

# CWC and BWC Experience Sharing<sup>1</sup>

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13th Workshop of the Pugwash Study Group on the Implementation of the Chemical and Biological Weapons Conventions

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Workshop Report

by *Daniel Feakes*

THIS was the seventh of the current Pugwash CBW workshop series, held in collaboration with the Harvard Sussex Program, to be hosted by Pugwash Netherlands. The Dutch ministries of foreign affairs, economic affairs and defence provided financial assistance for this meeting. The meetings were held in the Oud Poelgeest Conference Centre in Oegstgeest. Participating by invitation were some 37 people from 15 countries (Australia, Belgium, China, Finland, France, Germany, India, Ireland, Italy, Netherlands, Poland, Russia, Switzerland, the UK and the USA), 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 concentrated on the sharing of experiences between the Chemical Weapons Convention (CWC) and the Biological Weapons Convention (BWC). Discussions were greatly facilitated by the presence of individuals directly involved in the subject, either with the Organisation for the Prohibition of Chemical Weapons (OPCW) in The Hague or with the Ad Hoc Group (AHG) which is negotiating a BWC protocol in Geneva. While previous workshops in this series have addressed lessons that could be learnt from the CWC for the BWC protocol, this workshop looked in particular at the practical experiences of implementing the CWC, the implications for its implementation and for the negotiation and implementation of the BWC protocol. There was also input from individuals who had been involved in the work of the United Nations Special Commission (UNSCOM) to eliminate Iraq's chemical and biological weapons.

## **Reports from international CBW bodies**

As is the custom within the Study Group, the workshop opened with brief reports on activities relevant to the implementation of the CBW conventions.

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

The workshop was fortunate to have participation from a number of individuals involved in the OPCW. Participants therefore received a detailed briefing on the current status of

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

implementation of the CWC and on some of the challenges facing the OPCW. The Executive Council had convened for its nineteenth session immediately prior to the workshop.

As of early April, 132 states have joined the CWC and a further 39 have signed the Convention but have yet to complete the final step of ratification. Rather more than 20 states have yet to make any commitments under the CWC. This unprecedented rate of growth has been achieved in under three years -- 29 April 2000 is the third anniversary of the entry into force of the CWC -- and compares well with other major arms control treaties. However, problem areas still exist, particularly the Middle East where the CWC has been linked to regional security issues.

With respect to the submission by states parties of initial declarations, a recent political initiative by the Secretariat and states parties has reduced the number of outstanding declarations from around 35 to 10, with the prospect of further submissions before the fifth session of the Conference of the States Parties in May. However, a large minority of states parties have failed to submit other required notifications and to implement the Convention nationally. As of 3 April the OPCW had conducted 685 inspections at 336 sites in 35 states parties. The focus has been on chemical weapons facilities and on chemical weapons destruction facilities in particular, where the CWC requires the permanent presence of OPCW inspectors when chemical weapons are being destroyed. Destruction operations will reach a peak in the period from 2003 to 2005, and will necessitate either the recruitment of around 200 additional inspectors or changes in the verification regime applied to such facilities. With regard to industry inspections, the workshop heard that a number of issues remain to be addressed, including the frequency of inspections, the balance between inspections to the different categories of industrial facilities, the declaration and transfer thresholds for scheduled chemicals in low concentrations and the extent of access by inspectors to plant sites and records.

Over one third of the chemical weapons production facilities declared have already been certified as destroyed; 21 facilities of a total of 60 declared by nine states parties (China, France, India, Iran, Japan, Russia, UK, USA and one unidentified state party). Two additional facilities have been converted to peaceful purposes, three more have been approved for conversion and a further six have been recommended for conversion. Of the remaining 28 facilities, around 21 might also be converted and the rest will have to be destroyed. Chemical weapons are currently under OPCW verification at 31 storage facilities in four states parties (India, Russia, USA and one unidentified state party). In the USA chemical weapons are being destroyed continuously under OPCW monitoring at three destruction facilities, while destruction operations are also underway in two of the three remaining possessor states. As of 1 March, OPCW inspectors have witnessed the destruction of 1,140,000 munitions and bulk containers and 4,284 tonnes of chemical agent out of the 8.4 million munitions and bulk containers and 70,000 tonnes of agent that have been declared. According to the CWC, states parties should have destroyed one per cent of their stockpiles by 29 April. The USA, India and an unidentified state party have already met this deadline, but Russia has requested, and been granted, an extension to the deadline as it has not yet destroyed any chemical weapons.

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

Workshop participants heard a presentation on the latest developments within the AHG and then heard from a number of people actively involved in the negotiations. The AHG had concluded its nineteenth session on 31 March. Since its establishment, the group has met for fifty weeks, with between six and eight more planned for this year. At this stage, it appears that

everything necessary for the protocol is already included in the current draft (the "rolling text"); in 1996 there was an average of seventeen working papers submitted per week, whereas that figure is now down to one per week. The rolling text produced by the nineteenth session will be the twelfth such version, and reflects a steady reduction in the number of square brackets, which indicate text upon which agreement still has to be reached. The number of square brackets peaked in late 1998 with more than 3,000 in total, roughly 12 per page. However, by April 2000 this figure had fallen to less than 1,500 and around 5 per page.

The nineteenth session adopted new working methods, involving more informal meetings between delegations, which should allow the friends of the chair to focus on the remaining contentious issues. The 25th anniversary of the BWC fell during the last session of the AHG, on 26 March. This was occasion for a number of important events: statements by the UN Secretary-General, the three depository governments and various foreign ministers; NGO events in Geneva and New York; and the publication by the Department of Peace Studies at the University of Bradford of a proposed "clean text" of the protocol.

It appears that the negotiations are now poised at a delicate moment. The negotiators have gone as far as possible in drafting the protocol and in reducing the number of square brackets. Many workshop participants commented that it was now time for a higher level of political involvement in order to prepare for the concessions and compromises that will have to occur during the endgame of the negotiations. It was also suggested that the responsibility for moving the negotiations forward lies with the AHG chairman, although it was also felt that the time is not quite right for him to introduce a "clean text". It was recalled that the USA announcing it wanted a completed text within one year provided momentum in the endgame of the CWC negotiations. So far, no AHG delegation has set a similar deadline, although the negotiations are important to many delegations as they are the only multilateral disarmament treaty negotiations currently underway.

Despite the impressive progress made, a number of issues still remain to be resolved. Among these are issues which can only be resolved at a higher political level, such as the balance between technical co-operation and export controls, whether the provision for clarification visits should also cover undeclared facilities, the initiation procedure for field and facility investigations and the conditions for the entry into force of the protocol. Workshop participants also highlighted the absence of involvement in the AHG by the biotech and pharmaceutical industries, especially those of the USA. Given that there are only a few weeks of negotiations left this year and a number of important issues yet to be resolved, some participants doubted whether the protocol could be finalised before the end of the year.

### ***UNSCOM and After***

The next report covered the final activities of UNSCOM in Iraq and the establishment of its successor, the United Nations Monitoring, Verification and Inspection Commission (UNMOVIC). The workshop heard from people involved with both organisations. Looking at the behaviour of the three main actors -- Iraq, UNSCOM and the Security Council -- the workshop was told that conflict was practically inevitable. Iraq's policy of retaining as many of its weapons of mass destruction (WMD) as possible led UNSCOM to adopt increasingly intrusive tools and techniques in an attempt to fulfil its mandate. The enforcement measures adopted by the Security Council ranged from sanctions, through statements and resolutions to military action. The behaviour of the Security Council was characterised by initial staunch support for disarmament, although as the years passed the Council became increasingly

inattentive to the evolving crisis, reflecting a fading memory of the Iraqi WMD threat. Later, factors external to the UNSCOM-Iraq crisis came to dominate and Council members displayed competing and conflicting objectives. The experience of UNSCOM demonstrates that there is a clear distinction between the investigation and enforcement of compliance with disarmament obligations.

Following Operation Desert Fox and the retirement of Richard Butler UNSCOM went into a state of abeyance. After months of deliberations, the Security Council adopted a new resolution on Iraq (S/RES/1284, dated 17 December 1999) establishing UNMOVIC as UNSCOM's successor. UNMOVIC retains the rights and privileges of its predecessor but will be staffed primarily by individuals on UN contracts rather than being seconded by national governments. UNMOVIC will pay more attention than UNSCOM to data management and the training and supervision of its personnel. In contrast to UNSCOM, which initially had strong support from all the members of the Security Council, UNMOVIC has been established in a less benign international climate. If UNMOVIC is able to conduct inspections in Iraq, the focus of its activities will likely be Iraq's biological weapons programme. Of all its WMD, Iraq appears to have tried hardest to retain its biological weapons and there is evidence that it is still trying to procure materials abroad and keep its domestic expertise together. Rather than stockpiling weaponised agent, Iraq appears to be focusing on the bare essentials of the programme and on the retention of capabilities, making UNMOVIC's task particularly difficult.

### ***HSP International Criminal Law Initiative***

Finally, the workshop was briefed on the progress of the Harvard Sussex Program's international criminal law initiative. A draft convention to prohibit biological and chemical weapons under international law was published in the December 1998 issue of The CBW Conventions Bulletin. A number of governments are currently considering the draft and the next step would be for one or more of them to introduce it to the United Nations General Assembly's Sixth Committee.

## **CWC/BWC EXPERIENCE SHARING**

### ***General Purpose Criterion***

Moving into its main agenda item on CWC/BWC experience sharing, the workshop first addressed the implementation of the general purpose criterion (GPC) by the OPCW and implications for the BWC protocol. It was noted that the CWC is a complex treaty and that its implementation is not a simple matter. While the GPC lies at the heart of both the BWC and the CWC and is essential for dealing with the dual-use aspect of CBW technologies, making the GPC verifiable is problematic as it is a standard based on purpose. The OPCW has therefore adopted a pragmatic approach to its implementation. For example, there was disagreement between the Secretariat and some states parties as to whether facilities on their territory were chemical weapons production facilities. In the end, a pragmatic solution was adopted whereby the states parties concerned simply destroyed the facilities in question. A similar problem arose with respect to declarations of adamsite by states parties. In the past, adamsite has been used both for riot control purposes and also as a weapon of war. However, today it is widely regarded as unsuitable for riot control purposes, due to its high toxicity. The workshop heard how one state party, which did not know the identity of the producing state or the purpose of production, had declared its stock of adamsite as toxic waste and decided to destroy it.

The workshop debated the value of defining criteria in both the CWC and BWC protocol contexts. A presentation proposed an approach for those agents of concern which do not appear in the CWC's three schedules. Four criteria for assessing the risk posed by such agents were presented: toxicity, mass, volatility and availability. Some participants believed that such criteria would be useful, for example in identifying the unscheduled chemicals of most concern. However, others believed this would be a dangerous approach as it would undermine the whole concept of the GPC, which is based on purpose, rather than on any specific chemical or physical properties.

In the BWC protocol, it is envisaged that lists of agents will be used to trigger declarations, not to limit the applicability of the protocol or the BWC. Implementation of the GPC in the BWC protocol context is more difficult as all agents may be used for peaceful purposes; there are none which can be said to be only of military or other hostile use. It was suggested that the implementation of the GPC could benefit from a division of labour between national authorities and international organisations, in the case of the CWC, the latter would focus, though not exclusively, on scheduled chemicals and the national authorities would be responsible, along with national intelligence agencies and the OPCW's Scientific Advisory Board, for monitoring the use of unscheduled chemicals within their jurisdictions.

### *Compliance Measures*

Before moving on to study in detail the compliance elements of the draft protocol, the workshop addressed the overall architecture of the protocol's verification regime, with reference to relevant OPCW and UNSCOM experience. During the discussions, reference was made to an article in the March 1998 issue of *The CBW Conventions Bulletin* which addressed the elements of a verification architecture, particularly two types of on-site activity: infrequent random visits to declared facilities and challenge investigations. Many participants emphasised that the inclusion of both types of activities in the BWC protocol was essential if it is to act as an effective deterrent against biological weapons. A protocol incorporating such measures could not only deter states from seeking biological weapons, it could also reduce the degree of uncertainty and confusion as to how many and which states have offensive biological weapons programs. Any suspect state which chose to remain outside the protocol would effectively paint itself as a likely possessor. Many participants agreed that deterrence would indeed be the protocol's main objective.

A paper presented to the workshop stated that the CWC and BWC have three primordial functions: asserting a norm of abstention from CBW armament; reaffirming the ancient cross-cultural taboo against the use of disease and poison as weapons; and making it difficult for the international community not to take action against violators of the norms, and providing the nucleus around which such international action can crystallise. However, a number of examples were given of international action taking place outside of the CWC and BWC contexts. For example, investigations of allegations of chemical weapons use conducted by the UN Secretary-General in the 1980s; the disarmament of Iraq by UNSCOM in the 1990s; and investigations by non-governmental organisations of the Sverdlovsk anthrax outbreak of 1979, of the "yellow rain" allegations of the early 1980s, and of allegations of chemical weapons use by CWC States Parties in the late 1990s. Although the investigation of the thrips outbreak in Cuba in 1997 took place under the auspices of the BWC, participants disagreed whether it represented a successful use of the Convention's machinery.

A distinction was made between positive verification of disarmament -- the elimination of declared weapons and prohibited facilities -- and negative verification -- verifying the non-production of weapons in civil dual-use capable facilities and the non-possession of prohibited weapons and facilities. The OPCW carries out both types of verification and states parties have a fairly high level of confidence in positive verification, but less in negative verification. As biological weapons are already prohibited by the BWC, the OPCW will only carry out negative verification, thus influencing the degree of confidence states parties have in the organisation. However, it was also remarked that conducting negative verification is difficult without a full understanding of positive verification. The detailed requirements regarding the extent to which states parties have to declare past programmes is one of the issues yet to be resolved by the AHG.

The workshop next discussed three essential elements of the BWC protocol in turn, declarations, visits and investigations. Beginning with declarations, the workshop discussed briefly the submission of declarations under the CWC, both from the point of view of the Secretariat and of states parties. Besides having problems with the timely submission of initial declarations, the Secretariat is also experiencing difficulties in reconciling transfers between states parties of Schedule 2 and 3 chemicals. The Secretariat is working on ways to improve the situation, including simpler declaration forms and enhanced co-operation with other relevant international organisations. From the point of view of states parties, the workshop was told that there is a lack of uniformity, both in the forms themselves and in the information submitted by states parties. Some of the forms are not particularly "user-friendly" and it is probably inevitable that there will be mistakes in the forms submitted to the Secretariat.

Turning next to on-site visits, a number of participants observed that visits are essential for the effectiveness of the protocol. Visits act as a follow-up to declarations. Without random visits to declared facilities, there would be nothing to deter states parties concealing biological weapons activities in otherwise legitimate facilities. Among the trio of visits currently included in the draft protocol, random, clarification and assistance, the importance of clarification visits, especially to undeclared facilities, was emphasised by some participants.

Over the years, the role of visits has been progressively modified, supposedly at the insistence of the biotech and pharmaceutical industries, in particular those in the USA. Some participants therefore felt that governments needed to put more effort into persuading industry to support the BWC protocol, emphasising the safeguards against the loss of confidential business information. In the USA the industries, represented by the Pharmaceutical Research and Manufacturers of America (PhRMA), have major concerns with on-site visits following their experiences with the intrusive Trilateral Process inspections in the early 1990s. Due to the delayed submission of the US industrial declaration to the OPCW, US companies only have their own experience of the "trilaterals" to go on. It was remarked that it could therefore be productive for European companies to share their experiences of CWC implementation and BWC protocol national trial inspections with their US counterparts. A paper noted that European companies are accustomed to much more intrusive and burdensome inspections than those envisaged by the AHG, with some even including foreign inspectors. Contacts between governments and industry appear to be further developed in Europe than in the USA. Another paper was circulated presenting a summary of a national trial inspection to a European vaccine production facility. The ensuing discussion demonstrated that the visits proposed under the BWC protocol would be neither burdensome nor present an unacceptable risk to confidential proprietary information and that they instead offer the major benefit of providing information

which cannot be gleaned from a declaration. It was also pointed out that industry could benefit by being seen to take a proactive role in efforts to strengthen the BWC.

In its consideration of the elements of the protocol's verification regime, the workshop finally turned its attention to investigations. A paper was presented describing an investigation undertaken in 1976 following the mysterious death of a number of horses close to Dugway Proving Ground in the USA. As Dugway had previously been a chemical/biological weapons testing range, some commentators ascribed the horse deaths to a release of chemical-warfare agent from the base. The paper detailed the methodology of the ensuing investigation and highlighted some important lessons learned. It is important that a single authority acts as lead investigator, that past activities in the area are taken into account, that the investigation itself is exhaustive and issues a final report. This last point was echoed by other workshop participants who observed that unresolved allegations could undermine the regime itself.

The workshop then turned to a more general discussion of investigations, particularly in the CWC context. Within the last year, there have been allegations of chemical weapons use in at least four different conflict areas, none of which have been the subject of investigations of alleged use by the OPCW. The point was made that the OPCW can only act at the request of a state party and not upon media or civil society pressure. However, if such allegations linger, doubts could be cast upon the norm against the use of chemical weapons and upon the effectiveness of the CWC and OPCW. Other participants felt that it was impossible to react to every allegation of chemical weapons use as they occur frequently in conflicts, often for propaganda purposes. The workshop also heard that the OPCW has not ignored the recent allegations. Indeed, consultations with the relevant states parties were undertaken and other states parties have initiated consultations under the procedures provided for in the CWC. On a more general note, some participants remarked that certain CWC states parties continued to allege that other states parties possessed chemical weapons, but did not then utilise the consultation and investigation provisions of the CWC.

### ***The Organisation***

While the opening presentation on the status of CWC implementation showed that much had been achieved since entry into force, the debate that followed included some rather more negative experiences. Although it was widely acknowledged that the Secretariat was performing well, a paper presented to the workshop described an impasse in the implementation of the CWC by the OPCW and states parties, and another participant spoke of a growing "implementation gap" between the CWC and the OPCW. The workshop heard a number of examples, such as the inability of the OPCW's policy-making organs, particularly the Executive Council, to take timely decisions on implementation issues and their apparent preference to discuss administrative matters; the fact that many issues from prior to entry into force have still not been resolved; the uneven manner in which states parties have implemented the CWC nationally; and the fact that many states parties are still in technical non-compliance with the Convention. The paper advanced a number of reasons for this situation including: the general political climate surrounding arms control; an absence of political leadership from states parties; a lack of public attention to the OPCW; and a sense of complacency that chemical weapons had been "dealt with" upon the CWC's entry into force. The workshop heard that the political culture within the OPCW changed after entry into force. Previously, the focus had been on proliferation, disarmament and the dangers of WMD. While the rhetoric remained, the emphasis now has shifted to the protection of national economic and military interests. In addition, the community engaged in the implementation of the CWC is largely concerned with

commerce and trade and is therefore different from that which negotiated the Convention which had primarily consisted of multilateral disarmament experts.

The workshop then considered the lessons which the AHG could learn from the OPCW's first three years. The AHG should carefully consider what burden and when the OPBW should take on. The CWC was described as "front-loaded" in that its timelines were very short. Participants heard that the AHG is indeed extending the protocol's timelines to anything from six months to two years after entry into force. Drawing on the experiences of UNSCOM, participants emphasised the importance of achieving a balance between the technical and political aspects of disarmament. The effects, as one participant put it, of UNSCOM straying into politics after 1997 demonstrated that the technical and political aspects of OPBW activities should be clearly separated and the roles of the Executive Council and Secretariat should be precisely defined. While some participants felt that too many issues had been left unresolved by the CWC negotiators in Geneva, others believed that some issues were best resolved pragmatically on the ground after entry into force. It was also found that some issues which had been contentious during the Preparatory Commission, lost their importance with the practical implementation of the CWC. The workshop also received a presentation containing a proposed structure for the OPBW, based on the current draft of the protocol and the experiences of the OPCW. It would consist of four main divisions and have a total staff of around 250, roughly half that of the OPCW.

### ***The Public Interest***

Recurrent themes throughout the workshop's discussions were the absence of public and political interest in the CWC and BWC, the dominant role occupied by governments in their implementation and the relatively limited information available to the public on the implementation of the CWC. It was frequently observed that an injection of political will is required to encourage CWC states parties to fulfil their obligations while the AHG requires it to bring its negotiations to a conclusion. Political and public attention is also necessary to achieve the universality of both the CWC and BWC protocol. Civil society can play an important role in holding governments accountable to their international obligations and in ensuring that the "implementation gap" between the treaties as negotiated and the way in which they are actually implemented does not widen. Particular emphasis was given to raising awareness and support for the CWC and BWC protocol within the scientific community, particularly amongst chemists and biologists. The workshop heard that the OPCW is still developing its links with civil society and that these efforts indeed suffer from a lack of public attention to chemical weapons. Participants proposed ideas such as a "friends of the CWC" group and widening the CWC "support community" to include those beyond the traditional arms control constituency. The awareness-raising value of events such as the "Millennium Forum" in May and the 75th anniversary of the Geneva Protocol in June was also mentioned. However, it was argued that it is difficult to raise the profile of an organisation that prides itself on its strict confidentiality regime.

### ***Confidentiality***

The confidentiality provisions of the draft protocol are almost settled, the workshop was told. Some participants remarked that too much emphasis had been placed on the risks to confidential proprietary information (CPI). This emphasis came mainly from diplomats and governmental experts who feel they have to protect their national industries. However, practical experience from the CWC and from national trial inspections in the BWC protocol context has



demonstrated that facility managers themselves often have fewer concerns. In the biotech and pharmaceutical industries managers are more often concerned with protecting the small "kitchen tricks" which make their products cheaper or better than their rivals'. Such innovations would not be relevant to visiting inspectors and could easily be concealed.

After almost three years of CWC implementation, chemical industries have expressed themselves satisfied with the confidentiality procedures of the OPCW. The workshop heard that the most sensitive period for CPI in the pharmaceutical industry is one to five years after a patent application is filed. It would be in this research and development phase that visits by inspectors would cause the greatest concern. However, the protection of CPI could be ensured by the use of managed access techniques similar to those in the CWC. It was suggested that industrial espionage was more likely to be committed by a member of the facility's own staff than by a member of a small inspection team who only visits the facility perhaps once every several years and on a randomly-selected basis, as the latter would be a remarkably uncertain way of targeting particular information. With the safeguards envisaged in the draft protocol, the risks to CPI are likely to be less than those in the CWC.

### ***Non-Transfer Measures***

Approaching the end of deliberations on its main agenda item, the workshop turned to the non-transfer measures envisaged in the BWC protocol and relevant experience from the CWC. Some participants doubted whether certain delegations would ever agree to follow a similar approach to that adopted in the CWC because ad hoc arrangements such as the Australia Group are still unchanged. Participants debated the legitimacy of ad hoc arrangements with some arguing that all states parties are entitled to enact their own controls and others responding that such controls should not be enacted on an ad hoc basis.

The workshop also heard differing views on the impact of the export control debate on the AHG negotiations. On one side it was argued that export controls are a reality which has been accepted by OPCW delegations as demonstrated by the abandonment of opposition to the Australia Group in favour of trade-offs in other areas. However, on the other side, it was argued that in fact not all OPCW delegations had accepted the situation and that a continued lack of progress there would influence their position within the AHG.

It was suggested that it might be worthwhile to distinguish between states parties to the BWC and states parties to the protocol. As there would be significant consequences of joining the protocol, states which do so should be rewarded, while there should also be disincentives for those who stay outside. Non-transfer measures could be one way to make this distinction in a similar way to the graduated transfer restrictions contained in the CWC, the second stage of which enters into force on 29 April.

### **FUTURE WORK OF THE STUDY GROUP**

The closing session considered topics for discussion at future meetings of the study group. The next workshop will meet from 18-19 November in Geneva where the general topic will be key issues facing the fifth BWC review conference, which will be held in 2001. A number of topics were suggested for discussion, including: advances in science and technology; bioregulators; pests and vectors; production facilities; Article V procedures; engaging scientists and the scientific community; toxins; the human genome project; crop warfare; and co-operation with those working in the bioethics field.

There is a continuing need for cross-fertilisation between those involved in CWC implementation and those involved in the negotiation of the BWC protocol. While there seems to be an increasing public awareness of the side effects of technological advances, this has not yet provided additional impetus or public attention to the protocol negotiations. The workshop was reminded that technological developments can also support the objectives of the protocol as well as undermine them.

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## **List of Papers**

Marie Chevrier (USA): *Proposed Structure of the Organization for the Prohibition of Bacteriological (Biological) and Toxin Weapons (OPBTW).*

Daniel Feakes (UK): *Political Potholes? The OPCW's road to maturity.*

Benjamin Garrett (USA): *Leading a horse to water: Investigation of alleged CW use, Dugway Proving Ground, July 1976.*

Jan Medema (The Netherlands): *Non-scheduled compounds and the General Purpose Criterion.*

Graham Pearson (UK): *Report on the work of the Ad Hoc Group (copies of transparencies).*

Julian Perry Robinson (UK): *Effectiveness of the international treaties against chemical and biological armament, and experiences worth sharing.*

Heiner Staub (Switzerland): *Comparison between BWC transparency visits and Good Manufacturing Practises (GMP) inspections.*