

# The fifth BTWC Review Conference<sup>1</sup>

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16th Workshop of the Pugwash Study Group on the Implementation of the Chemical and Biological Weapons Conventions

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Workshop Report  
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This was the sixteenth of the current Pugwash workshop series on chemical and biological weapons (CBW), held in collaboration with the Harvard Sussex Program on CBW Armament and Arms Limitation (HSP). Like the seven preceding workshops of the series held in Geneva, it was hosted by the Swiss Pugwash Group. Financial assistance for the meeting was provided by the Swiss federal government and by the Canton of Geneva through the Swiss Pugwash Group. The meetings were held on the premises of the Graduate Institute of International Studies, University of Geneva.

Participating by invitation were 54 people from 20 countries (Belgium, Brazil, Egypt, Finland, Germany, Hungary, India, Iran, Ireland, Israel, Italy, The Netherlands, Pakistan, Russia, South Africa, Sweden, Switzerland, Taiwan, United Kingdom, and the United States), all of them doing so in their private capacities. The present report is the sole responsibility of its author, who was asked by the meeting to prepare a report in consultation with the Steering Committee. It does not necessarily reflect a consensus of the workshop as a whole, or of the Study Group.

The workshop focused on the Fifth Review Conference of the 1972 Biological and Toxin Weapons Convention (BWC), which began in the week preceding the workshop and was scheduled to continue until 7 December 2001. The rejection by the United States of a draft text of a verification protocol for the BWC during the July/August session of the Ad Hoc Group—which was tasked in 1994 with the negotiation of a legally-binding instrument to strengthen and verify compliance with the BWC—led to what could be termed a crisis in international multilateral disarmament diplomacy. The Fifth Review Conference and its outcome could prove pivotal to the future of both biological and chemical disarmament. Furthermore, in the wake of the events of 11 September, controlling such horrific and morally abhorrent weapons was given an even greater imperative and wider global attention.

After reports on the general status of the CBW treaties, workshop participants devoted discussion to the key issues under discussion by the diplomats involved in the Fifth Review Conference and explored possible ways to influence the negotiations. The topics discussed included: interim supportive institutions, national implementation measures—including the draft text of a draft convention on CBW criminalization—advances in science and technology, consultation procedures, confidence-building measures (CBMs), disease surveillance and control, biosafety, and the oversight of genetic experimentation, work undertaken to strengthen the BWC, and a prospective ethical code of conduct for scientists. The workshop participants

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<sup>1</sup> A list of Participants is included below in this document.

also addressed themselves to the state of the CBW regimes in the wake of the 11 September terrorist attacks and looked to the future of how the norm against CBW can be strengthened. Some discussion also took place on the role of CBW disarmament in the international effort to combat terrorism.

## **Reports on International CBW Activities and Initiatives**

### ***CWC: Progress in Implementation***

The workshop was provided with an update on the progress of implementation of the Chemical Weapons Convention (CWC) by the Organization for the Prohibition of Chemical Weapons (OPCW) headquartered in The Hague.

Five main issues facing the Organization were highlighted: the current financial situation, the increasing importance of "secondary issues", chemical weapons destruction, terrorism, and preparations for the first review conference of the CWC.

As a result of the financial constraints experienced by the Organization in the course of the last year, verification activities had to be cut by 30 percent in 2001. The financial crisis was reported to be under control. Nearly EUR 6 million was saved in the 2001 budget, and consequently, there would be no deficit experienced at the end of the year. The majority of the financial difficulties experienced by the Organization to date were attributed to faulty and outmoded financial rules and regulations that were concluded prior to the CWC entering into force, and thus do not take into account the needs of a fully functioning organization.

The attention of the workshop participants was drawn to issues that had previously been overshadowed by the larger political process of getting the inspection regime up and running and have now come to the fore. This includes the provision of two-year multiple-entry visas for inspectors and notification of points of entry, as well as the enactment of implementing legislation. A majority of the states parties have yet to fulfill many of their obligations in this area. The largest issue remaining under consideration by the OPCW Technical Secretariat and the OPCW Executive Council is amendment of the mechanism by which the OPCW is reimbursed for the costs of inspections conducted under Articles IV and V. Those states parties that have declared possession of chemical weapons stockpiles and undertaken destruction programs are obligated by the CWC to fund verification of the destruction process by the OPCW. Verification costs at chemical weapons destruction facilities could be reduced through the implementation of electronic monitoring, in conjunction with OPCW inspectors, or by bilateral verification between the United States and Russia (a situation pre-supposed by the CWC's architects)-a bilateral arrangement is not however currently favored by either country. A decision in this matter was not foreseen in the current year.

One of the most important issues facing the Organization is the "slippage" of the Convention-mandated timelines for the destruction of chemical weapons stockpiles. Of the four possessor states parties (India, Russia, the United States, and one state party of withheld identity), Russia has asked for a five-year extension of the final destruction deadline to 2012, with changes in the intermediate deadlines as well. The state party of withheld identity has also requested an extension of its 20 percent destruction deadline due to technical reasons, but the delay is minor in comparison with the Russian request. The United States has also made unofficial statements implying that it will not be able to complete the task of 100 percent destruction of its entire chemical weapons stockpile by 2007. Therefore, of the four states parties, only India is "on

track" with regard to the Convention's destruction timelines. The Executive Council was expected to address the problems created by "slippage" at its twenty-seventh session in December 2001. Some workshop participants expressed the view that the failure of more than one of the states parties possessing chemical weapons stockpiles to complete their destruction programs within the CWC's timelines was a guarantee against multilateralism being supplanted by separate bilateral arrangements.

At the December Council session, the states parties were also expected to examine the role of the OPCW in the global effort to combat terrorism, particularly chemical terrorism. Article X of the CWC, on assistance and protection in the event of use or threat of use of chemical weapons, obligates the OPCW to not only act in response to terrorist attacks, but also to work actively to prevent them. The Technical Secretariat, the Executive Council, and the states parties as a whole were working to identify the extent of this role, keeping in mind that the OPCW is not a police organization, and are putting together a comprehensive program of work that would enable the OPCW to prevent, combat, and respond to chemical terrorism. A related issue that would also be discussed by the Council in the near term was the need for tougher restrictions on the transfer of Scheduled chemicals, particularly those in Schedule 3, to states not party to the Convention. The Technical Secretariat favored a ban on such transfers, as such action would help to further prevent the proliferation of toxic chemicals or their precursors, especially as concerns terrorists and other non-state threats to global security and stability.

Terrorism is also likely to figure into discussions at the first review conference of the CWC, scheduled to be held in 2003. Preparations for the review conference had officially begun, including the establishment of an open-ended working group of the Executive Council on this topic, but as of yet nothing substantive had occurred. Both the Technical Secretariat and the Council have been working to identify issues of importance to the review conference and have engaged with the International Union of Pure and Applied Chemistry (IUPAC) to undertake a scientific and technological review of the CWC; the substance of this work was not expected to emerge until the first half of 2002. Various non-governmental organizations (NGOs) voiced their desire to play a greater role in the review process than they have so far been permitted in the annual Conference of the States Parties. The need for NGOs to be more proactive, both with respect to international institutions and their own governments, was again emphasized, as it had been at the previous workshop of the Study Group in June 2001.

### ***BWC: Work of the Ad Hoc Group***

Although the draft text of a verification protocol and the Ad Hoc Group which worked to negotiate it were both rejected summarily by the United States during the Ad Hoc Group's twenty-fourth session in July and August 2001, workshop participants saw much value in the Draft Protocol or "composite text" and urged states parties to keep the compromises of the Ad Hoc Group negotiations in mind when considering further measures with which to strengthen the BWC. One of the main points stressed was the fact that the Draft Protocol, or any future protocol yet to be negotiated, did not change the prohibitions and obligations set out in the BWC.

The basic provisions of this Draft Protocol, first presented by Chairman of the Ad Hoc Group, Ambassador Tibor Toth (Hungary) at the April/May session of the Ad Hoc Group, included: declarations and measures to ensure submission as well as follow-up procedures, transfers and export controls, consultation, clarification and cooperation mechanisms, investigations,

assistance and protection, international cooperation, establishment of an Organization for the Prohibition of Biological Weapons (OPBW), and national implementation measures. Two types of investigations were provided for, field and facility, and every effort would be made to ensure that such an investigation would not jeopardize either a country's national security or its pharmaceutical industry's confidential business information. Rather, the Draft Protocol encouraged international cooperation in the exchange of science and technology with the aim of promoting the peaceful use of the biological sciences. The OPBW would have been about half the size of the OPCW with a comparably smaller budget.

The overlap between any potential verification regime for the BWC and the verification regime of the CWC-implemented by the OPCW-was highlighted, and is especially relevant when discussing toxins and bioregulators, which are covered by both Conventions. Another area of common concern is dual-use technology. The differences between the CWC and the Draft Protocol were also discussed and the view put forward that the Protocol would have been at least as effective in implementing a worldwide prohibition on biological weapons as the CWC with respect to chemical weapons.

The concerns raised about the effectiveness and feasibility of the Draft Protocol, which led to its rejection in July 2001, centered on the burden declarations, investigations, and export controls would impose upon a state party and its bio-pharmaceutical industry. A concern that most feel was significantly overstated given that national regulatory bodies conduct numerous inspections and run a stringent licensing program with respect to these industries. The extra "burden" of a BWC Protocol would be minor by comparison. Another major concern was that the Draft Protocol was not designed to detect violations of the BWC or "cheating".

The most important aspect of the Protocol is that it would have provided the BWC with a legally-binding verification regime, a mechanism considered necessary in order to address non-compliance concerns (raised most recently and publicly by the United States) and ensure the non-proliferation of biological weapons, their components, or the knowledge involved in their manufacture.

In subsequent discussion, workshop participants speculated on the proposals for an alternative to the Draft Protocol, or any protocol, to be made by the United States during the Fifth Review Conference, as well as the proposals being made by other states parties. Participants also cautioned against making too strong a link to the CWC, citing the different context of each treaty. The role of the BWC in preventing, combating, and/or responding to terrorism was also discussed and most participants were of the view that Article 13 of the BWC, like Article X of the CWC, mandated the states parties to the BWC to act in this regard. It was generally agreed that no protocol or other verification mechanism could be entered into or function effectively without the support and participation of the United States-a depository of the Convention along with Russia and the United Kingdom.

## **The Fifth BWC Review Conference 2001**

### ***Focusing on the Key Issues***

There were many issues identified by workshop participants as important for the states parties to examine in the course of the Fifth Review Conference. These issues fell into two categories: technical and political. Among the technical issues were advances in science and technology, the increasing overlap between chemistry and biology, the increasing potential for the misuse

of science, biocontrol programs, and the need for interim supportive institutions. This last topic was seen as a political issue as well since many states parties seem opposed to the establishment of any sort of supervisory organization or institution for the BWC on political grounds. Participants reaffirmed the utility of the general purpose criterion, which ensure that all future scientific discoveries are covered under the Convention's prohibitions against the harmful use of biological agents-this already includes toxins, bioregulators, and neurotransmitters. Advances in the means of delivery of biological agents should also rightly be addressed.

On the political side, the participants in the Fifth Review Conference may wish to utilize the ongoing war on terrorism to revitalize the worldwide commitment to prevent proliferation of weapons of mass destruction (WMD), including biological weapons. The anthrax attacks in the United States should be used as a justification for why BWC implementation needs to be strengthened and vigorously pursued. The damage done to the BWC and the prospect for any future verification regime by the last-minute U.S. rejection of the Draft Protocol, and attendant uncertainties and recriminations, will most definitely limit the scope of what the Fifth Review Conference can realistically expect to achieve.

A few concrete issues were proposed by the United States for consideration by the participants of the Fifth Review Conference, and they included the need for states parties to enact strict criminal legislation covering crimes involving the production or use of biological weapons, establish a mechanism for investigating suspicious outbreaks of disease, develop procedures to address compliance concerns, and implement an ethical code of conduct for bioscientists and those who handle pathogenic organisms. Many of these concerns were addressed by the Draft Protocol.

Under this agenda item, workshop participants highlighted national implementation, through the strengthening of national legislation, and universality as issues of particular importance. The key to the process of strengthening the BWC was to build upon the current norm prohibiting biological weapons and develop a coherent verification regime. The need to prevent proliferation was also seen as particularly urgent since great advances in science and technology were in fact already emerging within the scientific community and society as a whole. The participants encouraged all states parties, including the United States, to find a way to move forward, beyond the acrimonious debate that characterized the Ad Hoc Group meeting in July, since the issues at hand are just too important to be ignored.

### ***Interim Supportive Institutions***

Workshop participants endorsed the establishment of some form of interim supportive institution or institutions in order to bridge the five year gap between review conferences-the sixth will not be held until 2006, if so decided by the states parties at the ongoing Fifth Review Conference-and prevent progress made to date on strengthening the BWC from unraveling or moving backwards. The states parties could establish an interim institution in the final declaration of the Fifth Review Conference as a means of follow up for any action points included in the declaration. The interim institution would be subject to yearly renewal. The mandate of such a body, for purposes of the workshop termed a "Committee on Oversight", would be the oversight of the operation of the BWC, including assistance to states parties in fulfilling their obligations under the programme of CBMs established at earlier review conferences. As well, an interim institution could implement programming aimed at promoting universal adherence to the BWC-as of November 2001, the Convention had 144 states parties, a further 49 countries had yet to ratify or accede to the treaty. The staff members of a

Committee on Oversight would represent the BWC in public forums and at the United Nations (UN) and track developments in the biological sciences of relevance to the Convention. A Committee on Oversight could be assisted in its mandate by both scientific and legal advisory panels.

An interim institution was termed a second chance for governments, after the failure to agree upon a Protocol. For the interval between 2001 and the eventual establishment of a permanent OPBW, a Committee on Oversight represents a commitment to a strong BWC without risking valuable resources or creating a sprawling international bureaucracy. A recommendation was made that support of the Pugwash CBW Study Group for the establishment of a Committee on Oversight, or an interim supportive institution by another name, be voiced officially to the Fifth Review Conference in the form of a formal NGO proposal.

### ***National Implementation Measures (Article IV)***

Due to the recent events in the United States and the U.S. call for stricter criminal legislation with respect to biological weapons activities, the Fifth Review Conference was expected to upgrade the reference to penal legislation in its final declaration. There was also mention of the need to repair the omission of biological weapons from the statute of the International Criminal Court (ICC). The ICC statute only provides for chemical warfare to be considered an international crime.

The Study Group was informed that under the CBM programme only about one-third of the BWC states parties had reported the enactment of implementing legislation. National legislation often differs drastically from country to country. Compiling data on national implementing legislation and working to help states parties draft legislation and coordinate legislation regionally would be a prospective task for a yet-to-be-established interim supportive institution.

### **International CBW Criminalization**

Under this agenda item, the Study Group received an update on efforts to gain international support for a Draft Convention to Prohibit Biological and Chemical Weapons Under International Criminal Law. This HSP proposal would create an international criminal law applicable to the weaponization of biological or chemical agents. The draft convention was originally published in the December 1998 issue of The CBW Conventions Bulletin and most recently in the December issue of OPCW Synthesis. The draft would make it a crime under international law for any individual, regardless of citizenship or official position, to order, direct, or knowingly to render substantial assistance in the development, production, acquisition, stockpiling, retention, transfer or use of biological or chemical weapons, to threaten the use of such weapons, or to create or retain facilities intended for the production of such weapons. Any person who knowingly commits any of the prohibited acts anywhere, worldwide, would face the risk of apprehension, prosecution, and punishment if found in a state party to the proposed convention.

The HSP draft is modeled on recent international conventions now in force that seek to establish universal jurisdiction for such crimes as aircraft hijacking, torture, hostage taking, theft of nuclear materials, and harming internationally protected persons. These conventions, like the HSP draft convention, do not establish international tribunals but instead provide for the specified offenses to be adjudicated in national courts on the territory where the alleged

offender is found or to which such person may be extradited. In contrast, the ICC, expected to be established in The Hague, can accept a case only if the state which has jurisdiction over that case is unable or fails to carry out the investigation or prosecution. As regards chemical weapons, the ICC Statute prohibits, under the category of war crimes, the employment of "poison or poisoned weapons" and of "asphyxiating, poisonous or other gases, and all analogous liquids, materials or devices". The ICC Statute contains no explicit reference to biological weapons, and it applies only to actual use, not to development, production, stockpiling or transfer. Unfortunately, little progress had been achieved in gaining international support to bring the draft convention to the sixth (legal) committee of the UN since the last Study Group workshop in June 2001. However, the international context has changed significantly since 11 September, and the BWC states parties should be encouraged to endorse the HSP proposal as a means of strengthening both penal legislation and supporting the international fight against terrorism by denying terrorists safe havens from prosecution. The basic purpose of the draft convention is fundamentally the same as both the BWC and CWC; it functions to restate the international norm that puts biological and chemical warfare beyond the pale. Without buttressing, this norm is at risk for fragmentation and possibly disintegration.

Workshop participants felt that the Draft Convention would fill any gap in the armory against CBW.

#### *Advances in Science and Technology (Article I)*

Under this agenda item, seven factors were identified as important to the BWC with respect to the recognition of and response to scientific and technological advance. First, scientific knowledge in the fields of microbial pathology and immunology, and in the newer sciences of genomics and proteomics, is destined to lead to the discovery and/or development of new and dangerous biological agents and/or means of delivery. Second, the development of enabling technologies is keeping apace scientific knowledge. Examples of such technology include automated sequencing, combinatorial chemistry, bioinformatics, protein structure analysis, and DNA modification. Third, there has been an increase in the opportunities to apply new scientific knowledge and new technologies and investment is forthcoming on a large scale. The medical, agricultural, and defense industries have all invested heavily over the last few years in advances in the biological sciences, most notably in genetics. Fourth, the pace of change is increasing at a faster rate than at any other time in human history. The international arms control and disarmament community must work hard to keep up. Fifth, there is a need to quickly recognize new dangers, such as new and/or emerging diseases and the misuse of biotechnology. The recent instance of mousepox research in Australia was cited as an example. There, scientists working on preventing egg fertilization in mice made a genetic modification in the mousepox virus that had the effect of killing mice that were supposedly immune. This undermining of immunity has the potential to be used in biological warfare and thus serious consequences for the BWC. The scientists, like many around the world, were not aware of the BWC or the potential of their research being misused. The sixth factor is the responses available to the international community, including international cooperation and current and future international agreements governing arms control, disarmament, and non-proliferation. Both national governments and the biomedical community must be involved. And seventh, the implications of the preceding six factors are that both the potential dangers and benefits are increasing, and the pace of change necessitates regular review of scientific and technological advance by the BWC states parties. It was not considered sufficient to conduct this review every five years. The medical community-both biologists and chemists-must provide explicit guidance to their national governments in this endeavor.

Workshop participants emphasized that an effort must be made to review research being conducted outside of the biodefense field since many areas of research-biology, chemistry, genetics, genomics, proteomics, bioinformatics, microbiology, biochemistry . . .etc.-have implications for the BWC. Attention was drawn to a new bill in the United Kingdom aimed at increasing the security surrounding pathogens and laboratories that conduct research on them. The laws protecting the confidentiality and propriety of scientific research may need to be reexamined in light of the need to prevent diversion into biological or chemical warfare programs. Two very important issues in this area were discussed: biocontrol programs including the use of biological organisms in the drug war, and increased attention to the "means of delivery" provision in Article I of the BWC. Is the use of biological organisms/agents against coca and opium crops by one state party on the territory of another, with or without its permission, biological warfare? Even if it does not fall into that category, the practice may represent a significant loophole in the BWC as it allows for research, preparations, and development of delivery mechanisms for the effective dispersion of biological agents, which could be diverted into biological weapons programs. There is therefore a need for more complete definitions of the terms "hostile purpose" and "biological agent" as they are used in the BWC. Similarly, research in the pharmaceutical industry that explores new bacterial and viral vectors for drug delivery has the potential to be diverted for the delivery of biological weapons.

Participants recognized the very complicated nature of these issues and the need for in-depth programs of oversight and review, and the need to increase awareness of the BWC and arms control issues in general within the scientific community.

### ***The Treaty Regimes after 11 September 2001***

In the wake of the shocking terrorist attacks on the United States on 11 September, and the subsequent use of anthrax as a weapon of terrorism, both the BWC and the CWC regimes stood in danger of being sidelined. The United States seemed to play down the role of arms control regimes and focus instead on unilateral or bilateral approaches to national security and global stability. However, both the BWC and CWC have a significant role to play in the fight against international terrorism, and particularly in preventing terrorists from attaining biological or chemical weapons technology or developing weapons programs, as well as responding to attacks on states parties using chemical or biological weapons.

As a result of these recent acts of terrorism, territorial security will gain more prominence, while states will come to realize that they cannot ensure their complete security with unilateral action, and furthermore non-conventional weapons are now a real concern. The positive security guarantees of both the CWC and the BWC-the development of programs for detection and defense, cooperative assistance and protection, multilateral forums in which to air grievances or suspicions-compensate for the negative security guarantees, such as the ban on development and/or use of CBW, the destruction/conversion requirements, and more stringent export controls.

In the wake of 11 September, there is a greater urgency in reinforcing the institutional framework of both treaties, highlighting the positive security guarantees involved, and creating a broader network of links between them-especially with respect to ethical codes discouraging CBW research and both implementing and penal legislation. These treaties provide the world with its first line of defense against CBW and the potential use of these weapons by terrorist organizations or individuals. In order to maintain the veracity of this defensive and preventive



tool, and reinforce the international norm against these terrible weapons, the CWC and BWC states parties must realize that the treaties require increased attention and support.

The OPCW and its constituent organs—the states parties and the Technical Secretariat—were already examining ways in which the assistance and protection mandate under Article X can be pursued more vigorously, particularly where the threat of chemical terrorism is concerned. In order to implement programs for the provision of emergency assistance and other means of response to chemical terrorism, the existing Voluntary Fund for Assistance is in dire need of financial contributions from the states parties. And, Article X implementation is only one facet of how the OPCW can work to both combat and prevent, as well as respond to, chemical terrorism. Various articles of the Convention give the OPCW a clear mandate in this regard. The Convention's requirement to destroy existing stockpiles of chemical weapons (Article I) supports the non-proliferation of such weapons, preventing them from falling into terrorist hands. Non-proliferation is further pursued through the CWC's industrial and export control regimes (Article VI). Legislatively, the states parties to the CWC must enact national implementing legislation, criminalizing the prohibitions of the Convention (Article VII). Support from the Technical Secretariat is available to states parties in developing effective legislation and in encouraging coordination of such legislation regionally. Above all, universality of the CWC is of utmost importance, since that will eliminate the existence of "safe havens" for those that dare to develop, produce, or use chemical weapons.

Workshop participants were of the opinion that all existing tools—as embodied in the two CBW conventions—should be fully utilized in the effort to counter international terrorism. Chemical terrorism was considered more likely than biological attacks (notwithstanding the ongoing anthrax outbreak) because of the wide availability of toxic chemicals in the industrial sector. Therefore, stricter international legislation and international enforcement is needed to control transfers of material and equipment. The suggestion was made that until there is a verification mechanism in place for the BWC, the United Nations has a mandate to combat bioterrorism.

The media was cited as an important factor in highlighting and exaggerating the threat posed by CBW—to both positive and negative ends. Feelings of vulnerability and helplessness among populations must be transformed into public, grassroots pressure on national governments to take action and support both the CWC and BWC. In the United States and around the world, international policy and official attitudes toward arms control and disarmament are heavily influenced by domestic concerns.

It was of paramount importance to workshop participants that the existing norm against using disease and toxic chemical in warfare be maintained no matter the international situation. In this endeavor, the existing regimes provide the both the first line of defense and the best place to start.

### ***Consultation Procedure (Article V)***

Workshop participants asked the question why the United States was not invoking Article V in response to the allegations it made at the start of the Fifth Review Conference against the five plus countries—four states parties to the BWC—it claimed had maintained biological weapons programs in violation of the Convention.

Participants highlighted the danger of such mechanisms atrophying if they are not utilized in the situations they are intended to address.

## ***Confidence-Building Measures***

The programme of CBMs between BWC states parties was established by the Fourth Review Conference in 1994. Since then, little attention has been paid to them and fulfillment of this politically-binding obligation has been characterized as "patchy" and "variable". Often, more information is available in the public domain than is submitted in CBMs. Less than half of the 144 states parties have submitted the required information, and only 10 states parties consistently make annual submissions-despite the fact that these CBMs are not voluntary. Another problem is the lack of any organizational system to collect and analyze the CBMs in a comprehensive manner. The Study Group was informed of specific proposals to extend the CBMs to cover declarations of facilities for research on plants and animals and disease research. Particular attention was paid to the CBM covering disease surveillance and its vague wording on "unusual outbreaks"-what constitutes an unusual outbreak of disease varies widely from country to country and region to region. It was proposed that the World Health Organization (WHO) play a greater role in the implementation of the BWC's CBMs, as it is well-placed to pursue disease surveillance and determine unusual outbreaks. However, there are dangers involved in politicizing the work of the WHO. Workshop participants felt strongly that CBMs needed to be made not just politically-binding but legally-binding.

## ***Article X: Disease Surveillance and Control, Oversight of Genetic Manipulation, and Biosafety***

The interplay between the BWC and the WHO, and the other international organizations with mandates relevant to the worldwide control of disease and the assurance of biosafety, such as the FAO and the OIE, was further discussed under this agenda item. Disease surveillance is a global effort, in which the WHO provides epidemiological training, aids in capacity building, and sets standards. The WHO pursues its mandate through a network of regional and local centers, but it can only enter a country to conduct activities on the ground if invited. It was emphasized that the WHO must remain free of suspicion of political bias as it maintains a complex network of governments, national research centers, and NGOs. As a humanitarian institution, it should not involve itself in matters of security. It would be difficult for the WHO to conduct a criminal investigation while at the same time maintaining its humanitarian focus. However, the WHO is prepared to provide humanitarian support in the case of a biological attack or outbreak. Participants in the workshop received advanced copies of the pre-publication issue of a forthcoming WHO publication, "Public Health Response to Biological and Chemical Weapons: WHO Guidance". This paper was the second edition of a study that was originally published in 1970 and reflects a large amount of input from Pugwash. However, it is up to the WHO's states parties to decide upon its proper role in the CBW context. The surveillance and reporting mechanism of the WHO does need additional support from national governments, and one framework discussed by participants was the Promed Internet listserve. This network of 25,000 subscribers, nearly half of whom live in the United States, allows not only governments, but medical professionals, researchers, and academics to exchange information relevant to the spread of disease around the globe, including suspicious or unusual outbreaks. Promed can be linked to centralized national reporting systems, a possibility being explored by Brazil and the Netherlands. Despite U.S. calls for increased legislative control and oversight of biological and genetic research and the security of dangerous organisms, legislation alone is not enough. International cooperation, in the form of the WHO and other international organizations, is an absolute necessity in combating international terrorism. Work Done to Strengthen the Convention in Accordance with the Decision of the 1994 Special Conference Under this agenda item it was emphasized that the Ad Hoc Group would continue

to exist and work toward its mandate of a legally-binding verification protocol for the BWC until another special conference of BWC states parties was called and acted to discontinue the Ad Hoc Group. With that in mind, the Fifth Review Conference could make a neutral statement in its final declaration with regard to the Ad Hoc Group, stating that the group was unable to complete its work prior to the Fifth Review Conference and should be encouraged to continue its negotiations. No matter the terminology used for either the group or its outcome, some multilateral instrument is needed.

The main question is whether the work of the Ad Hoc Group or other work toward strengthening the BWC can continue without the support and participation of one key state party: the United States.

## **Other Issues**

### ***Code of Conduct***

The workshop concluded with an extensive and in-depth discussion of a code of conduct for the scientific community that would function to increase awareness among biologists, chemists, and geneticists of the possibility of their research being used to produce or deliver chemical or biological weapons. A code would also pledge scientists to never knowingly engage in research on chemical or biological weapons. Workshop participants debated the utility of such codes and the mechanisms available to governments, NGOs, and academia in implementing them. The main question being whether or not a code of conduct would provide any measure of prevention of the proliferation of chemical and/or biological weapons or the scientific knowledge necessary for their manufacture.

Such pledges have been explored previously—notably at the Third BWC Review Conference. There is a possibility that an all-encompassing code of conduct could be built upon ethical codes already in place in various scientific disciplines. Stockholm International Peace Research Institute (SIPRI) and the Federation of American Scientists (FAS), as part of a joint research project, conducted a survey of scientific and professional organizations on the Internet, and while several have some type of ethical standard delineated, only one referred to biological weapons. NGOs and civil society should work with both the government and scientific foundations to encourage explicit reference to chemical and biological weapons. There needs to be an effort made to repair the disconnect that exists between the scientific community and government. The OPCW has launched an ethics project in conjunction with the UN disarmament education program in order to promote awareness of arms control among scientists.

Workshop participants explored the possibility of a Hippocratic Oath for all scientists involved in fields of research relevant to chemical and biological weapons (chemistry, biology, genetics . . . etc.). It was pointed out that the Hippocratic Oath did not prevent Nazi atrocities and the work of Mengele and that codes of conduct in general cannot prevent criminal activity. They can, however, highlight the criminal nature of such actions and bring the attention of the scientific community to the danger of misuse. The majority of students of the hard sciences are not aware and not interested in the ethical side of scientific research.

Alternatives or add-ons to a code of conduct include the inclusion of ethics courses in university curricula and the requirement that science students enroll in such courses. Youth Pugwash chapters in Europe and the United States has advocated such an approach, as well as working

toward the promotion of a pledge or oath that would require scientists or science students to take on a degree of individual responsibility for their research and its effects on society.

Some workshop participants highlighted the fact that any code of conduct must come from within the scientific community and it cannot be forced upon scientists by the government or NGOs. Governments can, however, call upon the scientific community to act. An example of a successful internal policy is the "best practice" guidelines instituted by the chemical industry.

A few workshop participants thought that the best way to enforce a code of conduct and prevent the misuse of science was by criminalizing unethical conduct through penal mechanisms; however, most workshop participants thought it was unwise to mix up a code of conduct with the law.

To simply say that norms do exist against research into chemical and biological warfare is minimal protection at best. Tools need to be created to assist scientists in their decision-making processes and an active effort needs to be made to combat the trend in the hard sciences of discouraging the consideration of social consequences.

### **Future Work of the Study Group**

The workshop ended with a proposal that the Study Group examine more closely the overlap between the CWC and BTWC regimes, especially where toxins are concerned, in preparation for the first CWC review conference, planned for 2003. Pugwash will soon be releasing a statement on CBW, to be distributed to the states parties of the BWC and CWC, which will need to gain the approval of the Pugwash Council and therefore may not be finalized until January or February. This is a rare action for Pugwash to undertake, and underscores the seriousness of the issues at hand and the crisis perceived by many in the international efforts to control WMD.

Workshop participants also encouraged both NGOs and academics to take on a larger grassroots role and work on the national level toward generating an international coalition against CBW and WMD as a whole. Such actions are needed to save the achievements of multilateral diplomacy over the last decade.

The Study Group hopes to hold its seventeenth workshop in the Netherlands during the first half of 2002. This workshop will focus on the first CWC review conference and the progress of the review process to date. The second workshop in 2002 will be held in Geneva in the fall and will address itself to the outcome of the fifth BWC review conference and any follow up undertaken by the states parties.

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