

February 23, 1965

M.O.

Academician Millionshikov  
Academy of Sciences of the USSR  
Moscow, USSR

Dear Academician Millionshikov,

In accord with the recommendations of the "Report of the Special Working Group on Biological Warfare" prepared at Karlovy-Vary (see attachment # 1) as approved by the last Pugwash Continuing Committee meeting in London, a study group was set up under Pugwash auspices to discuss means of preventing the preparation and use of biological weapons. This study group has held a one-day meeting in Geneva on January 31, 1965. A list of participants is appended (see attachment 2).

The discussion at Geneva achieved substantial consensus on certain general principles which might guide the formulation of detailed proposals. It was agreed that biological weapons should, at least initially, be considered apart from chemical weapons. This was mainly because the possible development of biological agents into extremely light-weight weapons places them in the category of potential radically cheap means of mass destruction. Furthermore, it was agreed that not only the use but also the development of such weapons should be prevented. However, it was felt that a simple prohibition on the development of offensive biological systems would be unworkable, due to the difficulty of achieving general agreement on the definition of offensive as opposed to defensive activities. Instead, it was agreed that workable proposals might be based on the principle that States would agree not to conduct secret work in biology. Clearly there are difficulties in the application of even this principle but several considerations led us to conclude that it might nevertheless be the key to substantial progress.

- 1) Even the partial reduction of suspected or actual secrecy can be beneficial. Such reduction can act to undercut the argument in one State that biological weapons must be developed in order to offset their possible development in another State. Also, it can act to strengthen the political and moral inhibitions on the development of biological weapons. Furthermore, the reduction of suspected or actual secrecy may be accomplished by measures which themselves have value as forms of peaceful international cooperation and exchange.

- 2) For technical reasons which I will not detail here, defences against biological attack can, to a large extent, be studied and developed without requiring the parallel development of offensive systems. This should facilitate the relaxation of secrecy in defensive work and opens up the possibility of international consultation and collaboration on defensive measures.

After discussing general principles, the group at Geneva turned to a preliminary consideration of concrete measures which might be proposed. These included (1) A pilot agreement to refrain from secret biological work in a small group of European countries representative of Eastern, Western, and non-aligned nations. (2) Possible international cooperation in the area of detection and defense. (3) Possible arrangements to investigate allegations of preparation for or actual uses of biological warfare.

It was agreed that various working papers on these and related matters would be prepared in time for use at Trieste or Venice this coming April. A memorandum outlining the content of assigned working papers is enclosed (see attachment # 3).

It was unanimously considered that Soviet participation is essential to the continued progress of our discussions. The Geneva group unanimously felt that a separate working group on Biological Warfare should be set up at the Venice meeting if appropriate representation from the Soviet Union and other key countries could be arranged. It may be that special funds are available for this purpose through the generosity of the Swedish Peach Institute. More authoritative and definite information on possible arrangements for Trieste or Venice should be awaiting your return to Moscow in the form of a letter from Professor Rotblat.

Sincerely yours,

Matthew Meselson

- Enclosures:
- 1) Report of Special Working Group on Biological Warfare
  - 2) Summary of Assignments for Members of Special Study Group on BW Control
  - 3) List of Participants in Pugwash Study Group on BW

Attachment # 2

PARTICIPANTS IN PUGWASH STUDY GROUP ON BW

Geneva, 31 January 1965

Professor A.A. Buzzati-Traverso, Director, International Laboratory of Genetics and Biophysics, Naples, Italy

Dr. Robert Goldwasser, Director, Weizmann Institute of Biological Research, Rehovoth, Israel

Dr. C.G. Heßen, Director, Bacteriology Department, Karolinska Institutet, Stockholm, Sweden

Dr. M. Kaplan, Lanchenale, La Pallanterie, Vesenaz, Geneva, Switzerland

Dr. P. Lindop, St. Bartholomew's Hospital, London, England

Professor O. Noelke, University Institute of Microbiology, Copenhagen, Denmark

Academician I. Malek, Ceskoslovenske Akademie Ved, Prague, Czechoslovakia

Dr. H. Marcovitch, 1<sup>er</sup> Institut Pasteur, Paris, France

Professor M. Meselson, Harvard University, Cambridge, Massachusetts, USA

Dr. K. Reska, Director, Communicable Diseases, WHO, formerly Director, Institute of Epidemiology, Prague, Czechoslovakia, Present address, Geneva, Switzerland (WHO)

Professor J. Rotblat, 8 Asmara Road, London N.W.2., England

In addition to the above full-time participants, discussions were also held with:

Dr. J.C. Kendrew (Great Britain)

Professor A. Tiselius (Sweden)

Dr. F. Jacob (France)

Professor A. Engstrom (Sweden)

(Academician) V. Zhdanov (USSR)

Summary of Assignments for Members of Special Study Group on BW-Control

(Geneva, 31 January 1965)

Buzzati-Traverso, Goldwasser, Heden, Kaplan, Maaløe, Malek, Marcovich, Meselson, Raska, Rotblat, Lindop

The following paragraphs are based on the assignments made at the meeting. They have been supplemented with ideas discussed at the meeting that were not necessarily part of the assignments, and which should only be regarded as hints that may or may not be incorporated in the different sections.

1. With regard to possible short and long term aims and tasks for the BW study group, Kaplan will discuss the importance of attempting to define defensive as opposed to offensive work on BW. In this connection he will mention the limitations of specific protection (vaccines, sera) and the benefits that could be derived from joint efforts concerned with physical defence measures. He will point to the limits in our current knowledge and emphasize that special studies are required to insure that inspection and control groups operate with maximum efficiency. One such study would be to determine what kind of data the military require to accept a specific biological weapon as operational and ready for incorporation into the standard arsenal. Another study would be concerned with the collection of data on national expenditures in the area and on national policies. Finally, a special study might be required in order to establish the most suitable phase in BW disarmament activities for initiating inspections of allegations of BW attacks and the most suitable mechanism for setting up the teams involved (see also item 6).

It is presupposed that the most recent figures on the US Army expenditures for research, development and procurement in the CBW area will be mentioned and that Humphrey will communicate any information on British policy and expenditures to Kaplan for being incorporated into this part of the report.

2. General considerations with regard to BW and a discussion of the usefulness of partial and complete declassification as a means for control

will be provided by Meselson. In this connection he will advocate the case for a model inspection scheme in Central Europe. The means of overcoming mutual distrust by proceeding gradually from non-sensitive to sensitive areas (both technical and geographical) will be discussed. The possibility of initiating the activities by limiting inspection to production and testing facilities which go beyond the current needs of a country, as far as preventive medicine is concerned, might be considered. Inspection in the arctics (Rich-Winogradov), spreading stepwise to the Scandinavian countries and finally to Canada might be touched upon as a conceivable alternative or additional possibility. Probably only facilities of limited military value exist in the arctic regions which however are the starting point for a meteorological condition known as "polar outbreaks" which might conceivably become important for strategical BW applications.

Hedén will endeavour to establish the official USA (Housewright) and USSR (Zhdanov) policy with regard to the borderline between open and classified efforts in the BW area. It is understood that no attitude will be expressed with regard to the decisions made since a case can be made both for disseminating information and for classifying it in order to guard against the spread of BW capability.

3. A general discussion of the composition of inspection teams, terms of reference and method of work will be provided by Malek and Meselson. The value of including the officer in charge of national vaccine and serum control into the team will be emphasized. The indications afforded by extensive studies of agents not currently endemic or threatening will be mentioned. Also the value and limitations of registration of personnel and the procedures for material accounting (fermentors, primates - especially chimpanzees, incinerators, autoclaves, centrifuges, media, etc.) and for fiscal controls of expenditures will be discussed. Finally the importance of continuous records of epidemics, epizootics and localized travel restrictions will be mentioned as examples of possible indications of extensive field testing.

4. The possibilities of making use of existing international channels for guarding against military applications of newly acquired microbio-

logical knowledge will be discussed by Hedén. He will briefly survey existing international organizations with a responsibility in microbiology and how they could be used for establishing contacts over experiments which yield data which are disturbing from the point of view of potential applicability. The pros and cons with regard to such contacts will be discussed. Also he will consider the ICSU groups on potentially harmful effects of scientific activities (COSPAR, IUBS) and current projects (UNESCO) concerned with one or more international laboratories in the field of applied microbiology. He will emphasize that the delegation of the production and testing facilities required for the development of biological control agents to such laboratories will eliminate the argument for national facilities which could well be used in connection with BW. The same laboratories might also be charged with studies of planetary samples.

5. Continuing the argument for international facilities Raska will point out that the smaller nations will require a guarantee that their interests with regard to protection against "exotic" infectious diseases is well taken care of, if they are to cut down on their own research and development work in the area. Such a protection might for instance require advanced research and an international antibiotics and vaccine "bank".

6. Raska and Kaplan will cover the problem of allegations of a BW attack. They will emphasize the importance of improving epidemiological data in order to provide a background for investigations of allegations. The technical aspects of such investigations will be discussed and the role of the UN and other organizations (like the Red Cross) in this connection will be considered. The present limitations in the WHO capabilities will be stressed. The advantages and limitations of a private group as opposed to for instance a Security Council mission will be mentioned but also the importance of quick actions. Finally the possibility that claims of an attack might be made for political purposes will be pointed out, and the importance of a stepwise development finally involving also the attacker will be emphasized.

7. Hedén will endeavour to secure a report by Swedish and international specialists on the possibility of using a mechanized documentation center to provide data on the basis of which inspections can be planned. The dangers and advantages of such a facility if used for intelligence purposes will be pointed out and its value as a means for providing bodies like the WHO with the current scientific information required for "normal" efficient operation will be stressed.
8. A general discussion on the equipment required by an inspection team and on the technical processes suitable for BW detection (fluorescent antibody techniques, etc.) will be provided by Goldwasser.
9. A review of the Western European Union experience with regard to inspection and control will finally be provided by Marcovich in order to set the proposed activities in the perspective of current experience.