committee. I refer to the American-Soviet group which had been meeting alternately in the two countries to discuss arms control measures. It was an offshoot of Pugwash, but had a more official character, the participants being closer to their governments than other Pugwashites. What was the fate of that group? It terminated abruptly when the Vietnam war entered into a serious phase, because no negotiations having any semblance of officialdom were allowed to continue. But in Pugwash talks on Vietnam did go on (we were even able to play a role in negotiating a solution to the conflict), and this was possible only because we were a completely informal body.

b) The Afghanistan Crisis. The reaction of many American scientific bodies to the Soviet military intervention was to suspend all relations with the Soviet Union. If Pugwash consisted of representatives of such bodies we would have to cut-off our activities at the very time when the contacts were most urgently needed. Indeed, Pugwash - because of the principle of individuality - was perhaps the only group to keep the debate going at the time of crisis.

6. It is interesting to note in this connection that the Federation of American Scientists, which advocated a boycott of contacts with Soviet scientists because of the dissidents issue, specifically exempted Pugwash from the boycott, recognizing our special status.

7. It is also worth recording that the observers from the UN agencies always implore us to continue in our informal manner as the only hope of making progress on issues on which they get bogged down.

8. Over the years various groups sprung up with aims similar to Pugwash but with formal constitutions. They foundered, or are in a state of decay, while Pugwash lives on. It is also mainly because of our informal character that Pugwash is being looked at as a model for successful international negotiations.

9. My answer to the question in the title of this paper is therefore an emphatic yes. But there are two corollaries to this:

a) As a group of individuals our activities must be independent, i.e., we should not undertake joint actions with other bodies or sponsor them; this does not preclude accepting specific tasks, or commissions, from bodies such as a UN Agency, as long as the tasks fall within our sphere of interest and there are no strings attached.

b) If our success is due to our informality and individuality, let us not counter-act it by too much structure and bureaucracy; in particular, I feel that the concept of constituencies is too cumbersome and restrictive; we should revert to the method of electing the Council by acclamation at a Quinquennial Conference. For the same reason, I feel that the Council is excessively large. The Rehovot Symposium is concerned with principles rather than specifics of organization; therefore I shall not enlarge on these points, but I hope that the Symposium will recommend that there should be fewer organizational restrictions in Pugwash.

B. Selection of participants

10. A new method for Pugwash, but one generally practiced in scientific conferences,

would be to invite scientists at large to apply for participation in the Annual Pugwash Conferences. Council would send out a circular letter, or advertise in scientific journals the agenda of a forthcoming Conference (to a certain extent we have done this for the Banff Conference, due to the high fares), but would reserve the right to refuse an application, mainly for the sake of maintaining a geographical balance.

11. This method would take care of travelling expenses, and if we charged a registration fee it could even be a source of revenue. But I am not in favour of it, at least not at present, since it may result in a haphazard participation and a lack of expertise. In any case, the method could not be applied universally, and we would still have to provide fares for scientists from developing countries. In the course of time, when the standard of discussion at Pugwash meetings was sufficiently raised (see paragraph 13), and a large number of scientists apply for a small number of places, we could select by this method a good participation, for example, using as a criterion the quality of a submitted paper.

12. For the time being I suggest that we continue with the present method of invitations by nominations from National Groups. But Council should keep a wary eye on some National Groups, which may consist perhaps of one member; in such cases the nominations should be made directly by Council.

13. With much reluctance I submit another suggestion intended to raise the standard of debate, and to ensure the presence of a core of experts in any of the Pugwash meetings. The suggestion is to commission some papers for a fee, and to offer to pay travel expenses of some participants from central funds. The reluctance stems from my idealistic approach to the intrinsic importance of Pugwash issues, but I have to recognize the facts of life, i.e., that even high-principled people, when many calls are made of them, put a preference on writing a paper for which a fee is offered, or attend a Conference for which all expenses are covered.

14. To carry this out in practice would require additional funds, and here I have to make another reluctant proposal: about half the money we are now spending on airfares for participants from developing countries should be used for the above purpose. I believe it is more important to ensure a high standard of our activities than to have scientists from a large number of countries, particularly if some of these scientists do not contribute much to the meetings (this applies as well to participants from developed countries, but at least we don't pay their travel expenses). It would of course be preferable to have more money so that there would be enough for both purposes. I hope that the Symposium will give serious thought to new ways of raising funds, because our survival largely hinges on this mundane issue.

SHOULD PUGWASH GO PUBLIC?

by J, Rotblat

1. The question whether our meetings should be closed or open has been with us from the very beginning, but recently the pressure to go public has increased, even though I have not seen any specific proposal.

2. The issue was debated and decided at the very first meeting of the Pugwash Continuing Committee in December 1957. The two leaders in the debate were Bertrand Russell, advocating open meetings, and Leo Szilard, for closed meetings. The latter won, after the Committee looked into ways of tackling the most urgent problems at that time, and taking into account the views of eminent scientists in the UK and USA, whose comments were invited in a questionnaire.

3. I should add that subsequently Russell himself came round to the idea that Pugwash meetings should be closed; he thought that other bodies, such as the Campaign for Nuclear Disarmament would be more suitable to address the public.

4. It should be also noted that - as with everything in Pugwash - the decision not to go public was never adhered to rigorously. In 1958, after the Kitzbuhel Conference, Pugwash held a huge public meeting (an audience of about 10,000) in Vienna. After each Conference we issue a public statement, although little notice is taken of it by the media. Occasionally we also resort to direct exhortation of the public, as for example from the Breukelen Conference. At least one of the plenary sessions of the Annual Conferences is open to the public and the media. Some of our publications, i.e., the Symposia Monographs, are available to everybody; and other publications (Proceedings and Newsletters) are semi-public.

5. The criticism that we are a secretive society is therefore not justified. A more valid criticism would be that we have not learned how to make better use of the occasions when we do go public.

6. In discussing whether Pugwash should adopt new policies on this issue, it is important to distinguish between two different aspects of going 'public'. One, whether we should become a pressure group and appeal directly to public opinion, and the second, whether our meetings should be open to the general public and the media.

7. With regard to the first aspect, I should like to state my strong belief in the force of public opinion. For example, I am convinced that the governments in the West will not make a move to limit the nuclear arms race, unless forced by public opinion. Several mass movements have recently started in a number of European countries, and there are signs that their influence is growing. In my opinion this is an important positive trend.

8. Having said this I hasten to add that I do not think that Pugwash should become a mass movement. As individuals we can take part in such movements, but I cannot see the place of scientists as leaders of a mass campaign. Such a role could not be played by Pugwash in any case. A mass campaign implies an agreed policy on a number of issues, and this we cannot have, and should not have, in Pugwash, which basically is a debating society.

9. However, I do envisage an important role for Pugwash in relation to mass movements against the continuous arms race. I propose three areas of activity:

a) to continue, and keep up-to-date, the debate between East and West on measures to limit the arms race, so that when Governments decide to start negotiations, a blueprint for them would be ready. The type of discussion at the 35th Symposium in Racine, in 1980, seems to be the most suitable for this purpose;

b) to prepare factual material for the mass movements and thus facilitate their aims. I have in mind correct information about the arms race, consequences of a nuclear war, assessment of risks in different strategies, etc. An example of this type of activity is the statement from the medical group at Breukelen, but it would have to be prepared much more thoroughly;

c) (partly a pre-condition for (a) and (b)) self-education on the various aspects of the arms race and the threat of a nuclear war. At one time many Pugwashites could consider themselves experts in these matters, but this period has long passed. Most of us are pure academics. With the increasing complexity of military R & D, we become less and less knowledgeable about the detailed technological aspects of nuclear weapons, so that we are not in a position to assess the validity of claims made for new

weapon projects by the scientists working in the 'establishment'. It is vital that independent scientists, such as in Pugwash, study these problems in depth and thus help to create an informed public opinion. An example of this type of activity are the reports prepared by Kosta Tsipis's group at MIT.

10. I believe that if these three tasks were fulfilled, we would have contributed more to the abatement of the arms race than by direct action.

11. Before leaving this topic I should explain that I have illustrated these tasks with the example of the nuclear arms race for two reasons: (a) I believe this to be the most urgent matter at the present time; (b) I do not know enough about the other aspects of Pugwash work, in particular about problems of developing countries. I hope that those knowledgeable in the latter will expand on the role of Pugwash in these aspects.

12. I come now to the question whether our meetings should be open to the public. Several options can be envisaged:

- a) all Pugwash meetings are open to the public and media;
- b) the Annual Conferences are open, but not Symposia and Workshops;
- c) only plenary sessions at the Annual Conferences are open;
- d) only some plenary sessions at the Annual Conferences are open;
- e) no Pugwash meetings are open.

Variants on the first four options would be that only representatives of the media, but not the public, are admitted.

13. As already stated, some of these options have been tried out in the past and therefore we can speak from experience.

14. I cannot see any advantage in admitting members of the public to our normal meetings, except for ceremonial occasions, such as the opening session of the Annual Conference, or when outside dignitaries attend. What would be the role of members of the public at our ordinary working sessions? I presume they would not be allowed to speak. But could we restrain them from intervening, particularly - as often happens - if they have their own pet ideas which they consider to be more important than the items on our agenda? In any case, would not the presence of an audience inhibit a free debate and encourage speech making? I am sure it would, to the detriment of the quality of our deliberations.

15. This leaves the more realistic issue of members of the media. I imagine that the reason for the desire to invite them is the hope that this will result in more publicity for Pugwash activities. But if reporters were invited for this purpose, we could not impose on them conditions about their reporting. They will report what they consider newsworthy which could include any sensational or half-baked idea which came up during the debate. It would also be difficult to insist that no names are mentioned, or specific views attributed to named individuals. Under those conditions, the presence of the media is bound to stifle a free discussion. For this and other reasons (e.g., how to limit the numbers of reporters in a specific meeting) I believe that opening all our meetings to the media would do more harm than good.

16. Another way would be to invite members of the Press individually (say, some science writers) and treat them as observers. In this case we could impose our usual rules about reporting. This method was used in several Conferences, but we gave it up as unproductive. There was very little more reporting in the Press, but worse, the science writers were not content just to listen; they wanted to talk, and

some talked a great deal, to the annoyance of participants.

17. This leaves us with option (d), to have at each Conference one or more plenary sessions open to the media and (accommodation permitting) the public, with set speeches on a subject of current interest, and with the opportunity for a discussion from the floor. The evening session at the Munich Conference is a good example.

18. Two further suggestions for publicity: (a) if the Conference agrees to issue a public statement (as in Breukelen), a special open session for the media and public should be held to release the statement; (b) in conjunction with a Pugwash activity (e.g., symposium, workshop) a public meeting should be organized, with invited speakers presenting a range of views. An example is the public meeting held in London at the time of the 36th Symposium.

19. Some of the fact-finding material mentioned in paragraph 9(b), could also be the topic of such meetings. This would be particularly suitable for the scientific community.

20. To sum up. In my opinion, the present system of closed meetings in normal Pugwash activities should continue, but special sessions open to the media and the public should be held at the opportunity of Pugwash meetings. A greater effort should be made to collect factual material, which would be useful to Pugwash as well as to other bodies concerned with peace and disarmament; the material should be made available to them via public meetings or publications.

21. This brings me to the problem of Pugwash publications. The idea of a Pugwash Journal seems to have foundered, which leaves us with the monographs from some Symposia, and with the domestic publications - the Proceedings and Newsletters. Apart from Pugwashites, these are made available to bona fide interested parties, but in their present form I do not think they should be put on the open market. Thought should be given to the preparation of public versions of the Newsletter and Proceedings and to the publication of papers from the Symposia which do not result in monographs. The standard of the papers - particularly those proffered to the Annual Conferences - is very uneven, as no system of refereeing is applied. Such a system would be necessary for an open publication, which should therefore contain a selection of the material presented at our meetings. This could be a yearly publication, with a title such as "The Annals of Pugwash"; it would be produced in the same way as the Proceedings are now and made available to anybody at cost price (unless a commercial publisher would undertake to produce it).

22. Finally, about public statements from Pugwash. In view of the sensitive nature of many of the topics of our deliberations, the present policy, whereby only the Council, or the Executive Committee, is empowered to issue public announcements in the name of Pugwash, should be continued.

SOME COMMENTS ON THE FUTURE OF PUGWASH

by U. Smilansky

I was fortunate to receive Professor Calogero's paper while collecting the notes for my own contribution to this symposium. I was glad to find such a clear and eloquent view of Pugwash, which I can second. This is why I can skip much of what I was intending to write and concentrate on two points that are put forward in

Professor Calogero's paper, and which in my opinion should be sharpened.

1. Professor Calogero defines as the main task of Pugwash: "to address the more difficult and controversial world problems, in particular those that have an important scientific and technological component". To this definition I would like to add a restriction, namely, that Pugwash should address itself only to those difficult and thorny problems to which it can offer a novel approach or an unconventional point of view. Only when both conditions are satisfied, the amateurish aspect of Pugwash becomes an asset. In my opinion, the fact that Pugwash contributed significantly to the launching of negotiations on nuclear arms controls was due to the fact that at that time both Professor Calogero's definition and my qualification were satisfied.

I am not convinced that, today, nuclear armament should constitute the major issue for discussion in Pugwash. No doubt it is the most awesome problem which faces humanity, but Pugwash should come back to it only when Pugwash has something new to contribute to this subject.

During the past few years Pugwash dedicated a considerable amount of time to The "North-South" exchange of technology and related problems. Again I doubt whether this subject qualified, especially because I am not aware of the novel ideas or approach that Pugwash has offered.

The Israeli Pugwash group suggested an alternative course to the preoccupation with the attempt to abolish the means of total destruction. We proposed to discuss the conflict of interests which might trigger nuclear wars. Guided by this idea, we submitted a proposal to the Executive Committee to organize a workshop on "The danger to world security arising from the quest for oil". Unfortunately, the Executive Committee did not consider this subject appropriate. I am afraid that if Pugwash continues to reject such difficult, but non-fashionable world problems, the future of Pugwash is in jeopardy.

2. Pugwash seeks to make valid contributions in the resolution of major problems. For this end the Pugwash community has to establish links with government representatives who are actively involved in the political scene. Without these links Pugwash loses an important element which distinguishes it from being just another debating club.

The degree to which such contacts are obtained, and the intensity of feedback from the political world into Pugwash, establish an important criterion for assessing the role of Pugwash, especially as seen from the non-Pugwash side. I have an uneasy feeling that the attitude of the outside world to Pugwash is deteriorating. An indirect evidence for this statement can probably be derived from the absence of McGeorge Bundy, W. Brant, H. Kissinger, G. McGovern, R.S. McNamara and C. Vance from this Symposium due to priority claims on their time.

In summary, after reading the papers which were contributed to this Symposium, and after discussing the matter with a few friends, I sense some degree of dissatisfaction with the course that Pugwash is taking these days. I tried to concentrate on those symptoms which in my opinion were not strongly stressed before. I hope that these comments will be helpful in our critical examination of Pugwash.

THE SECOND INTERNATIONAL STUDENT PUGWASH CONFERENCE

This Conference, under the title "Moral Dilemmas of Technology and Democracy", was held on 15-21 June 1981, at Yale University, New Haven, Connecticut. Seventy-five students, selected from a large number of applicants, participated. Most of them came from the United States, but there were also students from Bangladesh, Bulgaria, France, India, Netherlands, Norway and the UK.

In addition to the students there were thirty-six 'faculty members' i.e., senior scientists who gave papers at the plenary sessions, as well as acting as conveners of the working groups. Among the faculty members were scientists who have attended the senior Pugwash Conferences i.e., F. Barnaby, B.T. Feld, J. Rotblat, J. Steinbruner, J.J. Stone, T. Taylor and F. von Hippel.

There were five working groups on the following topics:

- Biomedical Technology and Health Care
- Computers and Society
- Energy, The Economy, and the Environment
- Weapons and World Peace
- Regulation of Science and Technology

The plenary sessions, which were open to the public, covered on the whole the same topics as the working groups, but additional topics discussed included "Science and the Role of the Media", "Experiencing Nuclear Holocaust", "A look to the Year 2000". During the opening and closing sessions some of the problems of the senior Pugwash Movement and the relation between the student and the senior Pugwash Conferences were discussed.

The success of the Conference was assured by the untiring efforts of the organizers, Jeffrey Leifer and Gregory Gross.

An assessment of the Conference will be presented at the Banff Conference and included in a future issue of the Newsletter.

OBITUARIES

Barbara Ward (Baroness Jackson) of the UK, died on 31 May 1981 at the age of 67. She was a recognized world authority on development economy, and one-time Professor of International Economic Development at Columbia University. She participated in the 20th Conference in Fontana, Wisconsin.

Dr. Karl Evang of Norway, died on 3 January 1981 in his 77th year. He was a distinguished international figure in public health, and served as Director-General of Health in Norway and as an adviser to the World Health Organization for many years following World War II. Dr. Evang attended the 17th Conference in Ronneby, Sweden.

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CALENDAR OF FUTURE MEETINGS

1981

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| 28 Aug - 2 Sept | 31st Pugwash Conference, Banff, Canada |
| 11-12 Dec | Fifth Workshop on Negotiations on SALT and Nuclear Forces in Europe, Geneva, Switzerland |
| 12-13 Dec | Second Workshop on Averting Nuclear War: the Role of the Media, Geneva, Switzerland |

1982

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| February (tentative) | Symposium on Scientists, Arms Control and Disarmament, (in collaboration with UNESCO) Corsica, France |
| 26-31 Aug | 32nd Pugwash Conference, Warsaw, Poland |

1983

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| August | 33rd Pugwash Conference, Sri Lanka |
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