

THE CBW CONVENTIONS BULLETIN

News, Background and Comment on Chemical and Biological Weapons Issues

ISSUE NO. 75

MARCH 2007

Quarterly Journal of the Harvard Sussex Program on CBW Armament and Arms Limitation

THE NEXUS BETWEEN THE OPCW AND THE INTERNATIONAL CRIMINAL COURT

Lisa Tabassi*

For three of its sessions now the Assembly of the States Parties of the International Criminal Court¹ (“ICC” or “Court”) has met in The Hague, the seat of the ICC. A number of members of OPCW² delegations, wearing their ICC hats, joined their national delegations to the ICC to participate in the decisions concerning the administration and management of the Court for the coming year.

The ICC is the newest international organisation to be seated in The Hague and one which, along with the OPCW, also has a specific treaty-based mandate concerning chemical weapons. One might wonder where these two institutions and their constituent treaties (the Rome Statute and the Chemical Weapons Convention) intersect, as international organisations, and in terms of national implementation by their respective States Parties. Since well over half of CWC States Parties have become party to the Rome Statute,³ that question bears scrutiny. The present comment examines the matter in brief.

Enforcement of the Chemical Weapons Convention

The object and purpose of the Chemical Weapons Convention (“CWC”) is to categorically eliminate all chemical weapons. The CWC codifies the norm banning chemical weapons under any circumstances: not only their use or military preparations to use, but their development, production, other acquisition, stockpiling and retention or transfer (direct or indirect) to anyone, as well as any assistance, encouragement or inducement in any way for anyone to engage in any of those activities.⁴ Destruction of existing stockpiles is required within specific timeframes.⁵ And the Convention requires States Parties to adopt the necessary measures to ensure the non-proliferation of chemical weapons: transfers of certain toxic chemicals and their precursors are banned to or from States not party or can be transferred only under strict conditions specified by the Convention.

Who enforces the Convention and who prosecutes violations? CWC States Parties are required, in accordance with their constitutional processes, to enact penal legislation covering activities prohibited by the CWC and to enforce the CWC in their territories or any place under their jurisdiction or control, and to extend that penal legislation to natural persons holding their nationality, no matter where the person may be located.⁶ States Parties are also required to cooperate with each other and afford the appropriate form of legal assistance to facilitate enforcement of the Convention.⁷

... continued on page 8

STRENGTHENING THE CWC REGIME FOR TRANSFERS OF DUAL-USE CHEMICALS

Jonathan B Tucker*

Now that the Chemical Weapons Convention (CWC) has passed the ten-year mark, it is time to plan for the coming transition. As the declared stockpiles of chemical weapons are eliminated over the next several years, the primary mission of the treaty regime will shift from chemical disarmament to preventing covert rearmament. A key element of this task is controlling the international trade in “dual-use” chemicals that have legitimate commercial applications but can also be employed as, or converted into, chemical weapons.

The export-import provisions of the CWC consist of two basic elements: restricting trade in dual-use chemicals between member states and non-states parties, and monitoring transfers of such chemicals among states parties.¹ To implement these provisions, CWC member states must adopt national legislation and submit aggregate export-import data to the Technical Secretariat of the Organization for the Prohibition of Chemical Weapons (OPCW) in The Hague. At present, many states parties are not carrying out the trade-related provisions of the CWC adequately, limiting their effectiveness. This paper discusses the operation of the export-import regime and suggests ways of improving its implementation.

Restrictions on Trade in Dual-Use Chemicals

The CWC restrictions on trade in dual-use chemicals were intended primarily as a means to penalize countries that refuse to sign and ratify the convention, giving them an economic incentive to join. Nevertheless, the trade controls also play a useful nonproliferation role by constraining the ability of hold-out states to obtain the precursors needed to produce chemical warfare agents in militarily significant quantities. The restrictions are keyed to the treaty’s three Schedules of Chemicals, which list toxic chemicals and precursors known

... continued on page 2

Invited article by Jonathan Tucker	1-7
Invited article by Lisa Tabassi	1 and 7-12
OPCW PrepCom History Project	12
News Chronology November 2006-January 2007 ...	13-32
Forthcoming Events	32
Recent Publications	33-34
Book Reviews	35-36

to have been used in the past for chemical warfare purposes. Chemicals were assigned to the schedules based on the risk they pose to the goals of the CWC and the extent of their legitimate commercial use. Schedule 1 lists chemical warfare agents and precursors that have few if any peaceful applications, whereas Schedules 2 and 3 contain toxic chemicals and precursors that are utilized commercially in limited and large quantities, respectively.

With the entry into force of the CWC in April 1997, transfers from member states to non-states parties of the chemicals listed on Schedule 1 were banned immediately, and those listed on Schedule 2 were added three years later, in April 2000.² In 2002, five years after the treaty's entry into force, the Conference of the States Parties considered but did not adopt a ban on exports of Schedule 3 chemicals to non-states parties. At present, such transfers are permitted if the recipient provides a certificate stating that the chemicals will be utilized only for non-prohibited purposes and will not be re-exported, and listing the types and quantities of the chemicals, the intended end-use(s), and the names and addresses of the end-user(s).³

To comply with the trade-related obligations of the CWC, the member states must establish a National Authority to oversee domestic implementation of the treaty and serve as a point of contact with the OPCW. They must also adopt legislation creating effective national transfer controls, including (1) end-user and re-export certificates, along with procedures for processing them efficiently before authorizing exports; (2) measures to verify that chemical imports and exports comply with the CWC trade restrictions, such as in-transit shipment controls and post-shipment checks; and (3) penalties for violations of the export-import regulations.⁴ Australia, for example, requires chemical manufacturers and traders to obtain a license or permit before exporting Schedule 1 and 2 chemicals, and to report such transfers to the National Authority on a regular basis.⁵

Because implementing the CWC trade restrictions is the responsibility of each member state, the OPCW Technical Secretariat has no means of enforcing these measures at the international level. What little information is available on national implementation is not encouraging. To begin with, less than half of the 180-plus states parties have the necessary export-control laws and regulations on the books. Even with appropriate legislation in place, countries may not have the resources to monitor chemical exports and imports effectively. Inadequate national enforcement of the CWC trade restrictions has allowed some unauthorized transfers to take place, including the delivery of 184 metric tons of Schedule 2 chemicals to an unidentified non-state party in 2004.⁶ Moreover, the National Authorities generally do not follow up to make sure that a Schedule 2 chemical transferred to a state party is not subsequently re-exported to a non-state party. Equally difficult to monitor are transfers of "intangible" technologies such as production know-how.⁷

Another factor limiting the effectiveness of national trade controls is their narrow scope. The CWC bans the development, production, stockpiling, and use of toxic chemicals and their precursors *except* for nonprohibited purposes, as long as the types and quantities are consistent with those purposes. This approach, known as the General Purpose Criterion, has enabled the treaty to remain viable in the face of rapid scientific and technological change by covering all relevant

chemicals, including those that may be synthesized in the future. The fact that this comprehensive coverage also applies to transfers of chemicals is clear from Article VI, paragraph 2, which states that "each State Party shall adopt the necessary measures to ensure that toxic chemicals and their precursors are only . . . transferred . . . for purposes not prohibited under this Convention." Thus, an export-control system consistent with the CWC must go beyond the schedules to prevent the transfer of *any* chemical intended for prohibited purposes. The United Kingdom, for example, has a "catch-all" provision requiring companies to obtain prior government approval to export specified chemicals that are not on control lists but are or may be intended for use in chemical weapons programs.⁸ Unfortunately, most CWC member states have ignored the General Purpose Criterion and limited their export-control regulations to scheduled chemicals.

Given the deficits in national implementation of the CWC trade restrictions, it would be desirable for the OPCW to establish a mechanism for monitoring exports of treaty-relevant chemicals at the international level. At present, the only way the Technical Secretariat can investigate illicit transfers is for a state party to request a challenge inspection, yet the political hurdles impeding the use of this mechanism remain high. It would be possible, however, for the OPCW inspectorate to develop a separate set of measures for monitoring the trade restrictions in the CWC. For example, during routine on-site inspections of commercial plants that produce Schedule 2 or 3 chemicals, inspectors could conduct random checks of export documents.⁹ To date, OPCW inspectors have not requested access to such information because of its proprietary nature: commercial competitors could exploit data on foreign sales to offer the same products at lower prices and lure away customers. Nevertheless, the OPCW should be entrusted with export information because it has a good record of safeguarding industry secrets.

Reporting of Data on Transfers of Scheduled Chemicals

The second element of the CWC trade-control regime requires member states to submit aggregate data declarations on their international transfers of treaty-relevant chemicals. According to Part VI of the Verification Annex, states parties may transfer small amounts of Schedule 1 chemicals among themselves only for specified research, medical, pharmaceutical, or protective purposes, and may not re-export them to a third country. Such transfers must be notified to the Technical Secretariat in advance and also reported annually. In 2004, twelve states parties were involved in 53 transfers of Schedule 1 chemicals.¹⁰ The item transferred most often was saxitoxin, tiny amounts of which are used in medical kits to diagnose paralytic shellfish poisoning.

The large majority of transfers involve chemicals on Schedules 2 and 3. Under Part VII of the CWC Verification Annex, member states must submit initial and annual declarations containing Aggregate National Data (AND) for the previous calendar year on the total quantity of each Schedule 2 chemical exported or imported, as well as the amount of such chemicals transferred to or from each country involved. Similarly, Part VIII of the Verification Annex requires states parties to submit initial and annual AND declarations on their exports and imports of Schedule 3 chemicals. Transfers are reported in aggregate form because

they often include shipments in quantities below the declaration threshold. The obligation to submit AND declarations applies not only to manufacturers and processors of scheduled chemicals, but also to companies outside the traditional chemical industry that utilize scheduled chemicals or trade them internationally. In 2004, 47 states parties declared 518 aggregate transfers of Schedule 2 chemicals to or from other states parties; 111 states parties declared about 1,420 aggregate transfers of Schedule 3 chemicals to or from other states parties; and eight states parties declared transfers of five Schedule 3 chemicals to four non-states parties.¹¹

Ideally, the export-import declarations submitted by CWC states parties should help the OPCW Technical Secretariat to monitor the global flows of scheduled chemicals and identify suspicious transactions. In practice, however, the national declarations vary in quality and are difficult to validate. Although both the shipping and recipient countries involved in a transfer of scheduled chemicals are required to report the transaction to the OPCW, efforts by the Technical Secretariat to reconcile the export and import figures often turn up “discrepancies,” or differences that exceed the CWC declaration threshold for the chemicals in question. During the first five years after entry into force of the convention, approximately 78 percent of the transfers of scheduled chemicals declared by the exporting and importing parties did not match.¹² In many cases, the discrepancies arose from the failure of one of the countries involved to submit a declaration, usually because it lacked the national legislation and regulations needed to monitor its chemical trade effectively.

The number of mismatches between exports and imports of scheduled chemicals has declined since 2001 but still remains unacceptably high, in part because states parties use different statistical methodologies and criteria to collect and report trade data. Some countries declare transfers of scheduled chemicals in ranges, whereas others declare the exact amounts. National practices also vary with respect to rounding rules and the reporting of low concentrations of scheduled chemicals, which are often traded in formulations or mixtures rather than in pure form. Other sources of discrepancies in export-import data include clerical errors, the fact that some shipments straddle the end of the calendar year, and the increasing use of free ports and free-trade zones that are poorly monitored. For all these reasons, the Aggregate National Data declarations are not sufficiently accurate to be of much value as a nonproliferation tool.¹³

To compile reliable trade data, each National Authority must have a good understanding of its domestic chemical industry, including the names of major customers and suppliers and their levels of activity. Such information can be gathered from a variety of sources, including industry surveys, chemical company directories, trade associations, and analysis of customs data. Unfortunately, only a few National Authorities monitor chemical trade effectively. Although many countries rely on customs data as the basis for their Aggregate National Data declarations, national customs systems vary in their ability to track transfers of scheduled chemicals. In an attempt to create a uniform system for this purpose, the World Customs Organization developed six-digit Harmonized System (HS) classifications for a large number of scheduled chemicals, which were approved in June 1999 and included in the OPCW’s *Handbook on Chemicals*.¹⁴

One problem with the HS customs classifications is that they generally refer to groups of structurally related chemicals rather than to individual compounds. For example, the six-digit classification 2812.10 covers seven chlorides listed in the CWC schedules, including phosgene, with no further differentiation.¹⁵ For this reason, the HS system is not fine-grained enough to identify transfers of specific scheduled chemicals in the huge volume of chemical trade. To achieve greater specificity, some countries, such as Australia and Canada, have introduced unique eight- or ten-digit codes for all scheduled chemicals and chemical families and their more common representatives, 106 in total.¹⁶ The use of this enhanced HS coding system by all CWC member states would yield more consistent export-import data and reduce the frequency of discrepancies in the national declarations.

The Australian Customs Service has adopted a computerized self-reporting system for transfers of scheduled chemicals in which the registered owner or broker enters the export or import classification code for the chemical in question, along with other data related to the transaction. The customs service then uses a combination of computerized and manual methods to check the data. In addition, the classification numbers for scheduled chemicals trigger electronic “flags” that alert customs officials to verify that the shipper has a valid permit. The drawback of the Australian system is that it is complex and requires extensive industry-wide and company-specific outreach.¹⁷

Sophisticated technical means for monitoring international transfers of scheduled chemicals may be adopted at some point in the future. Such approaches include marking shipments with Global Positioning Satellite (GPS) transponders so that they can be tracked in real-time. In addition, individual containers of chemicals might be tagged with inexpensive Radio Frequency Identification (RFID) chips, which store data that can be retrieved remotely. Passive RFID tags have no internal power supply; the incoming radio-frequency signal induces a minute electrical current in the antenna, providing just enough power for the integrated circuit to transmit a response. Low-cost RFID tags are currently in use for inventory control at large retail stores such as Wal-Mart and Target in the United States, Tesco in the United Kingdom, and Metro in Germany.¹⁸

The CWC and the Australia Group

In addition to the trade-related obligations in the CWC, an informal coordinating body known as the Australia Group (AG) harmonizes national export controls on dual-use chemicals. The AG was established in 1985 in response to the finding that both Iraq and Iran had procured chemical weapons precursors from suppliers in several Western countries. Although the AG has since grown from 15 participants to 39, it has remained relatively small because it admits only exporting nations that comply fully with the CWC and the Biological and Toxin Weapons Convention, are seriously committed to chemical and biological nonproliferation, and have effective national export-control systems. Argentina is the only developing country member. Expanding the AG by admitting states such as Russia would risk diluting its effectiveness and ability to reach consensus. Instead, the group engages in outreach to non-members, including a number of second-tier exporters.¹⁹

Participants in the AG base their national export controls

on common control lists, which currently include 63 precursor chemicals and 19 toxins, as well as dual-use manufacturing equipment and related technologies.²⁰ AG members also share intelligence on suspect chemical and biological weapons programs. Each participating country is allowed to implement the export-control guidelines as it sees fit. The United States, for example, exempts other AG members from licensing requirements for dual-use chemicals on the condition that they are not re-exported to a third destination that would require a license for direct export.²¹ To safeguard proprietary client information, the AG countries must report the export license requests they have denied but not those they have approved.

The CWC Schedules of Chemicals differ from the AG Common Control List for chemical weapons precursors in both purpose and structure.²² The aim of the CWC schedules is to provide a basis for verifying that states parties are complying with their treaty obligations not to develop, produce, or stockpile chemical weapons. Toxic chemicals and precursors are assigned to the three schedules based on the risk they pose to the object and purpose of the Convention, the extent of their legitimate industrial use, and the feasibility of monitoring.²³ In contrast, the goal of the AG Common Control List is to prevent the supply of precursors and other dual-use items to the small number of countries seeking chemical weapons. Because the purpose of the AG list is nonproliferation rather than verification, it does not include chemical warfare agents but only precursors, including 24 compounds not present in the CWC schedules because they are used early in the chemical weapons production process or have extensive commercial applications, making them poorly suited for verification. The AG also maintains common control lists for biological agents (including 19 toxins, compared with only two on the CWC schedules) and dual-use production equipment and technology.

Whereas the CWC restrictions on trade in scheduled chemicals are multilateral and apply exclusively to non-member states, the AG export controls are targeted against both non-states parties and certain states parties for which national intelligence suggests the existence of a clandestine chemical weapons program. During the endgame of the CWC negotiations, the demand by several countries that the AG be dismantled became an obstacle to reaching consensus on the treaty text. On August 6, 1992, Ambassador Paul O'Sullivan of Australia sought to resolve this issue by reading a statement on behalf of the AG pledging that its members would "undertake to review, in the light of the implementation of the Convention, the measures that they take to prevent the spread of chemical substances and equipment for purposes contrary to the objectives of the Convention, with the aim of removing such measures for the benefit of States Parties . . . acting in full compliance with their obligations . . ."²⁴

Implicit in the O'Sullivan statement was the pledge that CWC member states in good standing would receive preferential treatment with respect to transfers of scheduled chemicals. Thus, the hold-out countries dropped their objection to the treaty text in the expectation that the O'Sullivan commitment would soon be translated into action. Since the entry in force of the CWC, however, the AG has continued to target export controls on states parties suspected of noncompliance. Indeed, a condition in the U.S. Senate's Executive Resolution of Ratification of the CWC requires

the president to report annually to Congress that the AG continues to operate effectively.²⁵

Since the 9/11 terrorist attacks, the AG has tightened its export-control guidelines in response to the growing threat of chemical terrorism. These enhancements include a "catch-all" provision that requires AG member states to license exports of items that appear linked to a chemical weapons program even if they are not present on the Common Control Lists; and a "no-undercut" rule that prevents one AG member from approving the export of a dual-use item to a particular country if another member of the group has already denied an export license for the same item, thereby reducing the ability of proliferators to play one supplier off against another. Because dual-use precursors and production equipment may be available from non-members of the AG, the group is not a panacea for preventing chemical weapons proliferation. Nevertheless, coordinated export controls can slow efforts by states or terrorist groups to acquire chemical weapons and buy time for other policy instruments to be brought to bear.

Several countries belonging to the Non-Aligned Movement (NAM), such as Cuba, India, Iran, and Pakistan, contend that the application of AG export controls to CWC member states is discriminatory and violates Article XI of the treaty, which provides that states parties "shall not maintain among themselves any restrictions . . . incompatible with the obligations undertaken under this Convention, which would restrict or impede trade and the development or promotion of scientific and technological knowledge in the field of chemistry for . . . peaceful purposes." Although only a few CWC member states are the targets of AG export controls, the possibility of trade restrictions has diminished the economic incentive for developing countries to join the convention or to implement it fully. As Ambassador Prakash Shah of India has observed, "Why would signatory states not threatened by chemical weapons adhere to the CWC . . . if the benefits of free international trade and cooperation, unhampered by the Australia Group or similar discriminatory arrangements, are not available to them?"²⁶ Other critics contend that the continued existence of the AG reflects a lack of confidence in the CWC²⁷ and that it runs counter to the liberalization of international commerce promoted by free-trade zones and the World Trade Organization.²⁸

Former South African diplomat Jean du Preez argues that the sharing of secret intelligence information among AG members and the targeted use of export controls against CWC states parties suspected of violations have come to substitute for the treaty's own compliance mechanisms—particularly challenge inspection, which is considered politically too risky to use. Unlike the multilateral compliance measures within the CWC, however, AG intelligence-sharing and decision-making are non-transparent and may appear arbitrary to outsiders, and the targeted states have no opportunity to respond to the allegations against them. Moreover, given the failures of Western intelligence that preceded the 2003 Iraq War, the use of national intelligence information as the basis for AG export controls could end up punishing innocent parties unfairly. According to du Preez, the secretive operations of the AG have alienated many developing countries, which believe that they were led to commit to the burdens of CWC implementation under false pretences. This frustration may be manifesting itself in the fact that less than half of the member states have adopted comprehensive

national implementing legislation and regulations.²⁹

AG countries rebut these criticisms by asserting that they have an obligation under Article I of the CWC “never under any circumstances ... to assist, encourage or induce, in any way, anyone to engage in any activity” prohibited by the treaty. Because the multilateral verification system is not foolproof, even member countries that appear to be in compliance may be involved in clandestine chemical weapons activities. Indeed, the United States alleged openly in 2005 that four CWC states parties—China, Iran, Russia, and Sudan—were violating the convention. If these charges are true, then AG export controls are still necessary as a “safety net” to prevent private companies and traders from knowingly or unknowingly assisting proliferators in contravention of Article I. Furthermore, because the CWC trade restrictions were not designed to deal with the threat of chemical terrorism, the additional measures coordinated by the AG, such as the catch-all provision and the no-undercut policy, are needed to prevent non-state actors from using front companies to acquire chemical weapons-related materials and equipment.

In response to the charge that the AG acts as a suppliers’ cartel to preserve the market dominance of Western companies by restricting transfers of chemicals and technology to the developing world, AG members stress that the Common Control Lists were designed to have a minimal impact on legitimate trade. Of the 2-3 million requests for chemical exports per year, the AG denies less than one-half of 1 percent, although countries suspected of illicit activity are disproportionately affected.³⁰ According to a defender of the AG, “Licensing determinations are based on the nonproliferation credentials of the recipient and denied only if the transactions could contribute to proliferation.”³¹ AG members also argue that export controls actually facilitate legitimate trade by building confidence that transferred chemicals will not be misused for prohibited purposes. As long as such divergent perceptions persist, the debate over the continued existence of the AG controls, particularly for CWC states parties, is unlikely to be resolved.

To what extent can the multilateral trade restrictions in the CWC eventually take the place of the AG? Daniel Feakes of the Harvard Sussex Program contends that “the more confidence which states parties have in the effectiveness of the CWC transfer controls, the less need there will be for parallel measures.”³² For that to happen, however, national implementation of the convention would have to improve dramatically. The problem is that the chain is only as strong as its weakest link. Perhaps when all states parties involved in chemical trade have robust export-control systems in place, the CWC transfer restrictions will be effective, but that is unlikely to be accomplished anytime soon.

A more fundamental problem is that the multilateral transfer controls are based on the assumption that all CWC member states are complying fully with their treaty obligations—an assumption that the AG countries do not share. According to a British government paper, an Aggregate National Data declaration must be submitted to the OPCW only “after the import or export has taken place. . . . [The declaration] does not of itself constitute a process of export control, which requires a decision to be made *in advance* as to whether a specific export should or should not be permitted. Such a decision must remain a responsibility of States Parties, and Article I of the Convention does not in any way limit the

exercise of this responsibility to consideration of exports only to States not Parties.”³³

Until full compliance with the CWC can be assured through the use of measures within the treaty framework such as challenge inspections, AG members will rely on national intelligence information and harmonized export controls to prevent chemical weapons proliferation. In the words of the British paper, “Exporting states must continue to permit transfers *only* if they believe the items will *not* be misused. They cannot permit transfers simply on the grounds that they cannot *prove* publicly that they *will* be misused.”³⁴

Trade-Control Measures Outside the CWC

The terrorist attacks of September 11, 2001, have led to much greater international acceptance of the need for nonproliferation export controls. In addition to the trade restrictions of the CWC, a number of additional measures outside the treaty have been introduced to monitor and control the international trade in dual-use chemicals. These initiatives, listed below in chronological order, are not intended to substitute for the CWC but rather to complement it.

Container Security Initiative. Launched in January 2002, the Container Security Initiative (CSI) sends U.S. customs officers to ports in cooperating countries around the world to inspect a small fraction of the containerized cargo headed to the United States.³⁵ The containers are inspected before being loaded onto ships, to make sure that they do not contain unconventional weapons or materials. Containers are selected for inspection based on a complex algorithm that includes customs codes, the type of destination, how often the shipment has been reloaded in transit, and other variables. Because CSI is aimed exclusively at protecting the U.S. mainland, it does not provide global protection.

Green Customs Initiative. Founded in June 2002 as a joint effort of the World Customs Organization, the United Nations Environment Program, Interpol (the international criminal police organization), the OPCW, and other international organizations, the Green Customs Initiative combats illicit trade in ozone-depleting substances, toxic chemicals, hazardous wastes, and endangered species. According to some estimates, local and international crime syndicates earn up to \$31 billion annually from such trafficking. One goal of the Green Customs Initiative is to promote the adoption of a standard customs classification system to monitor the legitimate trade in chemicals.³⁶

Proliferation Security Initiative. In May 2003, U.S. President George W Bush announced the Proliferation Security Initiative (PSI), an effort by a group of like-minded states to interdict shipments of nuclear, biological, or chemical weapons, delivery systems, and related materials to proliferators or terrorist organizations. Under international maritime law, commercial ships suspected of carrying an illicit cargo can be inspected if they travel under the flag of a PSI member state (such as Cyprus, Liberia, or Panama) or stop in the port of a cooperating country. Nevertheless, it remains illegal to board government-owned vessels or non-cooperating ships on the high seas; in such cases, forcible interdiction would be tantamount to an act of war. Although the Bush administration claims that more than 80 countries have

endorsed PSI, the initiative has no international secretariat or dedicated funding source and does not make public its successes or failures, providing few yardsticks with which to judge its performance.³⁷

UN Security Council Resolution 1540. This resolution, adopted by the UN Security Council in April 2004 under Chapter VII of the UN Charter (“Action with Respect to Threats to Peace, Breaches of the Peace and Acts of Aggression”), seeks to prevent non-state actors from manufacturing, acquiring, or trafficking in nuclear, biological, or chemical weapons, materials, or delivery systems. To this end, all states—whether or not they are parties to the CWC or other nonproliferation treaties—must establish a national system of export controls for dual-use chemicals and other items of proliferation concern. A “1540 Committee” reporting to the Security Council monitors the implementation of the resolution.

Policy Recommendations

As the global expansion of chemical industry increases the volume of international trade in dual-use chemicals and production equipment, export controls will remain an important nonproliferation tool. For this reason, efforts to ensure the effective implementation of the trade-related provisions of the CWC warrant greater attention and effort at both the national and international levels. The following policy recommendations should be considered during the preparations for the Second Review Conference of the CWC, which will convene in The Hague on 7-18 April 2008.

1. *Introduce formal international measures for verifying the CWC transfer controls.* OPCW inspectors should be authorized to conduct random checks of export and import documents during routine on-site inspections at Schedule 2 and 3 production facilities. The inspectors should also draw on the lessons learned from the trade-monitoring system established by the United Nations Special Commission (UNSCOM) during the 1990s to oversee Iraq’s imports of dual-use goods.³⁸
2. *Urge CWC member states to enact domestic legislation requiring full industry compliance with the trade restrictions and reporting requirements, and imposing penal sanctions for violations.* In particular, chemical manufacturing and trading companies should be liable for fines and other punishments if they ship Schedule 1 or 2 chemicals to non-states parties, or knowingly submit incomplete or inaccurate declarations to the National Authority.
3. *Conduct outreach to chemical manufacturers and exporters about the risk of diversion of dual-use chemicals and the need for companies to police themselves.* Exporting companies should be familiar with their customers and refuse to sell scheduled chemicals to unknown parties; the same applies to unscheduled chemicals for which there is evidence of intended misuse. A useful set of guidelines for chemical exporters is included in the “responsible care” program sponsored by the International Council of Chemical Associations.³⁹
4. *Make it easier to reconcile the Aggregate National Data submitted by CWC states parties by harmonizing the declaration criteria used by individual countries.* Member states should improve the consistency of their national export-import data by adopting a standard customs clas-

sification system and declaration formats, and by developing “best practices” for tracking national trade in scheduled chemicals.

5. *Establish a consultative committee under Article IX of the CWC in which states parties that export or import scheduled chemicals can exchange information and strive to resolve discrepancies in the Aggregate National Data they report to the OPCW.* This consultative committee could also discuss compliance concerns related to transfers of scheduled chemicals.

Notes

- * Jonathan B Tucker is a visiting fellow at the German Institute for International and Security Affairs (Stiftung Wissenschaft und Politik) in Berlin.
- 1 OPCW, “International Transfer of Scheduled Chemicals under the Chemical Weapons Convention,” available online at http://www.opcw.org/html/db/unvers_transfer.html
 - 2 According to a decision by the Fifth Session of the Conference of the States Parties (C-V/DEC.16 of 17 May 2000), products containing Schedule 2 chemicals may be transferred to non-states parties if the concentration is 1 percent or below for Schedule 2A chemicals, 10 percent or below for Schedule 2B chemicals, or the products are identified as consumer goods packaged for retail sale for personal use.
 - 3 According to a decision by the Sixth Session of the Conference of the States Parties (C-VI/DEC.10 of 17 May 2001), end-use certificates are not required for products that contain 30 percent or less of a Schedule 3 chemical or that are identified as consumer goods packaged for retail sale for personal use.
 - 4 Barry Kellman and Edward A Tanzman, *Manual for National Implementation of the Chemical Weapons Convention* (Web Edition), November 1999.
 - 5 Australia, “Australia’s Experience in Tracking Systems for International Trade in Chemicals Listed in the Chemical Weapons Convention’s Schedules of Chemicals”, National Paper for the First Review Conference, 9 May 2003 (RC-1/NAT.29), p 2.
 - 6 OPCW, *Annual Report for 2005*, C-11/4, 6 December 2006, p 5.
 - 7 Daniel Feakes, “Export controls, chemical trade and the CWC”, in Jonathan B Tucker (ed.), *The Chemical Weapons Convention: Implementation Challenges and Solutions* (Monterey Institute, April 2001), p 48.
 - 8 United Kingdom of Great Britain and Northern Ireland, “The Role of Export Controls in the Implementation of the Chemical Weapons Convention”, National Paper for the First CWC Review Conference, 29 April 2003 (RC-1/NAT.12), p 2.
 - 9 Feakes, “Export controls, chemical trade and the CWC”, p 49.
 - 10 OPCW, *Annual Report for 2005*, p 5.
 - 11 Ibid.
 - 12 OPCW, *Consolidated Unclassified Verification Implementation Report, April 1997-31 December 2002*, RC-1/S/6, 25 April 2003.
 - 13 Daniel Feakes, “Evaluating the CWC verification system”, *Disarmament Forum*, no 4 (2002), p 16.
 - 14 OPCW, International Cooperation Division, *Handbook on Chemicals*, online at www.opcw.org.

- ¹⁵ Australia, "Australia's Experience in Tracking Systems for International Trade", p 4.
- ¹⁶ Ibid.
- ¹⁷ Ibid.
- ¹⁸ Wikipedia, "Radio Frequency Identification," online at: <http://en.wikipedia.org/wiki/RFID>
- ¹⁹ Sharon Squassoni, Steve Bowman, Steven A Hildreth, and Jill Parillo, "Nonproliferation control regimes: background and status", *CRS Report for Congress*, updated 14 February 2007, p 34.
- ²⁰ Australia Group, "AG Common Control Lists", online at: <http://www.australiagroup.net/en/agcomcon.htm>
- ²¹ James I Seevaratnam, "The Australia Group: origins, accomplishments, and challenges", *Nonproliferation Review*, vol 13 no 2 (July 2006), p 404.
- ²² Robert J Mathews, "A comparison of the Australia Group List of Chemical Weapon Precursors and the CWC Schedules of Chemicals", *Chemical Weapons Convention Bulletin*, no 21 (September 1993), pp 1-3.
- ²³ Chlorine, for example, was not included on the CWC schedules because it is used in such vast quantities for peaceful purposes (such as water purification) that it does not provide a realistic trigger for routine verification. As indicated by the recent attacks by Iraqi insurgents involving chlorine, however, it remains a potential chemical warfare agent and hence is covered by the General Purpose Criterion.
- ²⁴ Statement made on behalf of the Australia Group by the Representative of Australia, Ambassador Paul O'Sullivan, at the 629th Plenary Meeting of the Conference on Disarmament, CD/1164, 7 August 1992.
- ²⁵ U.S. Senate, Executive Resolution on Ratification of the CWC (S. Exec. Res. 75 of 24 April 1997), online at http://www.fas.org/bwc/us_cwc_senate_resolution.htm
- ²⁶ Prakash Shah, "International co-operation in chemical trade: has the Chemical Weapons Convention helped?" *OPCW Synthesis*, April 2001.
- ²⁷ Ernst Wyszomirski, "The CWC and barriers to chemical trade", *Chemical Weapons Convention Bulletin*, no 28 (June 1995), pp 1-3.
- ²⁸ Stanley Foundation, "Technology Access for the Developing World: Reconciling Global Regimes and National Security Mandates", online at <http://www.stanleyfoundation.org/programs/sns/issues02/index.html>
- ²⁹ Jean du Preez, "Ten years after: has the Chemical Weapons Convention met expectations?", presentation at the conference *Freeing the World of Chemical Weapons: The Chemical Weapons Convention Ten Years After Its Entry Into Force*, Stiftung Wissenschaft und Politik, Berlin, Germany, 26 April 2007.
- ³⁰ John Hart, "Economic and Technological Development under the Chemical Weapons Convention", Presentation at the Preparatory Workshop for the First Review Conference of the CWC, Chemical and Biological Arms Control Institute, Washington, D.C., 19 March 2003, p 6. The low percentage of formal denials is somewhat misleading because companies often discuss questionable chemical exports informally with the licensing authorities. Thus, an unknown number of exports are not submitted for licensing because of the high likelihood they will be denied, and this number is not reflected in the official statistics.
- ³¹ Seevaratnam, "The Australia Group: origins, accomplishments, and challenges", p 409.
- ³² Daniel Feakes, "Transfer controls, chemical trade and the CWC" [unpublished paper, December 2002], p 21.
- ³³ United Kingdom, "The Role of Export Controls in the Implementation of the Chemical Weapons Convention", National Paper for the First CWC Review Conference, 29 April 2003 (RC-1/NAT.12), pp 3-4.
- ³⁴ Ibid., p 4.
- ³⁵ U.S. Customs and Border Protection, "CSI: Container Security Initiative", online at http://www.cbp.gov/xp/cgov/border_security/international_activities/csi/
- ³⁶ Green Customs Initiative, online at <http://greencustoms.org>
- ³⁷ Sharon Squassoni, "Proliferation Security Initiative (PSI)", *CRS Report for Congress*, updated 14 September 2006, pp 3-5.
- ³⁸ Gunnar Jeremias, "A Global Trade Monitoring Regime for Bioweapons Related Items", Occasional Paper, Research Group for Biological Arms Control, University of Hamburg, December 2006, p 1.
- ³⁹ For the ICCA's "responsible care" policies, see <http://www.responsiblecare.org>

Tabassi, continued from page 1

Thus, enforcement of the CWC is envisaged to be a horizontal exercise, carried out by each State Party in territory under its jurisdiction or control, or elsewhere in cooperation with another State Party having jurisdiction or control. Violations of CWC norms by State and non-State actors in any circumstances must be prevented by States Parties in their jurisdictions or places under their control.⁸ If violations occur, the State's obligations to enact penal legislation and to cooperate with other States Parties imply that the cases will be investigated and, if the evidence is sufficient, prosecuted and punished. The OPCW Conference of the States Parties may recommend collective measures to States Parties in cases where serious damage to the object and purpose of the CWC results from activities prohibited under the CWC.⁹ In cases of non-compliance of "particular gravity," the CWC provides

that the issue shall be brought to the United Nations General Assembly and Security Council.¹⁰

Enforcement by the International Criminal Court

Where does the ICC fit into that framework? The object and purpose of the ICC is to ensure that "the most serious crimes of concern to the international community as a whole" will be investigated and, if possible, prosecuted and punished. Such grave crimes threaten the peace, security and well-being of the world and the end to impunity for the perpetrators of such crimes contributes to their prevention. The Rome Statute recognises that it is the duty of each State to exercise its criminal jurisdiction over those responsible for international crimes and that effective prosecution is ensured by taking measures at the national level and by enhancing international cooperation. If that system of national enforcement fails and the facts meet certain criteria, the Rome Statute has established

the ICC and conferred it with jurisdiction over such crimes, as a complement to national criminal jurisdictions.

How does the “principle of complementarity” work? The ICC will have jurisdiction only when a State which has jurisdiction over the case is unwilling¹¹ or genuinely unable¹² to carry out the investigation or prosecution. Cases are inadmissible if: the case is being investigated or prosecuted by a State which has jurisdiction; or the State already investigated it and decided not to prosecute (unless the decision resulted from unwillingness or genuine inability to prosecute); or the person concerned has already been tried for the conduct; or the case is of insufficient gravity to justify further action by the ICC.¹³ In addition, certain other conditions must be met for the case to be admissible. The crime must have occurred after 1 July 2002 or after entry into force of the Rome Statute for the State Party concerned¹⁴ and must have been committed by a natural person¹⁵ on the territory of a State Party (or on board one of its vessels or aircraft) or by a national of a State Party. Furthermore, the ICC can only exercise jurisdiction over cases which have been referred to it by a State Party to the Rome Statute, or by the United Nations Security Council acting under Chapter VII of the Charter of the United Nations, or when the case is one in which the ICC Prosecutor, duly authorised by the Pre-Trial Chamber, has initiated an investigation *proprio motu* on the basis of information received on crimes within the jurisdiction of the court.¹⁶

What are the crimes within the jurisdiction of the court? The ICC has jurisdiction over four crimes: genocide, crimes against humanity, war crimes and aggression.¹⁷ The crime of chemical weapons **use** is explicitly provided for as follows:

“2. For the purpose of this Statute, “war crimes” means:

- (b) Other serious violations of the laws and customs applicable in **international armed conflict**, within the established framework of international law, namely, any of the following acts:
(xviii) **Employing asphyxiating, poisonous or other gases, and all analogous liquids, materials or devices...**”

[Emphasis added]

The definition of the chemical weapons crime as set forth in the Rome Statute contains significant limitations and echoes the ban as expressed in the 1925 Geneva Protocol.¹⁸ Under that definition, the ICC only has jurisdiction over cases involving the **use** of chemical weapons in **international armed conflict**, and based on the principle of complementarity. Cases involving the use of chemical weapons would not be prosecuted by the ICC if the act occurred in internal armed conflict (which most conflicts in the world today are) or was a terrorist act, unless the act was on such a scale that it can be deemed to fall within the scope of the crime of genocide or crimes against humanity as defined by the Rome Statute.¹⁹ The ICC does not have explicit jurisdiction over the crimes of developing, producing, otherwise acquiring, stockpiling, retaining or transferring a chemical weapon in any circumstances; engaging in military preparations to use a chemical weapon; assisting, encouraging or inducing in any way anyone to engage in any activity prohibited by the CWC. However the use of riot control agents as a method of warfare in international armed conflict arguably would fall within the

scope of ICC jurisdiction as a war crime.

What is the threshold that would have to be met for chemical weapons crimes to be considered genocide or crimes against humanity? Article 6 defines “genocide”²⁰ in the following terms:

“Article 6. Genocide. For the purpose of this Statute, “genocide” means any of the following acts committed with intent to destroy, in whole or in part, a national ethnical, racial or religious group, as such:

- (a) Killing members of the group;
- (b) Causing serious bodily or mental harm to members of the group;
- (c) Deliberately inflicting on the group conditions of life calculated to bring about its physical destruction in whole or in part;
- (d) Imposing measures intended to prevent births within the group;
- (e) Forcibly transferring children of the group to an other group.”

“Crimes against humanity” is defined by the Rome Statute Article 7 as follows (emphasis added)

“Article 7. Crimes against humanity.

1. For the purpose of this Statute, “crime against humanity” means any of the following acts when committed as part of a **widespread or systematic attack** directed against any **civilian population**, with **knowledge** of the attack:
 - (a) Murder;
 - (b) Extermination; ...
 - (h) Persecution against any identifiable group or collectivity on political, racial, national, ethnic, cultural, religious, gender ... or other grounds that are universally recognised as impermissible under international law, in connection with any act referred to in this paragraph or any crime within the jurisdiction of the Court; ...
 - (k) Other inhumane acts of a similar character intentionally causing great suffering, or serious injury to body or to mental or physical health.
2. For the purpose of paragraph 1:
 - (a) “Attack directed against any civilian population” means a course of conduct involving the multiple commission of acts referred to in paragraph 1 against any civilian population, pursuant to or in furtherance of a State or organisational policy to commit such attack;
 - (b) “Extermination” includes the intentional infliction of conditions of life, inter alia the deprivation of access to food and medicine, calculated to bring about the destruction of part of the population ...”

Elements of the crime, applicable law and principles

Under the principle of *nullum crimen sine lege*, persons can be held criminally responsible under the Rome Statute only if the conduct in question constituted, at the time it took place, a crime within the jurisdiction of the ICC.²¹ A person, regardless of his/her official capacity,²² can be held criminally responsible if s/he: (a) committed or attempted to commit the crime as an individual, jointly with another or through an-

other person, regardless of whether that other person is criminally responsible; (b) ordered, solicited, or induced the crime whether it occurs or is only attempted; (c) aided, abetted, or otherwise assisted in the crime or its attempt; or (d) in any other way intentionally and knowingly contributed to the commission or attempted commission of the crime by a group of persons acting with a common purpose. Persons under the age of 18 are excluded from jurisdiction.²³ Crimes within the jurisdiction of the ICC are not subject to any statute of limitations.²⁴

Defences which can be argued as grounds for excluding criminal responsibility include: mental incapacity; intoxication; self-defence; duress; mistake of fact or law negating the requisite mental element; and superior orders, under certain conditions.²⁵

What are the elements of crimes²⁶ that may be applicable in a case involving chemical weapons? The act must have been committed or attempted by the perpetrator with intent and knowledge. As a war crime, the gas, substance or device must have been such that it caused death or serious damage to health in the ordinary course of events through its asphyxiating or toxic properties. The perpetrator must have been aware of factual circumstances that established the existence of an armed conflict and it must at least have been associated with an international one, whether or not s/he was aware of that.²⁷ For the crime of genocide, the perpetrator must have intended to destroy, in whole or in part, the national, ethnical, racial or religious group as such of the victim(s) and the conduct must have taken place in the context of a manifest pattern of similar conduct directed against that group or was conduct that could itself effect such destruction.²⁸ For crimes against humanity, the conduct must have been, and the perpetrator must have known or intended that the conduct be, part of a widespread or systematic attack directed against a civilian population. The perpetrator need not have knowledge of all the details of the plan or policy and the attack need not constitute a military attack. In the case of the crime against humanity of extermination, the conduct must have constituted or taken place as part of a mass killing of members of a civilian population.²⁹

As applicable law the ICC will apply in the first place the Rome Statute, the Elements of Crimes and its rules of Procedure and Evidence. Secondly it will apply, where appropriate, applicable treaties and the principles and rules of international law, including the established principles of the international law of armed conflict. Failing that, it will apply general principles of law derived by the Court from national laws of legal systems of the world including, as appropriate, the national laws of States that would normally exercise jurisdiction over the crime. Thus it is foreseeable that in a case involving chemical weapons, the ICC could turn to the provisions of the CWC or the related national implementing legislation adopted by CWC States Parties.³⁰

Cooperation between the OPCW and the ICC

The Rome Statute explicitly makes provision for the ICC to call upon intergovernmental organisations for assistance with a case. Whether a situation will arise that would ever make the OPCW one of those organisations remains to be seen, nevertheless the Statute's explicit scenarios are the following. In cases where the ICC Prosecutor is considering initiating an investigation *proprio motu* on the basis of information

received and is analysing that information, s/he may seek additional information from, inter alia, intergovernmental organisations.³¹

If such a case concerns use of chemical weapons and the OPCW has, pursuant to the Convention, conducted an investigation, questions arise: would the final inspection report and/or results of any sample analysis be provided by the OPCW to the ICC for use as evidence in an eventual criminal trial? Would OPCW inspectors be allowed to testify? Such a scenario is not foreseen by the Convention. The Convention establishes the obligation of States Parties to cooperate with each other³² and with the OPCW.³³ It also establishes the obligation of the Executive Council to cooperate with the National Authority of each State Party.³⁴ There is no provision regarding cooperation by the Technical Secretariat or by the OPCW itself. Presumably the matter would be brought to the OPCW policy-making organs for decision. It is interesting to note that when the Prosecutor of the International Criminal Tribunal for the former Yugoslavia (ICTY) requested documents from the International Committee of the Red Cross (ICRC) as well as testimony by a former staff member which the Prosecutor considered important to establish the guilt of an accused, the ICRC refused and the ICTY Trial Chamber agreed. The ICRC argued that in order to carry out its mandate, the ICRC needed to have access to camps, prisons and places of detention, and in order to perform these functions it must have a relationship of trust and confidence with governments or the warring parties. It further argued that admission of the information would have a prejudicial effect on the safety of its delegates and staff in the field as well as the safety of the victims. In its decision, the Trial Chamber recognised the ICRC's special status and mandate under international law. It considered whether under customary or conventional international law there is recognition that the ICRC has a confidentiality interest such that it is entitled to non-disclosure of the former employee's testimony and whether the ICRC's confidentiality interest should be balanced against the interests of justice. It decided that the ICRC does have such a confidentiality interest under customary international law and thus as a matter of law it serves to bar the Trial Chamber from admitting the information.³⁵ Particularly in an investigation of alleged use, the OPCW could have concerns similar to those of the ICRC.

During an investigation, the ICC Prosecutor may seek the cooperation of an intergovernmental organisation in accordance with its respective competence and/or mandate and s/he may enter into arrangements or agreements, not inconsistent with the Rome Statute, as may be necessary to facilitate the cooperation of the intergovernmental organisation. The Prosecutor can agree not to disclose, at any stage of the proceedings, documents or information obtained on the condition of confidentiality and solely for the purpose of generating new evidence, unless the provider consents, and take the necessary measures to ensure such confidentiality.³⁶

For its part, such an agreement would be considered and approved by the OPCW Executive Council in accordance with the CWC and Conference decision.³⁷

National implementation and cooperation by States with the ICC

The Rome Statute does not explicitly require States Parties to create domestic offences of the ICC core crimes in their

domestic legal orders. Nevertheless, a reading of the preamble (“... it is the duty of every State to exercise its criminal jurisdiction over those responsible for international crimes”) and contemplation of the principle of complementarity and the system by which the ICC seizes jurisdiction (only when States are unwilling or genuinely unable to do so) implies that it is **presumed** that these types of conduct (“the most serious crimes of concern to the international community”) are already defined as crimes in all jurisdictions. If not, the ICC stands ready to step in. Even if a State has not incorporated the crime of “genocide” or “crimes against humanity” *per se* in its national legislation, in all likelihood it would be able to indict the perpetrator for other ordinary crimes (multiple charges of murder, for example) and it could be anticipated that the ICC in that event might be satisfied with seeing that justice is being done. However, States which wish to ensure that they would be able to exercise jurisdiction in all scenarios for all crimes within the jurisdiction of the ICC are reviewing their existing legislation to ensure that they will be in a position to do so (by incorporating the core crimes as crimes of universal jurisdiction, for example). In any event, a State with no implementing legislation for the Rome Statute would probably encounter obstacles preventing it from fully cooperating with the Court’s investigation and prosecution of a case. For example, if the conduct is not a crime in the national jurisdiction, the State ordinarily would not be able to arrest and surrender a suspect to the custody of the ICC. For this reason the Rome Statute does require States Parties to ensure that there are procedures under their national law for all the forms of cooperation and judicial assistance specified by the Statute.³⁸

Part 9 of the Rome Statute details the obligations of States Parties with respect to international cooperation and judicial assistance. States Parties to the Rome Statute are under the general obligation to cooperate with the Court in its investigation and prosecution of crimes. For its part, the Court is entitled to request the assistance it needs from States Parties and the Rome Statute does specify that States are required to extend its criminal laws to cover offences against the ICC’s administration of justice (for example, giving false testimony to the ICC should be a domestic offence).³⁹

In respect of documents and information received, the ICC is under the obligation to ensure confidentiality, except as required for the investigation and proceedings described in its request to the State Party(s) concerned. The requested State Party can, when necessary, transmit documents or information to the ICC Prosecutor on a confidential basis.⁴⁰

In respect of third-party information or documents, if the Court’s request to a State concerns information, property or persons which are subject to the control of a third State or an international organisation by virtue of an international agreement, the requested State will inform the Court and the Court will direct its request to the third State or international organisation.⁴¹ If a State Party to the Rome Statute is requested to provide a document or information which was disclosed to it in confidence by a State or intergovernmental organisation, it must seek the consent of the originator to disclose the document or information. If consent is refused, the requested State can inform the Court that it is unable to provide the document or information because of a pre-existing obligation of confidentiality to the originator.⁴²

During trial, the Rome Statute explicitly provides for the

protection of national security information. Article 72 applies in any case where the disclosure of information or documents of a State would, in the opinion of the State, prejudice its national security interests. It also applies in any case when a person has been requested to give information or evidence and has refused to do so, or has referred the matter to a State, on the ground that disclosure would prejudice the State’s national security interests. If a State learns that State information or documents are being, or are likely to be, disclosed at any stage of the proceedings, it has the right to intervene to resolve the issue. The State must take reasonable steps to cooperate by, for example, obtaining the information or evidence from a different source or in a different form. When there are no means or conditions under which the information or documents can be provided or disclosed without prejudice to its national security interests, the State can notify the ICC or the Prosecutor of its specific reasons and the Court may conduct hearings *in camera* or *ex parte* and make inference in the trial as to the existence or non-existence of a fact, for example.⁴³

Conclusion

The Rome Statute of the ICC explicitly provides that the ICC has jurisdiction over the use of chemical weapons in international armed conflict as a war crime. If conduct involving chemical weapons occurs on a scale large enough to meet the definitions of genocide or crime against humanity under the Rome Statute, the Court could also have jurisdiction. Since the ICC’s jurisdiction is structured to be complementary to national jurisdictions, the Court will normally only have jurisdiction when the State which would ordinarily exercise jurisdiction over the case is unwilling or genuinely unable to do so. Furthermore, the crime must have occurred in the jurisdiction of a State Party to the Rome Statute or by one of its nationals and normally it must have occurred after the Statute entered into force for the State Party concerned. Certain other criteria for admissibility must also be met for the Court to seize jurisdiction.

If the ICC is investigating or prosecuting a case involving chemical weapons, it could conceivably turn to the OPCW for documents, information, or expert advice within the OPCW’s mandate. The ICC has the authority to conclude agreements or arrangements with the OPCW for this purpose, if the OPCW agrees to do so. If the requested documents or information were provided by the OPCW on a confidential basis, the ICC is required by the Rome Statute to take the measures necessary to ensure confidentiality.

The OPCW, as an autonomous international organisation, of course has the discretion to cooperate or not with an ICC request. It could be envisaged (particularly if the case is one which was referred to the ICC by the United Nations Security Council) that the OPCW would be encouraged by the UN to cooperate, either pursuant to the Relationship Agreement between the United Nations and the OPCW⁴⁴ or pursuant to a resolution, as was addressed generally to all international organisations in respect of cooperation with the ICTY.⁴⁵ Presumably the OPCW would wish to see any conduct related to the use of chemical weapons prosecuted and punished and would wish to cooperate. It could, however, also be envisaged that the primary factor in deciding whether to cooperate would be whether such cooperation could in any way compromise the ability of the OPCW to perform its

mandate of verifying compliance with the CWC. In certain circumstances, the concerns the ICRC had which precluded its cooperation with the ICTY could arise for the OPCW. If the case concerns alleged use of chemical weapons in the territory of a State not party to the CWC, it could happen that the OPCW would be asked by the United Nations Secretary-General, under Part XI, paragraph 27, of the Verification Annex to the CWC, to cooperate with the UN in an investigation of alleged use of chemical weapons. In that event, the OPCW Director-General “shall” cooperate. Whether the information obtained in the investigation would be provided by the United Nations to the ICC for use as evidence in an eventual prosecution is another debatable question, particularly if the case had been referred to the ICC Prosecutor by the United Nations itself, through the Security Council.

States Parties to the Rome Statute are under the general obligation to cooperate with the ICC. However, if requested documents or information were received by the State Party on a confidential basis from a third State or from the OPCW, it can refuse to provide them if the third State or the OPCW refuse to consent to their disclosure. It can also refer the Court to the third State or the OPCW. States can also provide documents or information to the Court on a confidential basis which the Court is under the obligation to protect. Furthermore, a State can intervene to prevent the disclosure of documents or information that affect its national security interests.

From these provisions it is clear that the two treaties are adequate to cover the sensitivities that conceivably could arise in an ICC investigation or prosecution of a crime involving chemical weapons, in which the OPCW or one of its members would be requested to cooperate. Any agreement or arrangement between the OPCW and the ICC for that purpose would of course be decided upon by the OPCW Executive Council and Conference of the States Parties, under Article VIII, subparagraph 34(a) of the Convention.

While in principle such cooperation could go forward since no obvious conflict is apparent from the texts of the CWC or the Rome Statute, it is equally obvious that in practice the lack of explicit language will leave considerable room for interpretation by the OPCW. The goals of the two institutions – (a) the complete elimination of chemical weapons by means of, inter alia, the universal penalisation of any conduct related to them and (b) the end to impunity for the crimes of serious concern to the international community, including the war crime of the use of chemical weapons in international armed conflict – would seem to converge. Ultimately the decision will be the practical one of whether cooperation could impact the OPCW’s ability in the future to carry out its mandate if information gathered during the course of an inspection or investigation could be provided as evidence in criminal proceedings outside the national jurisdiction as well as the political one of whether there is willingness to cooperate.

Notes

* Legal Officer, Provisional Technical Secretariat of the Preparatory Commission for the Comprehensive Nuclear-Test-Ban Treaty Organisation. The views expressed are the author’s own and cannot otherwise be attributed.

¹ Established on 1 July 2002 upon entry into force of the Rome Statute of the International Criminal Court, (“Rome Statute”). As of 1 May 2007, there are 104 parties to the Rome Statute.

The text, as corrected, is available at www.icc-cpi.int

² Organisation for the Prohibition of Chemical Weapons (“OPCW”), established on 29 April 1997 upon entry into force of the Convention on the Prohibition of the Development, Production, Stockpiling and Use of Chemical Weapons and on Their Destruction. As of 1 May 2007, there are 182 parties to the CWC. The text, as corrected and amended, is available at www.opcw.org.

³ Of the 104 States Parties to the Rome Statute, 102 are States Parties to the CWC. The following 80 CWC States Parties have NOT become party to the Rome Statute: Algeria, Armenia, Azerbaijan, Bahrain, Bangladesh, Belarus, Bhutan, Brunei Darussalam, Cameroon, Cape Verde, Chile, China, Cook Islands, Côte d’Ivoire, Cuba, Czech Republic, El Salvador, Equatorial Guinea, Eritrea, Ethiopia, Grenada, Guatemala, Haiti, Holy See, India, Indonesia, Iran (Islamic Republic of), Jamaica, Japan, Kazakhstan, Kiribati, Kuwait, Kyrgyzstan, Lao People’s Democratic Republic, Libyan Arab Jamahiriya, Madagascar, Malaysia, Maldives, Mauritania, Micronesia (Federated States of), Monaco, Morocco, Mozambique, Nepal, Nicaragua, Niue, Oman, Pakistan, Palau, Papua New Guinea, Philippines, Qatar, Republic of Moldova, Russian Federation, Rwanda, Saint Lucia, Sao Tome and Principe, Saudi Arabia, Seychelles, Singapore, Solomon Islands, Sri Lanka, Sudan, Suriname, Swaziland, Thailand, Togo, Tonga, Tunisia, Turkey, Turkmenistan, Tuvalu, Ukraine, United Arab Emirates, United States of America, Uzbekistan, Vanuatu, Viet Nam, Yemen, Zimbabwe.

⁴ CWC Article I.

⁵ CWC Articles I and IV, and Part IV(A) of the Verification Annex.

⁶ CWC Article VII(1).

⁷ CWC Article VII(2).

⁸ CWC Articles I, VI(2) and VII(1)(b), read together.

⁹ CWC Article XII(3).

¹⁰ CWC Article XII(4).

¹¹ Rome Statute Article 17(2) specifies the criteria for determining “unwillingness” as the following: the person is being shielded from criminal responsibility for crimes within the jurisdiction of the ICC; there has been an unjustified delay in proceedings which is inconsistent with an intent to bring the person to justice; the proceedings were not or are not being conducted independently or impartially, and they were or are being conducted in a manner which is inconsistent with an intent to bring the person to justice.

¹² Rome Statute Article 17(3) specifies the criteria for determining “inability” as the following: there is a total or substantial collapse or unavailability of a State’s national judicial system, the State is unable to obtain the accused or the necessary evidence and testimony or otherwise unable to carry out its proceedings.

¹³ Rome Statute Article 17.

¹⁴ Rome Statute Article 11.

¹⁵ Rome Statute Article 25(1).

¹⁶ Rome Statute Articles 13, 14 and 15.

¹⁷ Rome Statute Article 5. The ICC will only exercise jurisdiction over the crime of aggression once it has been defined by a Review Conference and the Rome Statute has been amended in accordance with Articles 121 and 123.

¹⁸ Protocol for the Prohibition of the Use in War of Asphyxiating, Poisonous or Other Gases, and of Bacteriological Methods of Warfare, XCIV LNTS (1929) no. 2138. The Geneva Protocol has long been considered to constitute customary international law, binding upon all States, whether they are party to it or not. See further, L. Tabassi, “Impact of the CWC: Progressive

- Development of Customary International Law and Evolution of the Customary International Norm,” *The CBW Conventions Bulletin*, issue no. 63 (March 2004) 1-7.
- ¹⁹ See L Tabassi and E van der Borgh, “Chemical Warfare as Genocide and Crimes Against Humanity,” *CBW Conventions Bulletin*, (December 2006) pp. 36-44.
- ²⁰ Furthermore, under Article 25(3)(e), a person committing genocide must have directly and publicly incited others to commit genocide.
- ²¹ Rome Statute Article 22.
- ²² Rome Statute Article 27.
- ²³ Rome Statute Article 26.
- ²⁴ Rome Statute Article 29.
- ²⁵ Rome Statute Articles 31-33.
- ²⁶ Elements of Crimes, adopted by the Assembly of States Parties at its First Session, 3-10 September 2002, document ICC-ASP/1/3.
- ²⁷ Elements of Crimes, pp. 125, 139.
- ²⁸ Elements of Crime, pp. 112-113.
- ²⁹ Elements of Crime, pp. 116-117.
- ³⁰ Rome Statute Articles 21.
- ³¹ Rome Statute Article 15.
- ³² CWC, Article VII(2).
- ³³ CWC, Article VII(7).
- ³⁴ CWC, Article VIII(31).
- ³⁵ International Criminal Tribunal for the former Yugoslavia, *Prosecutor v Simic*, Decision on the Prosecution Motion under Rule 73 for a Ruling Concerning the Testimony of a Witness, 27 July 1999, available at www.un.org/icty.
- ³⁶ Rome Statute Article 54(3).
- ³⁷ CWC, Article VII(34)(a) and Conference decision C-VI/DEC.15, dated 17 May 2001.
- ³⁸ Rome Statute Article 88.
- ³⁹ Rome Statute Article 70(4)(a).
- ⁴⁰ Rome Statute Article 93(8)(b).
- ⁴¹ Rome Statute Article 93(9)(b).
- ⁴² Rome Statute, Article 73.
- ⁴³ Rome Statute Article 72.
- ⁴⁴ OPCW document C-VI/DEC.5, dated 17 May 2001.
- ⁴⁵ United Nations Security Council resolution 827, adopted on 25 May 1993 under Chapter VII of the United Nations Charter.

OPCW PrepCom History Project: Progress

Ian Kenyon

In *Bulletin 59* of March 2003, under the title “Chrysalis: How the CWC produced OPCW”, I described how a team of three of us at HSP –Julian Perry Robinson, Daniel Feakes and I, planned to start work on the history of the Preparatory Commission for the Organisation for the Prohibition of Chemical Weapons. First we needed to collect documents and the personal recollections of those involved. This phase culminated in witness seminars in February 1995 in The Hague. The first of these, spread over two days and held in the OPCW building, brought together former members of the Provisional Technical Secretariat and of national delegations to the PrepCom from as far away as Australia, Japan and the United States. (Travel costs were covered from grants to the project from the Governments of the Netherlands and the United Kingdom). The second, lasting a morning, was held in the Ministry for Foreign Affairs and brought together officials of State and City who had been involved in the Netherlands’ bid to host OPCW and its implementation.

Following the seminars the Japanese Government offered a grant to the project on condition that a paper be produced for publication by the Japan Institute of International Affairs. We chose the title *The OPCW Preparatory Commission: Preparing to Implement the CWC Industry Verification Regime* and Daniel Feakes wrote over 20,000 words, his drafts being reviewed and commented by several former PTS members. Meanwhile, prompted by Maarten Lak, the Netherlands Permanent Representative to OPCW, we started work on a full history of the PrepCom with a view to completing it in time for the tenth anniversary of the entry into force of the Chemical Weapons Convention and the birth of OPCW. The offer of an additional grant from the Netherlands Government, including a proposal to purchase 500 copies of the finished publication for distribution as

part of the tenth anniversary celebrations, spurred us on. TMC Asser Press offered to publish the book and gave us a deadline of the end of January 2007 for delivery of the manuscript by the end of April.

To produce the text we started with Daniel’s text for Japan on the industrial aspects which provided the basis for the chapter on Article VI of the Convention. Ron Manley agreed to write the chapters on disarmament, Articles III, IV and V, and on inspection and the recruitment of inspectors. Lisa Tabassi wrote on Article VII and national implementation and with Johan Rautenbach on legal aspects of the Preparatory Commission. Hassan Mashhadi and Sergei Kisselev helped me with chapters on Articles X and XI respectively. Paul Ryan wrote about the construction of the OPCW building. Ralf Trapp wrote on Challenge Inspection and on the experience of OPCW in its first ten years. I wrote a piece on the history of the chemical weapons problem and on the practical aspects of setting up and staffing the PTS and the TS. Daniel and I together wrote about the successful campaign to bring OPCW to The Hague. We then sent the text in whole or in part for comment and improvement to Sergey Batsanov, Don Clagett, John Makhubalo, Bob Mathews and Julian Perry Robinson. Richard Guthrie proof read the whole for us including checking all the footnotes Our heartfelt thanks go to the whole team for helping us produce a far better book than we could have achieved alone.

Ian Kenyon, and Daniel Feakes (eds). *The Creation of the Organisation for the Prohibition of Chemical Weapons: A Case Study in the Birth of an Intergovernmental Organisation*, The Hague: T.M.C. Asser Press, 2007, is distributed by Cambridge University Press.

What follows is taken from issue 75 of the Harvard Sussex Program CBW Chronicle, which provides a fuller coverage of events during the period under report here, and also identifies the sources of information used for each record. All such sources are held in hard copy in the Sussex Harvard Information Bank, which is open to visitors by prior arrangement. For access to the Chronicle, or to the electronic CBW Events Database compiled from it, please apply to Julian Perry Robinson.

1-2 November In Moscow, the eighth [see 1-2 Nov 05] annual Green Cross/Global Green national dialogue forum on implementation of the CWC takes place with about 150 participants from ten countries. The event brings together representatives of regions where chemical weapons are stockpiled, federal ministries and agencies responsible for the implementation of the Russian chemdemil programme, countries providing assistance to the programme, the OPCW, Russian foreign and non-governmental organizations, academia, and mass media. Participants discuss the progress of Russia's chemdemil efforts, including the issues of funding, technological solutions, public support of the programme, as well as its ecological and safety aspects. On the subject of Russia's destruction of its chemical weapons, Valery Biryukov, of the Russian Foreign Ministry, says: "[W]e should and will fulfill our [2012 chemdemil] obligation at any cost." [See also 12 Jan and 3 Feb]

2 November In the UK, Lord Hutton gives an insight into the conclusions set out in his report on the death of Dr David Kelly [see 28 Jan 04] having considered it "appropriate" to respond to the media. Writing in the *Public Law* journal, Hutton says: "Many commentators were hoping and predicting that my report would severely damage the Government... I knew that if I delivered a report concluding that the Government had deliberately misled the country about the existence of weapons of mass destruction in Iraq and had acted towards Dr Kelly in a dishonourable and underhand way, I would be acclaimed in many sections of the media as a fearless and independent judge. I also knew that if I did not come to such findings it was probable that my report would be subjected to considerable criticism... However, in reality, if I had written such a report I would have been failing in one of the cardinal duties of a judge conducting an inquiry into a highly controversial matter which gives rise to intense public interest and debate. That duty is to decide fairly the relevant issues arising under the terms of reference, having regard to all the evidence, and not to be swayed by pressure from newspapers and commentators or from any other quarter... There was no evidence which would support a finding that the very senior figures in British Intelligence who gave evidence to the inquiry had taken part in a conspiracy with the Government to mislead the country by inserting intelligence in the dossier which was known or believed to be wrong... If all the evidence at my inquiry was fairly taken into account, there was no reasonable basis on which my conclusion that the Government did not know that the 45 minutes claim was wrong and had not ordered the dossier to be sexed up could be described as a whitewash... What was apparent in the criticisms of my report was not only their failure to take my terms of reference [i.e. investigating the reliability of the intelligence on which the UK went to war] into proper account but their failure to take into account and properly evaluate all the evidence... A judge conducting a public inquiry must always be alert to the possibility that witnesses may not give truthful evidence in relation to

particular matters. However some commentators take a somewhat different approach and on occasions appear to adopt an attitude of predetermined bias against certain witnesses and to proceed on the presumption that, because they are politicians and civil servants, their evidence is to be disbelieved unless its truth is established by irrefutable and independent evidence; but it would not be proper, nor would it be fair, for a judge to adopt such an approach.... The evidence of the Prime Minister was strong and was consistent with the surrounding circumstances." [See also 19 May]

3 November In Islamabad, there is a workshop on the role of industry in implementing the provisions of the CWC, organized by the Pakistani national authority. It aims to help representatives of Pakistan's chemical industry improve their understanding of the CWC and to find ways for increased cooperation with the Pakistani national authority so as to effectively implement the provisions of the CWC. Over thirty industry representatives participate in the event.

3 November In Washington DC, during the annual meeting of the Association for Intelligence Officers, Maureen McCarthy, the senior advisor for the Department of Homeland Security, says that the introduction of foot-and-mouth disease in the USA, whether intentional or accidental, would cost the agriculture economy "hundreds of billions" of dollars and could close some trade borders for "years" if deemed necessary by the authorities.

4-8 November In Tehran, the eighth annual course on the medical aspects of defence against chemical weapons is held at the International Medical Centre for Training and Treatment against Chemical Weapons. The course, which is jointly organized by the Iranian government and the OPCW, offers members of the medical profession detailed information on the medical aspects of defence against chemical weapons, e.g., recognizing chemical attacks, detection and monitoring, protection, contamination control, etc. Participants also gain insights from Iranian physicians who treated victims of mustard gas in the field in the 1980s, i.e. information on the pathology, signs and symptoms, diagnosis and treatment for exposures to blister, nerve, and other agents. In his address on the first day of the course Iranian Deputy Foreign Minister for Legal and International Affairs Abbas Araqchi says that Iran is against use of any kind of WMD and that it is ready to provide the world community with information about its experiences in the field.

5 November In Sydney, two Australian fishing organizations call on the government to remove drums filled with mustard gas, cyanide, arsenic and other toxic materials that were dumped off the coast of New South Wales following the Second World War, and the Korean and Vietnam wars. The Coastal Rights Association and the Narooma Ports Committee

say that some of the 44-gallon drums, which are increasingly being found in the nets of fishing trawlers, are currently leaking and will rupture if action is not taken. In a statement, Narooma Ports Committee chief Philip Creagh says: "What is likely to happen is there will be a massive fish kill in the immediate vicinity and obvious damage to the biodiversity on the sea floor."

5 November In Baghdad, the Iraq Tribunal finds former Iraqi President Saddam Hussein guilty of crimes against humanity and sentences him to death by hanging for the killing of 148 Shiites in Dujail in 1982 after he survived an assassination attempt there [see 1 Jul 04 and 21 Aug]. Two days later, Hussein returns to court for his ongoing trial relating to his role in the use of chemical weapons during Operation Anfal [see 21 Aug].

6-8 November In Seoul, there is a workshop for CWC national authorities in Asia on matters of relevance to the chemical industry. Attending the workshop, which is jointly organized by the South Korean government and the OPCW, are over thirty participants from fourteen CWC parties, i.e. Bangladesh, Cambodia, China, India, Indonesia, Iran, Japan, South Korea, Malaysia, Philippines, Singapore, Sri Lanka, United Arab Emirates and Viet Nam. One non-party, Myanmar, also attends. The workshop provides an opportunity for participants to share experience in topics such as the identification of declarable Article VI activities, discrepancies in reported transfers of scheduled chemicals, and sequential inspections conducted by the OPCW. There are also table-top exercises on identifying declarable Article VI activities and inspection procedures.

6-8 November In Kiev, there is a workshop for senior law enforcement officials, which is organized by Interpol under its programme on the prevention of bioterrorism. Police representatives from twenty-three countries address a range of issues including biohazards, laboratory security, bioterrorism identification, and the importance of legislation to combat bioterrorism. The workshop is part of the second phase of the programme; the first phase involved the identification of the lack of legislative support for the law enforcement community as a significant problem.

7 November In Moscow, Chief of the Russian Navy Vladimir Masorin and Head of the Turkish Navy Yener Karahanoglu have signed an agreement under which the Russian Navy will participate in Operation Black Sea Harmony – an international initiative aimed at preventing the threat of terrorism and weapons of mass destruction in the Black Sea – so reports ITAR-TASS news agency.

7 November In the UK, a British al-Qaeda operative who plotted attacks against the UK and the USA, using, amongst other things, chemical and biological agents, is sentenced to life imprisonment [see 12 Apr 05]. According to *The (London) Times*, the attacks plotted by Dhiren Barot included bombing major US financial institutions and the detonation of a radiological 'dirty bomb' in London. Following his arrest in August 2004, the police uncovered recipes for producing toxins such as ricin, botulinum and cyanide among hundreds of documents recovered in digital format. According to prosecutors, the attacks in London were "imminent" at the time Barot and seven other suspects were arrested. Barot will now be extradited to the USA to face four charges, including conspiracy to use weapons of mass destruction. Seven men alleged to be Barot's accomplices are scheduled to stand trial on identical charges in April next year.

7 November In London, officials and experts from Bahrain, Egypt, Kuwait, Saudi Arabia, Iran, Israel and the United Nations are among those participating in a meeting sponsored

by the School of Oriental and African Studies on ways of establishing a WMD-free zone in the Middle East.

7 November Canadian veterans claiming to have been exposed to chemical and biological warfare experiments during their service file a class-action against the Attorney-General and the Minister of National Defence in courts in Ottawa, Regina, and British Columbia. Tony Merchant, legal representative for the claimants, says that further actions will be filed in Quebec, Manitoba and Atlantic. The Canadian Press reports that, according to the statement filed in Regina, the claimants are retired military personnel who served at CFB Suffield, CFB Wainwright, or the Sarcee Training Camp in Alberta between 1941 and 1976, or served at CFB Petawawa, Ontario, or the Chemical Warfare Laboratory in Ottawa between 1940 and 1945. The lawsuit claims that, due to exposure to chemical or biological warfare compounds, the veterans experienced premature death, illness, mental illness, loss of companionship, reduced income and diminished quality of life. The Canadian Press quotes Merchant as saying he has been in contact with roughly 650 individuals across Canada in connection with the lawsuit. However, he says the total number of people that could be part of the class action could be as many as 4,400. Two years ago, the government announced a CA\$50-million compensation programme under which each veteran who was subjected to testing would receive CA\$24,000 [see 19 Feb 04]. The offer applied to 2,000 of the 3,500 veterans who were subjected to experiments undertaken in secret at Suffield and at the Chemical Warfare Laboratory.

7 November The US Department of the Navy releases an 'Instruction' on the 'Human Research Protection Program', establishing policy and assigning responsibility for the protection of human subjects in research conducted by, within, or for the Department of the Navy. It applies, *inter alia*, to "all biomedical and social-behavioral research involving human subjects conducted by Navy and Marine Corps activities or personnel". It states: "Research involving testing of chemical or biological agents shall comply with [the ethical principles outlined in the Belmont Report, *Ethical Principles and Guidelines for the Protection of Human Subjects of Research*, i.e. respect for persons, education and training, informed consent, command responsibility, etc]."

7-9 November In Moscow, there is an international workshop on *Enhancing Biosecurity & Biosafety: Developing National and International Strategies*, which builds on an earlier workshop for experts from the G8 countries on *Enhancing Biosafety and Biosecurity: An Agenda for Global Action* [see 18-19 Apr]. Participants from ten countries – which include Russia, Canada, Germany and Japan – agree to establish an International Working Expert Group on Biological Security and Defence, one of the tasks of which will be to increase awareness about the importance of biosecurity and defence. The event is jointly organized by the I.M. Sechenov Moscow Medical Academy; the International Council for the Life Sciences; the Global Partnership Programme of the Ministry of Foreign Affairs and International Trade, Canada; the Non-Commercial Partnership Centre of New Medical Technologies 'TEMP', Moscow; and the International Science and Technology Centre, Moscow.

7-10 November At OPCW headquarters, the Executive Council convenes for its forty-seventh [see 4-7 Jul] session under the chairmanship of Ambassador Hlengiwe Buhle Mkhize of South Africa.

The Council approves the agreed detailed plan for verification of the destruction of chemical weapons at a chemical weapons destruction facility (CWDF) in India, having considered the issue at previous sessions. It approves amendments to the agreed detailed plan for verification of the destruction of chemical

weapons at the Pine Bluff chemdemil facility, USA.

Having considered the issue at its previous session, the Council approves the combined plan for the destruction and verification of the HD (distilled mustard) production, distillation, and fill facility at Aberdeen Proving Ground, USA.

The Council approves a recommendation for consideration by the Conference at its eleventh session of a request by Albania for extensions of the intermediate deadlines for the destruction of its Category 1 chemical weapons stockpiles.

The Council approves a facility agreement with the USA regarding onsite inspections at the HD production, distillation, and fill facility at Aberdeen Proving Ground. It approves a facility agreement with India regarding on-site inspections at one of its CWDF. It also approves amendments to the facility agreement regarding on-site inspections at the Pine Bluff chemdemil facility, USA and to the agreed detailed plan for verification of the facility.

The Council notes the report submitted by Director-General Rogelio Pflirter on the status of implementation by parties of their Article VII obligations and approves a decision containing, *inter alia*, a recommendation to the Conference on the matter.

The Council considers the annual report on the implementation of the universality action plan covering the period 11 November 2005 to 25 September 2006.

The Council approves a decision recommending that the Conference at its eleventh session establish a Committee on Relations with the host country.

The Council concludes an agreement on the privileges and immunities of the OPCW between the OPCW and Burkina Faso and between the OPCW and Uruguay.

8 November In Vienna, the Forum for Security Co-operation of the Organization for Security and Co-operation in Europe (OSCE) holds a workshop on the implementation of UN Security Council resolution 1540. Among the goals of the workshop is to identify best practices, and to find ways to improve national implementation of the resolution including the development of national implementation plans.

8 November In Geneva, over fifty experts, diplomats and representatives of international organizations convene at the Palais des Nations for a conference on global biosecurity and biosafety issues. The purpose of the conference is to raise issues and recommendations regarding the prevention of, and response to, outbreaks of disease globally and to strengthen the existing international ban on biological weapons. The conference is organized by Green Cross International and three of its national affiliates – Global Green USA, Green Cross Switzerland and Green Cross Russia – and hosted by the Director of the Geneva branch of the UN Department for Disarmament Affairs, Tim Caughley. The President-designate of the BWC Sixth Review Conference, Ambassador Masood Khan, makes the keynote speech.

8 November In Hoekwil, South Africa, Chandré Gould [see 31 Mar 03], the co-author of *Secrets and Lies: Wouter Basson and South Africa's Chemical and Biological Warfare Programme* is hospitalized after being knifed in front of her café by three youths during an attempted robbery.

9 November In Geneva, there is a seminar organized by the Geneva Forum at the Palais des Nations. The event provides the backdrop for the launch of a *Briefing Book for the BWC Sixth Review Conference*, which has been compiled by The British American Security Information Council (BASIC), the Harvard Sussex Program (HSP) and the Verification Research, Training and Information Centre (VERTIC).

9 November At Queen Mary's College London, during a rare public speech, Director-General of the Security Service

(MI5) Dame Eliza Manningham-Buller speaks on 'The International terrorist Threat to the UK'. She says: "my officers and the police are working to contend with some 200 groupings or networks, totalling over 1600 identified individuals (and there will be many we don't know) who are actively engaged in plotting, or facilitating, terrorist acts here and overseas. [...] What we see at the extreme end of the spectrum are resilient networks, some directed from Al-Qaida in Pakistan, some more loosely inspired by it, planning attacks including mass casualty suicide attacks in the UK. Today we see the use of home-made improvised explosive devices; tomorrow's threat may include the use of chemicals, bacteriological agents, radioactive materials and even nuclear technology." She also says "we are aware of [nearly 30] plots to kill people and to damage our economy".

Two days later, an unidentified "senior British diplomat" in London is widely quoted as saying that Islamic extremists, including members of Al-Qaida, have tried to acquire chemical or radiological weapons to use in attacks against Britain and other Western targets, adding that such an attack would most likely be mounted with crude technology and cause mass panic rather than mass casualties. The UK Foreign Office has evidence, the diplomat reportedly asserts, of efforts by the terror groups to purchase chemical, biological, radiological and nuclear materials for use in attacks. "We know the aspiration is there, we know the efforts to get the technology are there."

There is also press-reporting that the UK Home Office has instituted a Police National CBRN Operational Response Programme in which several thousand police officers are being trained in CBRN readiness, with establishments in Edinburgh and Ryton near Coventry.

10 November In Ternovka, Russia, a ceremony marks the opening of a medical centre for residents living in the vicinity of where the Penza chemdemil facility [see 20 Sep 05] is to be constructed, so reports ITAR-TASS news agency.

10 November In Cairo, the Pugwash Council adopts a series of recommendations for the BWC Sixth Review Conference, which are subsequently presented to the Conference two weeks later by the Director of the Pugwash Office in Geneva, Sergey Batsanov.

10 November In the USA, the Ford Foundation announces that it is to offer \$2.2 million in grants to "support research to help identify [Agent Orange] dioxin 'hot spots', pilot projects to develop new clean-up technologies, and survey research and public health programmes". The grants will be made available for research aimed at helping Vietnamese victims of the spraying by US forces of Agent Orange during the Vietnam War. The Foundation, alongside the US Environmental Protection Agency, is supporting the United Nations Development Programme in setting up a \$60 million trust fund for clean-up of dioxin hotspots and for other aid to affected Vietnamese villages. Meanwhile the US Defense Department has just terminated the Air Force health study that, for the past 20 years, has been examining US veterans who had been exposed to Agent Orange and other herbicides during those Vietnam-War operations. The US Congress has directed the Institute of Medicine (IoM) to take charge of the immense quantities of data and serial biologic samples collected during this 'Ranch Hand Study'. The IoM is preparing to make this unique human-exposure data-base available for study by 2008.

11 November In London, a former officer of the Russian Federal Security Service (FSB) is admitted to hospital with signs of "toxin poisoning", so reports the Russian Daily *Kommersant*. Alexander Litvinenko says he was poisoned during his meeting with an Italian acquaintance, Mario Scaramella, ten

days previously at a restaurant in London. Scaramella gave Litvinenko a four-page document in English relating to the recent murder of Russian journalist Anna Politkovskaya [see 7 Oct]. Litvinenko says the document spelled out names of some FSB officers and a former FSB colonel.

Nearly two weeks later, Litvinenko dies in hospital after a rapid deterioration of his condition. BBC News Online reports the presence of a “major dose” of radioactive polonium-210 in his body. Speaking at a news conference, Professor Pat Troop of the Health Protection Agency says that Litvinenko would have to have eaten or inhaled, or else been given the dose of polonium-210 through a wound. She says that a death of this sort is an “unprecedented event in the UK”. In a statement dictated before he died, Litvinenko accused Russian President Vladimir Putin of involvement in his death. Experts had previously expressed differing opinions over substances that could have caused his death. Meanwhile Putin’s spokesman Dmitry Peskov reiterates the Kremlin’s earlier dismissal of allegations of involvement in the poisoning as “sheer nonsense”. Initial reports that he was given the heavy metal thallium gave way to other theories including radiation poisoning. According to the BBC, the government’s civil contingencies committee Cobra has met to discuss the case.

Ten weeks later, *The (London) Guardian* quotes unidentified UK government officials as saying that the government will shortly demand the extradition of Alexander Lugovoi, a former bodyguard with the KGB, though details of the alleged evidence against him remain unclear. Lugovoi, who has repeatedly denied any involvement in the murder, says he is unaware that the UK is planning to seek his extradition. Lugovoi met Litvinenko at the Millennium Hotel in Grosvenor Square, London, on the night Litvinenko was poisoned. He then, according to *The Guardian*, appeared to leave a trail of radioactive polonium-210 at a number of offices and hotels around London as well as on board an aircraft in which he travelled. Meanwhile, Sky News reports that the police have concluded that Litvinenko ingested the agent after drinking a cup of tea at the hotel during the meeting with Lugovoi.

13 November In Denmark, the trial commences of three journalists of the *Berlingske Tidende* who are charged with endangering national security by publishing extracts of classified intelligence reports on alleged Iraqi WMD programmes [see 26 Apr]. In February and March 2004, Michael Bjerre and Jesper Larsen wrote a series of articles based on leaked reports from the Danish Defence Intelligence Service. The reports said there was no evidence that Iraq had WMD during the rule of Saddam Hussein. The third defendant is Niels Lunde, the paper’s editor-in-chief. All three face fines or up to two years imprisonment. Former intelligence officer Frank Grevil was convicted last year of leaking the documents to the reporters, and sentenced to four months imprisonment [see 26 Sep 05]. During his trial, he claimed he was acting in the public interest.

Three weeks later, the three are acquitted. Judge Peter Lind Larsen says the “considerable public interest” outweighed the government’s fears for its intelligence operations.

13 November At OPCW headquarters, the third [see 29 Sep] meeting of the open-ended working group for the Second Review Conference of the CWC takes place. Matters discussed include the importance of chemdemil within the applicable deadlines, the importance of achieving universal adherence to and effective implementation of the Convention, and the role of the CWC in responding to the threat of international terrorism.

13 November In Edinburgh, international bioterrorism experts convene to discuss ways of preventing terrorists

misusing biological and medical research. The meeting aims to identify potential threats with a view to taking preventive action based on a framework of new international standards in biosecurity. It is organized by the ESRC Genomics Policy and Research Forum.

13-17 November In Spiez, Switzerland, the tenth [see 14-18 Nov 05] emergency field-laboratory training course (SEF-LAB X) takes place at the NBC Training Centre, further to an offer made by Switzerland under Article X of the CWC. The course is organized jointly by the Swiss government and the OPCW and aims to assist CWC parties in establishing the capacity to deal with the civilian populations in the event of an attack involving chemical weapons. The course involves laboratory specialists from the Swiss armed forces training the chief instructors from the parties concerned in the detection and analysis of Schedule 1 chemicals.

16 November In Strasbourg, the European Parliament adopts a resolution on the BWC, cluster bombs and conventional arms. With regard to the BWC, it states: “The European Parliament [...]”

“Stresses that the objective of the European Union should be to build on the success of the BTWC regime, to further strengthen the BTWC and to promote a successful outcome to the Sixth Review Conference.

“Welcomes the Council and Commission’s continuous diplomatic action to keep alive international efforts to strengthen the BTWC and recognises the EU’s role in promoting the exploration of voluntary non-binding inspections as ‘confidence-building measures’ and the strengthening of national legislation in the run-up to the Review Conference.

“Attaches, therefore, great importance to a thorough and full review of the operation of the BTWC in order to identify, discuss and agree on the measures to be taken to further strengthen the Convention.

“Calls on the Council and Member States to promote the accession of all States to the BTWC, including by calling on all States not party thereto to accede to the BTWC without further delay and working towards a declaration that the ban on biological and toxin weapons is a universally binding rule of international law.

“Encourages the EU, therefore, to take up this issue in the transatlantic fora, in particular NATO, and to persuade the US administration to move away from its unilateral point of view and to contribute to the relaunch and enhancement of the multilateral framework.

“Calls on the Council and Commission to promote full compliance with the obligations under the BTWC and, where necessary, the strengthening of national implementation measures, including penal legislation and control over pathogenic micro-organisms and toxins in the framework of the BTWC.

“Calls on the Council and Member States to contribute to the improvement of the mechanisms for verifying compliance by the States Parties by promoting efforts to enhance transparency through increased exchange of information among States Parties, including identifying measures to assess and enhance the country coverage and the usefulness of the Confidence Building Measures mechanism.

“Calls on the Council and Member States to promote compliance with obligations under UN Security Council Resolution 1540 [see 28 Apr 04], in particular to eliminate the risk of biological or toxin weapons being acquired or used for terrorist purposes, including possible terrorist access to materials, equipment and knowledge that could be used in the development and production of biological and toxin weapons.

“Calls on the Council and Member States to promote consideration of, and decisions on further action on, the work

undertaken to date under the intersessional programme during the period 2003 to 2005 and the efforts to discuss and promote common understanding and effective action in particular on: enhancing international capabilities for responding to, investigating and mitigating the effects of alleged use of biological or toxin weapons or suspicious outbreaks of disease; strengthening and broadening national and international institutional efforts and existing mechanisms for the surveillance, detection, diagnosis and combating of infectious diseases affecting humans, animals and plants; the content, promulgation and adoption of codes of conduct for scientists in the field relevant to the BTWC in order to raise awareness of the BTWC and to help relevant actors to comply with their legal, regulatory and professional obligations and ethical principles.

“Calls on the Council and Member States to support a further intersessional work programme during the period between the Sixth and Seventh Review Conferences, to identify specific areas and procedures for further progress under this work programme.

“Calls upon all Member States, the Council and the Commission to work hard to ensure that, within the foreseeable future, both the BTWC and the CCW are equipped with a permanent secretariat to oversee their successful implementation, along the lines of the Organisation for the Prohibition of Chemical Weapons, which was created for that purpose under the Chemical Weapons Convention.”

16 November The US National Research Council releases a report by the Committee on Review and Evaluation of International Technologies for the Destruction of Non-Stockpile Chemical Materiel. The Committee concludes, amongst other things, that the Army should consider adopting chemdemil technology such as is used in Europe and Japan in order to complement that which it currently uses. The Committee recommends that the Army consider three choices for eliminating whole munitions: the Controlled Detonation Chamber (CDC) – technology developed by a US company but used only in Europe – which places explosives around the munitions and then detonates them in a tightly sealed chamber; the Detonation of Ammunition in a Vacuum-Integrated Chamber (DAVINCH) technology – developed by a Japanese company – which works in a similar way; and another technique – developed by a Swedish company – which detonates munitions in a kiln heated to temperatures between 400 and 600 degrees Celsius. The study was sponsored by the US Army.

18 November UN Secretary-General Kofi Annan warns that the rapidly growing biotechnology industry is increasing exponentially and that action is required on a global basis to prevent its misuse. Speaking in St Gallen, Switzerland, Annan says: “As biological research expands, and technologies become increasingly accessible, this potential for accidental or intentional harm grows exponentially... Even novices working in small laboratories will be able to carry out gene manipulation.” Annan’s statement comes six months after he had called for a global forum on bio-terrorism [see 2 May].

Two days later, on the opening day of the BWC Sixth Review Conference, Annan repeats his call for such a forum.

18-19 November In Geneva, the twenty-fifth [see 13-14 May] workshop of the Pugwash Study Group on the Implementation of the Chemical and Biological Weapons Conventions takes place. The theme of the meeting is *Towards a Successful Outcome for the Sixth Review Conference*. It is hosted by the Association Suisse de Pugwash in association with the Geneva International Peace Research Institute, and financed by a grant provided by Swiss Federal Authorities. The workshop, which takes place under the Chatham House Rule, is attended by sixty-one participants from a number of countries

– including Australia, Belgium, Czech Republic, France, Germany, Israel, Italy, Japan, Pakistan, Russia, Sweden, Switzerland, the UK and the USA.

19-20 November In Washington DC, a meeting of the National Academies Committee on Methodological Improvements to the Department of Homeland Security’s Biological Agent Risk Analysis is scheduled to take place [see 28-29 Aug].

20 November In Turkey, government forces use “chemical weapons” against guerrillas from the People’s Congress (formerly the PKK) north of Diyarbakir, so reports the Iraqi daily *Aso*, quoting a commander in the People’s Guardian Force [HPG]. Lawand Sarabazi is quoted as saying: “At noon [...] clashes broke out between the HPG and Turkish army in Julk region. Consequently, five Turkish soldiers were killed and eight others were injured... Following the clash, the Turkish army chemically bombarded the HPG fighters by helicopters. As a result of the chemical attack, eight guerrillas were killed and two others were injured.” [See also 9 Apr 05 and 24 Mar]

20 November In Geneva, the sixth [see 14 Nov 02] BWC Review Conference commences, scheduled to end on 8 December. Ambassador Masood Khan of Pakistan is elected President by acclamation. Over the next three weeks, 103 parties to the BWC participate in the Conference. In addition, ten signatories (i.e. that have not yet ratified the Convention) participate without taking part in the decision-making process: Burundi, Côte d’Ivoire, Egypt, Haiti, Madagascar, Myanmar, Nepal, Syria, United Arab Emirates, and Tanzania. Israel, a non-party, is granted observer status. Also granted observer status are: the United Nations (including UNDDA, UNIDIR and UNMOVIC), the Food and Agriculture Organization, the International Committee of the Red Cross, INTERPOL, the League of Arab States, the OPCW, the World Health Organization, and the World Organisation for Animal Health.

On the first day, the Conference adopts its indicative programme of work and the General Debate begins as prelude to the detailed work. Subsequently the Committee of the Whole holds eleven plenary meetings, during which it reviews the provisions of the Convention article-by-article and adopts a report which is subsequently adopted by the Conference. The Credentials Committee adopts a report that is later noted by the Conference. At its final meeting the Conference approves the cost estimates for the meetings of experts and meetings of states parties to be held from 2007 to 2010, including provision for an Implementation Support Unit (ISU).

Forty parties to the Convention, and two signatories, make statements during the General Debate, which continues until the third day. Also making statements are the Food and Agriculture Organization, the International Committee of the Red Cross, INTERPOL, the OPCW, the World Health Organization, and the World Organisation for Animal Health. In his statement, US Assistant Secretary of State for International Security and Nonproliferation John C Rood says: “We believe that the regime in Iran probably has an offensive biological weapons program in violation of the BWC. Similarly, we also believe North Korea has a biological warfare capability and may have developed, produced, and weaponized for use biological weapons, also in violation of the BWC. Finally, we remain seriously concerned that Syria – a signatory but not a party to the BWC – has conducted research and development for an offensive BW program. [See also May].” Responding to the allegation, Iranian Ambassador and Permanent Envoy to the UN Geneva Office Alireza Moaiyeri says: “I categorically reject what the US delegation has said about my country... Their baseless allegations are contrary to the spirit of the review conference.”

20 November In the UK, the Royal British Legion has said a study, funded by the Ministry of Defence, which concluded Gulf War veterans did not suffer adverse effects from vaccines they received, “effectively tells veterans nothing of value”, so reports the London *Telegraph*. The nine-year research programme [see 14 Nov 05] carried out on marmosets examined the practice of giving the troops whooping cough vaccine to speed up the effects of anthrax vaccine. [See also 14 Jul 05]

20 November *USA Today* reports having obtained documents showing that the Department of Defense has revised its chemdemil schedule by extending the deadline to 2023, eleven years later than required by the CWC [see also 10 Apr]. The Department’s spokesman Chris Isleib is quoted as saying that the delay is the result of several factors, including technological challenges in developing and building disposal plants, regulatory delays, and safety and security issues.

Seven weeks later, Under-Secretary of Defense Kenneth Krieg certifies to Congress that the Department’s Assembled Chemical Weapons Alternatives programme will complete the chemdemil of the chemical munitions stockpile at the Pueblo facility by 2020, and at the Lexington facility by 2023. The total costs for the two sites, originally estimated at \$4 billion, will now total \$8 billion, i.e. about \$150 million annually for each site.

20-21 November In New York, the UNMOVIC College of Commissioners convenes for its twenty-fourth [see 23-24 May] regular session. As on previous occasions, observers from the OPCW and the IAEA are also present.

Five days previously, Francis Record of the USA tendered his resignation from the College upon his departure from the State Department. UN Secretary-General Kofi Annan subsequently appoints Robert Witajewski, also of the USA, as his replacement.

20 November-8 December In Geneva, non-governmental organizations and other organs of civil society are active during the Sixth BWC Review Conference [see 20 Nov]. A record number, 33, of such bodies attend some or all of the conference. On the afternoon of the second day, in a practice that had been initiated during the Fourth Review Conference, in 1996, representatives of 16 of them speak in turn during an informal session of the conference chaired by the President that had been coordinated beforehand by the Geneva NGO Committee on Disarmament. The texts of their presentations are distributed to delegations upon delivery. Those that intervened in this manner were, in order of speaking, Graham Pearson representing the University of Bradford, Kathryn Nixdorff for INES, Michael Crowley for VERTIC, David Atwood for the Friends World Committee for Consultation, Filippa Lentzos for the London School of Economics, Alan Pearson for the Center for Arms Control and Non-Proliferation, Trevor Griffiths for Pax Christi International, Jean Pascal Zanders representing the Arms Control Association, Serguei Batsanov speaking for Pugwash, Paolo Fontana for LNCV, Loulena Miles for TriValley CAREs, Susi Snyder for WILPF, Nicolas Isla for the Hamburg University Research Group for Biological Arms Control, Jean Pascal Zanders (again) for BWPP, Gigi Kwik Gronvall for the UPMC Center for Biosecurity, and Noel Stott for the Institute for Security Studies in South Africa.

Throughout the conference NGOs present lunchtime seminars for delegations in a room of the Palais des Nations close to the conference chamber:

20 Nov. University of Bradford Department of Peace Studies and Quaker UN Office Geneva, ‘Key points for the Sixth Review Conference’ (presenters: Graham Pearson, Nicholas Sims and Malcolm Dando).

21 Nov. Royal Society (UK), ‘Recommendations of the RS-IAP-ICSU international workshop on science & technology developments relevant to the Biological and Toxin Weapons Convention’ (presenters: Rod Flower, Andrew Pitt, Kathryn Nixdorff and Sergio Pastrana).

22 Nov. HSP, VERTIC and BASIC, ‘Briefing Book for the Sixth Review Conference’ (presenters: Daniel Feakes, Angela Woodward and Ian Davis; chair: Ambassador Johannes Landeman of the Netherlands).

23 Nov. University of Pittsburgh Medical Center, Center for Biosecurity, ‘Biodefense research and High Containment Laboratories: Opportunities and challenges in the context of the BWC’ (presenter: Gigi Kwik Gronvall).

24 Nov. Center for Strategic & International Studies (USA), ‘The biological weapons threat and non-proliferation policy options: A survey of senior US decision makers and policy shapers’ (presenter: Amy Smithson).

27 Nov. Women’s International League for Peace and Freedom, ‘Bio research in the United States – emerging level IV labs’ (presenters: Joan Ecklein, Carol Umer and Susi Snyder).

28 Nov. Hamburg Centre for Biological Arms Control and the Center for Arms Control and Non-Proliferation, ‘Strengthening the BWC by enhancing transparency: the CBMs and beyond’ (presenters: Nicolas Isla, Gunnar Jeremias, David Fidler, Brian Rappert and Marie Chevrier).

29 Nov. European Biosafety Association, ‘Promoting biosafety and biosecurity – international standard for biorisk management in microbiological containment facilities’ (presenter: Ingegerd Kallings).

30 Nov. Center for Strategic & International Studies (USA), ‘Governance for biological threat reduction: A comprehensive, interdisciplinary, international approach’ (presenters: David Heyman and Gerald Epstein).

4 Dec. DePaul University College of Law, ‘Bio-science development & preventing bio-crimes: Uniting future strategies’ (presenter: Barry Kellman).

5 Dec. Interpol and VERTIC, ‘National implementing legislation’ (presenters: Scott Spence and Angela Woodward).

6 Dec. Green Cross (Switzerland), ‘Developing a comprehensive biosecurity regime’ (presenter: Alexander Likhotal).

One further feature of NGO activity during the conference is the preparation and distribution of news-sheets summarizing and commenting on the proceedings – necessarily limited though they are by the fact that, once the conference moved from plenary sessions into sessions of the Conference of the Whole, NGOs are excluded from the conference chamber. The daily progress reports written by Richard Guthrie and distributed by BWPP are especially prominent, read by a wide range of people both at the conference and, via the internet, outside it. Much read, too, was the blog posted by Alan Pearson of the Center for Arms Control and Non-Proliferation at www.bwc06.org.

Civil-society participants subsequently publish detailed descriptive and/or analytical accounts of the Review Conference.

22 November In Russia, the chairman of the Union for Chemical Safety says that a leak of toxic substances occurred during operations at the Maradykovsky chemdemil facility [see 8 Sep] the previous week. Lev Fyodorov says that, according to workers at the facility, several aviation bomb casings ruptured during reprocessing, and this caused the leakage. He tells the Associated Press that the chances of environmental damage are slim, since the incident occurred inside the facility. “I think it’s an accident... [The spill proves that the method used] is convenient only for making a quick accounting [for the CWC].”

The allegation is, however, denied by Aleksandr Yeremkin, the assistant to the head of the federal directorate for the safe storage and destruction of chemical weapons.

The next day, chief of the directorate for conventional problems in the Kirov Region Mikhail Manin also denies the allegation thus: "This is complete misinformation... There is three-fold control at the facility – in the workshop, in the medical-protection zone and in the protective measures zone."

22 November Radio Prague reports that a Canadian journalist is currently in Prague researching thousands of experiments with lysergic acid diethylamide (LSD) that were undertaken in Czechoslovakia from the mid 1950s until the mid 1970s. In an interview, Ross Crockford says: "LSD was discovered in 1943, in Switzerland... In Czechoslovakia there were scientists who were regularly experimenting with new substances that had come on the market. And Sandoz laboratories in Switzerland, which had patented LSD at the time, sent some here... One of the doctors, a man named Jiri Rubicek, was interested in the possible effects it could have... The communists certainly were aware of it, because it was manufactured by the state pharmaceutical company Spofa from about 1963 to 1974. Also the Czech army used it in some experiments in the late 1960s, because they were afraid that it was actually going to be used as a chemical weapon by the United States. So they performed some experiments on soldiers, and there are films of that. They didn't have any problem with this research, because the doctors were very careful to frame it in very mechanistic terms - you had a problem, you applied a chemical to it and then the problem was solved. As long as it was phrased that way it was fine. The drug never leaked out onto the street, so there was no social problem they had to deal with like they did in the West."

Two weeks later, *The Prague Post* runs an interview with a chemist who helped prepare an LSD test on Czechoslovak soldiers in 1967 to see how they would perform while under its influence. Miroslav Sajda, who worked at the Military Research Institute in Hradec Králové, East Bohemia, says that at the time Czechoslovak military officials had information that the US Army was considering using LSD as a chemical weapon to help disable enemy troops. The *Post* reports that Sajda and filmmaker Václav Hapl documented the experiment and it inspired them to make the 1970 film essay *Man Isn't Dying of Thirst*, which was banned by the authorities until 1989. The paper reports that from 1954 until 1974 at least 400 people participated in LSD experiments in Czechoslovakia. "LSD was a hit here," says Sajda. "But, of course, in those early days, scientists didn't really know how it could be used." The *Post* states that Crockford was commissioned to do his research by a California-based association called MAPS (Multidisciplinary Association for Psychedelic Studies), the goal of which is to promote the legalization of psychedelic substances.

22 November At UN headquarters, Secretary-General Kofi Annan transmits to the Security Council the twenty-seventh quarterly report on the activities of UNMOVIC, for the period 1 September to 30 November 2006. Annexed to the report is a review of "value indicators" that have emerged during a review of the inspection activities of UNMOVIC in Iraq. The annex states: "An individual indicator by itself may not be significant, but indicators from several domains taken together can be greater in value. The combination of indicators gathered over time may not prove to be conclusive, but they may constitute a picture or pattern that needs an explanation. Examples from the Commission's experience in Iraq show how the combination of several indicators can help to uncover undisclosed information or proscribed activities." It then gives a number of examples of how, since 1991, UN inspectors have used indicators in Iraq to

uncover activities relating to, amongst other things, chemical and biological weapons. The annex then gives an explanation of the various indicators involved.

22 November Canadian Minister of National Defence Gordon O'Connor announces that the government is expanding the Chemical Warfare Agent Testing Recognition Program [see 19 Feb 04] to include Canadian military veterans who volunteered to participate in chemical-warfare experiments while serving abroad. The change means that approximately two hundred Canadian veterans, including soldiers from Newfoundland serving with the British Army during the Second World War, will be eligible for a CA\$24,000 *ex-gratia* payment. Documents obtained a week previously by CTV News indicate that the Department of Defence believes that the soldiers in question volunteered to have mustard gas sprayed on their arms that had been coated with "barrier creams" in tests carried out at Porton Down between 1941 and 1945. [See also 7 Nov]

23 November Canadian Minister of Foreign Affairs and Minister of the Atlantic Canada Opportunities Agency Peter MacKay presents to parliament *Global Partnership Programme: Making a Difference*, which sets out Canada's contribution to the Global Partnership Against the Spread of Weapons and Materials of Mass Destruction [see 26-27 Jun 02] for the period 2005-2006. The report states that as of 31 March 2006 Canada had funded twenty-five biotechnology and life-science projects through the International Science and Technology Center, Moscow, at a cost of about \$7 million. The projects are aimed at the redirection of scientists who formerly worked on the Soviet biological weapons programme. In total, Canada is redirecting nearly five hundred former scientists.

26 November In Japan, around two thousand people participate in an emergency preparedness and response exercise – the fourth of its kind – based on the scenario of North Korean agents undertaking a chemical attack. The *Daily Yomiuri* quotes "officials" as saying the simulated attack, in which local and federal emergency personnel participate, involves the use of a sarin-filled explosive that kills ten people and wounds two hundred.

26 November – 1 December In Zemianske Kostolany, Slovakia, the second [see 7-11 Nov 05] course for advanced laboratory training takes place at the military training and development centre. The course, which is jointly organized by the Slovak government and the OPCW, provides participants from CWC parties with an opportunity to work with Schedule 1 chemicals and riot control agents under laboratory conditions and in the field. It is attended by six participants from Armenia, Costa Rica, Qatar and Uruguay.

27 November – 1 December In Singapore, the fifth [see 4-10 Dec 04] Singapore International Symposium on Protection against Toxic Substances (SISPAT) takes place, in conjunction with the first International CBRE Operations Conference. Around 450 delegates from 38 countries from the Asia-Pacific region and beyond attend the conference, which is entitled *Advancing Science Against Unconventional Threats*. The purpose of the event is to foster stronger cohesion among the armed forces, and to exchange knowledge and experiences on operational issues concerning the defence against unconventional CBRN threats. In his address, OPCW Director-General Rogelio Pflinter says the new code of conduct on ethics is timely for those who use and apply chemistry. "The scientific community has the know-how, it could play a major role in ensuring their work is not a disservice and is not available to those who are pursuing means that are contrary to peace and security in the world."

28 November In Jackson, Tennessee, District Judge James D Todd sentences a man to thirty years imprisonment for attempting to acquire sarin and explosives to use against government buildings [see 5 Nov 04]. Earlier this year, Demetrius 'Van' Crocker, was convicted on five charges including attempted possession of a chemical weapon and inducing another person to acquire a chemical weapon.

29 November In Washington DC, the Center for Strategic and International Studies publishes *The Biological Weapons Threat and Nonproliferation Options: A Survey of Senior US Decision Makers and Policy Shapers* by Amy Smithson [see 20 Nov-8 Dec]. The report surveys the views of around 340 current and former government officials, legislators, policy-makers, and non-governmental experts as to the nature of the threat of biological weapons and possible ways forward to reduce the threat. It also provides background information on biological weapons and related issues.

December The US National Science Advisory Board for Biosecurity (NSABB) [see 4 Mar 04] releases *Addressing Biosecurity Concerns Related to the Synthesis of Select Agents*. The report sets out the assessment of the NSABB Working Group on Synthetic Genomics regarding the ability to artificially reconstruct select agents; the adequacy of the current regulatory framework to safeguard against the misuse of science with regard to such agents; and its recommendations for addressing these concerns.

1-2 December In Berlin, there is a conference on *Dual Use and Code of Conduct: Challenges for Scientific Research*, organized jointly by two major German academies, the Berlin-Brandenburgerische Akademie der Wissenschaften and the Deutsche Akademie der Naturforscher Leopoldina. The purpose of the conference is to discuss ways of approaching the question of how to deal with the consequences of scientific research, with particular focus on biosecurity, biosafety and dual-use aspects of high-risk biological agents. More than twenty-five experts in the field of science and politics, including the European Commission, attend the event. The conference includes a panel discussion on 'Scientific support for policies projects'. Exchanges during the panel discussion include criticism by the project co-ordinators of ASSRBCVUL, Biosafe and Crop Security, with regard to the current inadequacies of co-ordination action funding. Presentations are made on the following subjects: 'Novel trends and future directions in anthrax research', by Cesare Montecucco, Venetian Institute of Molecular Medicine; 'Italian anthrax project: Research for and from preparedness to bioterrorism', by Antonio Cassone, Istituto Superiore di Sanita; 'Biorisk reduction: WHO approach', by Emmanuelle Tuerlings, World Health Organization; 'Initiatives by the EU to improve health security', Helmut Walerius, European Commission; 'Strategy building – ECDC and Co-operation with microbiological laboratories', by Amanda Ozin, European Centre for Disease Prevention and Control; 'European approach to bio-preparedness', by Lucas Holub, European Commission; 'The European capacity to respond to bio-threat', Alexandre Custaud, EuropaBio; 'Vaccines against rare infectious diseases: How can they be licensed without proof of clinical efficacy', Michael Schwanig, Paul Ehrlich Institute; 'Are we prepared? Lessons learned from the detection of new *Bacillus anthracis* strains with unusual biological properties in wild-living chimpanzees', Georg Pauli, Robert Koch Institute; 'RNA- and codon-optimised genes in biotechnology: Biosecurity issues and code of conduct', Ralf Wagner, GeneArt AG; 'Secrecy in history of biological research: From state bio-warfare programs to current biodefense', Jeanne Guillemin, Massachusetts Institute of Technology; 'The dual-use dilemma and codes of conduct for scientists: ongoing

national and international initiatives', Malcolm Dando, University of Bradford; 'Choices and challenges in education regarding dual use research', Brian Rappert, Exeter University; 'Addressing the risks of research misuse – a funder's perspective', Robert Terry, Wellcome Trust; 'DNA for peace: Bio-security and the developing world', Peter Singer, McLaughlin Centre; 'NSABB: The challenge of enhancing biosecurity in the life sciences', David Franz, National Science Advisory Board for Biosecurity; and 'Publishing and biosecurity', Linda Miller; *Nature*, New York.

2 December *The* (London) *Guardian* reports that the government has ordered six scientific organizations to provide an early warning system on bioterror following an investigation by the newspaper earlier this year in which one of its reporters was able to purchase a short section of variola virus DNA over the internet [see 14 Jun]. Notwithstanding the fact that the government has said that current regulations are adequate, the Royal Society, the Biosciences Federation, the Biotechnology and Biological Sciences Research Council (BBSRC), the Medical Research Council (MRC), the Nuffield Trust and the Wellcome Trust will now be required "to alert the science minister if they become aware of any step change in technologies which could make it much easier to construct or modify pathogenic organisms". According to *The Guardian*, the decision was taken at a cross-governmental meeting in August attended by officials from the Department of Trade and Industry, the Home Office, the Foreign and Commonwealth Office and the Department for Environment, Food and Rural Affairs. The MRC and the BBSRC also sent representatives.

2-4 December At OPCW headquarters, the eighth [see 5-6 Nov 05] annual meeting of CWC national authorities takes place. The meeting, which is attended by over 185 participants from 105 CWC parties, is aimed at assisting parties to increase their national capacity to comply with their obligations under the Convention, facilitate the exchange of information and national implementation experience, promote cooperation among national authorities, identify common implementation problems and facilitate their resolution through the cooperative efforts of parties and the OPCW Technical Secretariat, help make States Parties more self-sufficient in terms of their capacity to implement the Convention and enhance awareness of activities relating to international cooperation under the Convention. The thematic focus of the meeting is national investigations and prosecutions of cases involving chemical weapons, including actual cases pursued in a number of CWC parties. Representatives from Italy, the Netherlands, Japan, Jordan, and the USA, as well as the Netherlands National Police Agency, share their views on undertaking criminal investigations of violations of the CWC under existing national laws.

3 December In Georgetown, Guyana, government officials have confirmed that three days previously an "independent militant group" sent emails to newspapers, airlines and the US Embassy in Guyana threatening a chemical attack against Caribbean carrier BWIA and two US airlines flying out of Guyana, so reports the Caribbean Media Corporation news agency. Though the government considers the threat to be a hoax, it has nonetheless mobilized the security forces and alerted representatives of the airline industry operating in Guyana.

The following day, a suspect is arrested and questioned by the US Federal Bureau of Investigation and local officials after police trace the origin of the emails to an Internet café in New Amsterdam.

4 December In Maryland, a new facility for studying clouds of toxic gases released by chemical or biological weapons opens at the Edgewood Chemical Biological Center at Aberdeen

Proving Ground. According to a press release by the Center, the chemical and biological detector evaluation facility features a "vortex chamber" that is able to simulate a cloud of toxic agent. The facility aims to enable scientists to study WMD detection systems designed to detect clouds of agent from a distance of several kilometres.

5 December At OPCW headquarters in The Hague, representatives of international and non-governmental organisations participating in the Eleventh Session of the OPCW Conference of the States Parties are briefed by the OPCW Director of Special Projects, Krzysztof Paturej, on the preparations for marking the tenth anniversary of the Chemical Weapons Convention. Three main events are scheduled: opening memorial and commemoration ceremonies in The Hague on 9 May 2007; an 'OPCW Academic Forum' to be convened during 18-19 September; and an 'OPCW Industry and Protection Forum', during 2-3 November 2007.

5-8 December In The Hague, the eleventh [see 7-11 Nov 05] session of the Conference of the States Parties to the CWC takes place, chaired by Alfonso M Dastis, Permanent Representative of Spain to the OPCW.

In his opening address, OPCW Director-General Rogelio Pflinter says that excuses for countries not signing up to the Convention, thereby enhancing international peace and security, can no longer be tolerated.

The Conference approves the OPCW's programme and budget for 2007, which includes verification activities to monitor chemical weapons destruction and non-proliferation. It also approves expenditure of EUR 75 million for 2007 (EUR 75.6 million in 2006).

The Conference approves a programme of 200 inspections of relevant industrial facilities worldwide for 2007 (in 2006, 180 industry inspections were conducted), as well as a further 187 projected missions to verify the storage and elimination of chemical weapons and their production facilities. A number of missions will also be undertaken to old or abandoned chemical weapons sites. Inspections will take place as follows: Schedule 1 facilities, 11 inspections in 2007 (2006, 16 inspections); Schedule 2 facilities, 42 inspections in 2007 (2006, 46 inspections); Schedule 3 facilities, 29 inspections in 2007 (2006, 28 inspections); other chemical production facilities, 118 inspections (2006, 90 inspections).

The Conference agrees to sustain for a further year the follow-up decision on the implementation of Article VII of the CWC relating to the Article VII Action Plan.

The Conference confirms that it will review the implementation of the Action Plan on Universality and take any decision it deems necessary, in particular addressing the status of non-parties whose non-adherence to the CWC is a cause for serious concern.

On the final day of the Conference, parties approve requests from Russia, the USA and several other nations for additional time to eliminate their stockpiles of toxic agents. Pakistan expresses support for the extensions and for rapid chemical demilitarization, while India, one of the parties to receive an extension, says it has already destroyed seventy per cent of its chemical weapons. Russia and the USA had requested and received the full five years, as did China and Japan for destroying weapons abandoned by the Japanese army in China during World War II. The other countries had requested shorter extensions. India now has until 28 April 2009 to complete its work; Libya has until 31 December 2010; and South Korea has until 31 December 2008. Albania receives extensions of its intermediate deadlines but states that it is able to finish disposal of an estimated 16 tons of mustard agent by the original deadline. As a condition of their extensions, Russia and the USA agree to

accept visits by members of the OPCW Executive Council starting in 2008. Council members will pay at least one visit to each chemical weapons destruction facility to verify their ability to meet the 2012 deadline.

In addition to the CWC parties, Israel, one of the eight states that have signed the treaty but have not yet ratified it, attends the Conference as an observer. Egypt, Iraq, and Lebanon, which have not signed or ratified the treaty, also attend as observers. Representatives of eight international organizations also attend, including the United Nations, the Council of the European Union, the League of Arab States, the North Atlantic Treaty Organization, the Preparatory Commission for the Comprehensive Nuclear-Test-Ban Treaty Organization, the International Committee of the Red Cross, and the International Organization for Migration. A further seven chemical industry associations and non-governmental organizations attend as observers.

On the sidelines of the Conference, Deputy Head of the Russian Federal Agency for Industry Viktor Kholstov tells ITAR-TASS news agency that Russia has now destroyed 3,123 tonnes of blister agents and 2,925 tonnes of "neuroparalytic agents", representing over fifteen per cent of its total chemical weapons stockpile. He says "the immediate task of Russia to destroy 8,000 tonnes of chemical warfare agents by April 29, 2007 will be fulfilled". [See also 1 Nov]

Among the many documents other than conference papers made available to participants is a 40-page handbook entitled *Global Chemical Industry Compliance Programme*, which is joint publication by the US and Romanian CWC National Authorities. Its stated purpose is to guide "chemical facilities, traders and trading companies" in developing their compliance with the CWC, and is to have an associated web site at gc-icp.cwc.gov.

6 December In The Hague, a seminar on *Toxic Chemicals and Law Enforcement Under the CWC* is convened in the margins of the Eleventh Session of the OPCW Conference of the States Parties [see 5-8 Dec] by the Scientists Working Group on CBW of the Center for Arms Control and Non-Proliferation, Washington DC. The meeting is chaired by the Secretary-General of the WMD Commission [see 29 Jan 04 and 1 Jun 06] Ambassador Henrik Salander of Sweden, and receives presentations by Peter Herby, head of the Mines-Arms Unit in the legal division of the International Committee of the Red Cross, by UNIDIR Director Patricia Lewis, and by Walter Krutzsch, formerly a CWC negotiator and OPCW official.

6 December In Washington DC, the Monterey Institute Center for Nonproliferation Studies hosts a briefing on *The Promise and Potential Risks of Synthetic Biology*. Speakers address the current status of research in the field; examine the risks of this new technology for public health, the environment, and national security; and suggest some policy options for regulating it.

8 December In Geneva, the sixth BWC Review Conference, which commenced three weeks earlier [see 20 Nov], concludes. The Conference adopts a final declaration on the various articles of the Convention, and a series of decisions and recommendations on a number of issues, including the creation of an Implementation Support Unit (ISU), an inter-sessional work programme for 2007-2010, confidence-building measures, and the promotion of universalization.

Regarding the ISU, the declaration states: "[The ISU] will consist of three full time staff members within the DDA [Department of Disarmament Affairs] Branch in Geneva, funded by States Parties for the period from 2007-2011 to perform the following tasks: Providing administrative support to and preparing documentation for meetings agreed by the Review Conference; facilitating communication among States Parties and, upon

request, with international organizations; facilitating, upon request, States Parties' contacts with scientific and academic institutions, as well as non-governmental organizations; serving as a focal point for submission of information by and to States Parties related to the Convention; supporting, as appropriate, the implementation by the States Parties of the decisions and recommendations of this Review Conference... Receiving and distributing Confidence Building Measures to/from States Parties; sending information notices to States Parties regarding their annual submissions; compiling and distributing data on CBMs and to inform on participation at each Meeting of States Parties; developing and maintaining a secure website on CBMs to be accessible only to States Parties; serving as an information exchange point for assistance related to preparation of CBMs; facilitating activities to promote participation in the CBM process, as agreed by the States Parties... The unit's mandate will be limited to the above mentioned tasks. The unit will submit a concise annual written report to all States Parties on its activities to implement this mandate. The unit's performance will be evaluated and its mandate will be reviewed by States Parties at the Seventh Review Conference."

Regarding the intersessional work programme it states: "To hold four annual meetings of the States Parties of one week duration each year commencing in 2007, prior to the Seventh Review Conference, to be held not later than the end of 2011, to discuss, and promote common understanding and effective action on: ways and means to enhance national implementation, including enforcement of national legislation, strengthening of national institutions and coordination among national law enforcement institutions [to be considered in 2007]; regional and sub-regional cooperation on BWC implementation [to be considered in 2007]; national, regional and international measures to improve biosafety and biosecurity, including laboratory safety and security of pathogens and toxins [to be considered in 2008]; oversight, education, awareness raising, and adoption and/or development of codes of conduct with the aim to prevent misuse in the context of advances in bio-science and bio-technology research [...] [to be considered in 2008]; identifying requirements and requests for capacity enhancement [for States Parties in need of assistance] and opportunities for providing assistance related to these fields [from States Parties in a position to do so, and international organizations] [to be considered in 2009]; provision of assistance and coordination with relevant organizations upon request by any State Party in the case of alleged use of biological or toxin weapons, including improving national capabilities for disease surveillance, detection and diagnosis and public health systems [to be considered in 2010]... Each meeting of the States Parties will be prepared by a one week meeting of experts."

Regarding confidence-building measures the declaration states: "The [ISU] with the assistance of interested States Parties, shall develop an electronic format of the existing Confidence building measures forms; once completed, the electronic forms shall, with the consent of the State party submitting them, be posted on a secure Internet site and made available for the use of States Parties [...] ... The [ISU] shall regularly inform States Parties about CBM returns and provide statistics on the level of participation at the annual meetings of States parties; States Parties shall designate a national point of contact in charge of preparing the submission of CBMs, the contact details of which shall be sent to the [ISU]... the Conference reviewed the implementation of the confidence building measures during its session and agreed that the issue merits further and comprehensive attention at the Seventh Review Conference."

In relation to universality, it states: "The Conference notes that although the Convention is a cornerstone of international security, with only 155 States Parties, membership of the Convention falls behind other major multilateral arms control,

disarmament and non-proliferation treaties. The Conference agrees that a concerted effort by States Parties is needed to persuade States not Parties to join the Convention... [T]he Conference requests States Parties to: promote universalisation of the Convention through bilateral contacts with States not Parties; promote universalisation of the Convention through regional and multilateral fora and activities; inform the [ISU] of their designated national point of contact for facilitating information exchange of universalisation efforts; report, as appropriate, on their activities at annual meetings of States Parties; provide, as appropriate, the ISU with relevant information on activities related to the promotion of universalisation of the Convention."

8 December At OPCW headquarters, OPCW Director-General Rogelio Pflirter signs a Memorandum of Understanding with James Wall, Permanent Representative of Canada to the OPCW, under which the Canadian Department of National Defence will offer a two-week training course to newly-recruited OPCW inspectors at the Counter Terrorism Technology Centre, Suffield, Alberta. Under the agreement, the Department of National Defence will fund more than two-thirds of the cost of providing the course.

10-12 December In Sana'a, Yemen, there is a workshop on the subject of CWC national authorities, which is jointly organized by the Yemeni national authority and the OPCW. The purpose of the meeting is to enable experts to review how the CWC should be implemented nationally. As part of the event there is an intensive training course on the legal and technical aspects of industrial and chemical activities and means of verification.

11 December At OPCW headquarters, the fourth [see 13 Nov] meeting of the open-ended working group for the Second Review Conference of the CWC is scheduled to take place.

11 December In Brussels, the General Affairs and External Relations Council of the European Union endorses a concept paper proposing the creation of an EU WMD Monitoring Centre (WMD-MC). The proposal does not envisage the creation of a new structure or a new agency nor does it propose any budgetary increase. Instead it aims to endorse and make official working methods acquired during the implementation of the EU's WMD Strategy. The tasks of the WMD-MC would cover: day-to-day implementation of the WMD Strategy; further development of the WMD Strategy; ensuring the coherence of assistance programmes; and contacts with third countries and organizations. In the conduct of its work, the paper suggests that the WMD-MC could use tools such as ad hoc task forces and rosters of experts, both of which it notes have been used with respect to EU activities in support of the BWC.

11 December In the UK, the *New Statesman* publishes an account by a former member of the Defence Intelligence Staff about a "top-secret intelligence report" relied on by Cabinet Office intelligence officials to strengthen the government's dossier *Iraq's Weapons of Mass Destruction: The Assessment of the British Government* [see 24 Sep 02]. Brian Jones [see also 11 Jul 04] writes: "Early [in 2004], I was appalled that the report of the Hutton inquiry [see 28 Jan 04] ignored a blatant attempt to cover up the truth; and I was angry about the government's claim to have been absolved of all criticism relating to the Iraq war. I was better placed than most to understand what had happened because, until just before the war, I had worked at the Defence Intelligence Staff in Whitehall on the subject of weapons of mass destruction. I was in no doubt that there had been deliberate deception; the difficulty was in knowing who was ultimately responsible... The deception revolved around an intelligence report I had mentioned in evidence to Hutton

which, for ease of reference, I will call Report X... A few months later, the Butler review [see 14 Jul 04] addressed Report X in some detail... New information, some leaked, has emerged since Butler reported in July 2004. In addition, it has been possible to make a more considered analysis of the welter of information arising from four complex inquiries within a short space of time... The message the public had to hear was that Saddam Hussein had WMD and was a real threat. However, the Joint Intelligence Committee (JIC), which has the last word on such assessments, had reported on 15 March 2002 that this was not the case... The dossier was put on the back burner until later in the year. On 21 July, a highly restricted Cabinet Office briefing paper was written. It preceded a secret 'inner-circle' meeting called by the Prime Minister. The paper noted the need to 'prepare public opinion in the UK that it is necessary to take military action against Saddam Hussein' and concluded that an 'information campaign' would be needed... By September, an American invasion of Iraq was virtually unstoppable, and the Prime Minister urgently commissioned a dossier on Iraq's WMD... Report X was critical in silencing dissenting intelligence experts, and allowed the dossier to be published on time and on message. We now know that Report X came from 'a new source on trial', which means it should have been treated with suspicion... I have since learned that Report X was considered 'crap' and that, within hours of seeing it, the intelligence experts rejected it. The Butler committee says it was presented with no evidence of an insuperable obstacle to allowing expert-level analysts access to Report X before the dossier was published... I am more convinced than ever that Report X was welcomed in September 2002, not as a particularly valuable piece of new intelligence, but as a way to finesse a 'sexed-up' dossier past the experts on WMD. Thus the normal intelligence process of sceptical scrutiny was subverted. I believe there were experienced intelligence professionals on the JIC who had seen Report X and understood that it was not substantial. This means that the government's claims post-Butler, that the intelligence process needed to be tightened up with a more critical approach to assessment, was part of a cover-up intended to blame intelligence rather than policy for the mistake that led us to war." [See also 2 Nov]

11 December In Washington DC, the Committee on Hemispheric Security of the Organization of American States holds a special meeting to discuss universality of the CWC. Experts also discuss progress made by governments with regard to sharing information relating to legislative and administrative measures to implement the Convention as well as the importance of bilateral and regional collaboration – in the context of UN Security Council resolution 1540 [see 28 Apr 04] – to prevent the proliferation of nuclear, chemical and biological weapons; their means of delivery; and related materials. In his address, OPCW Director-General Rogelio Pflinter says: "There should be no exception to the global ban against chemical weapons. States that choose to remain outside the regime would find themselves isolated from the mainstream."

11 December The US Congressional Research Service (CRS) releases *China and Proliferation of Weapons of Mass Destruction and Missiles: Policy Issues*. The report discusses US national security in light of China's alleged role in weapons proliferation and issues related to the US policy response, including legislation, since the mid-1990s. The only reference in the report to chemical and/or biological weapons is past sales by Chinese entities to Iranian entities of material considered to contribute to chemical proliferation.

Six weeks later, the CRS releases an updated version of the report.

11-13 December In Bogota, there is a regional workshop on

assistance and protection against chemical weapons to support Latin America and Caribbean countries, which is organized by the government of Colombia with the support of the government of the Czech Republic and the OPCW. It is aimed at providing a forum for personnel tasked to respond to incidents or accidents with toxic chemical substances. Attending the event are fourteen participants from the following CWC parties: Argentina, Bolivia, Brazil, Chile, Colombia, Cuba, Ecuador, El Salvador, Mexico, Peru, Suriname, Uruguay and Venezuela. Participants receive an overview of the forms of assistance that the OPCW can provide.

11-14 December In Amman, Jordan, there is the third [see also 6-8 Jul 05] OPCW technical training course designed to assist Iraqi officials in preparing for Iraq's accession to the CWC. Attending are twelve Iraqi officials from, amongst others, the ministries of defence, foreign affairs, health, and science and technology. The course is for the second time hosted by Jordan and is conducted with the support and participation of the governments of Japan, UK and the USA. Its purpose is to provide Iraqi officials with the expert guidance, knowledge and skills needed to prepare mandatory declarations and to introduce the necessary regulatory measures to implement the Convention. It also provides a review of the progress made so far by Iraq in preparation for its accession to the CWC.

12 December In Moscow, during a meeting of the Russian Audit Chamber, documents are presented showing that the total aid allocated to Russia in 2007 by CWC member states is less than required and so may endanger plans for three chemdemil facilities to become operational in 2008. Reporting on the meeting, ITAR-TASS news agency, citing Prime-TASS, says that the documents reveal that 1.9 billion roubles (\$72.3 million) have been allocated for 2007, which is 4.2 billion roubles less than required. The Chamber notes that 1,145 tonnes of chemical agent had been destroyed by 1 January 2006 as opposed to the planned 1,089 tonnes. It also notes that insufficient legislation has been passed governing chemical disarmament, and that the organizational and legal status of the chemical weapons destruction facilities has not been determined, and neither have the regulations governing their use after Russia has fulfilled its obligations under the convention. [See also 5-8 Dec]

12 December In the USA, Trust for America's Health releases *Ready or Not? Protecting The Public's Health From Diseases, Disasters, And Bioterrorism*, which finds that in many aspects the US public health system remains unprepared to respond to an act of biological terrorism or a natural outbreak of disease [see also 6 Dec 05]. The study used ten indicators to assess the readiness of all states, including the capabilities to manage a surge in patients and to disperse countermeasures from the Strategic National Stockpile [see 6 Jul]. It also considered whether states had sufficient laboratories and scientists for identification of natural or intentional outbreaks. Only Oklahoma was found to meet all ten indicators. The study also notes that the Centers for Disease Control has designated only fifteen states as being capable of delivering drugs from the national stockpile to residents. It concludes with a number of recommendations.

12-13 December In Washington DC, the Institute of Medicine, Forum on Microbial Threats, hosts a public workshop on *Infectious Disease Surveillance and Detection: Assessing the Challenges - Finding Solutions.*"

13 December RussianBW Monitor reports that the Partnership for Global Security has released a study on *Reported Accomplishments of Selected Threat Reduction and Nonprolifer-*

ation Programs, By Agency, for Fiscal Year 2005. The study, which was authored by Luke Schlichter, summarizes the activities and accomplishments of cooperative threat reduction and non-proliferation programmes conducted primarily in Russia and other former Soviet states by the US departments of defense, energy, and state.

13 December The UK Foreign Office releases a statement saying that the UK welcomes the Final Declaration reached at the end of the BWC Sixth Review Conference [see 8 Dec]. Making the statement, UK Minister for the Middle East Kim Howells says: "The meetings in the period 2003-2005 provided States with an opportunity for a thorough exchange of views on specific topics... We have agreed to further intersessional work between 2007-2010, to a small secretariat in the UN in Geneva to become a focal point for the Convention, and to a programme to promote membership of the Convention to those still outside it... These are all very positive steps for the [BWC]... The United Kingdom worked hard to achieve such a positive outcome and looks forward to the future and further productive work with other States on a Convention that remains relevant today, over 30 years after its entry into force."

Three weeks later, in the House of Commons, Howells makes the following 'ministerial statement' on the subject: "The [Final Declaration] provides a good basis for future collaboration and co-ordination between States Party to the Convention. The United Kingdom worked closely with European Union partners and with a wide range of other States in the preparatory phase and at the Conference itself to build agreement on the middle ground, which ultimately provided the basis for the final consensus."

13 December The *Washington Post* reports six unnamed Defense Department employees as renewing their legal battle to prevent the Department of Defense (DoD) from administering mandatory anthrax vaccinations, on the grounds that the approval of the Food and Drug Administration (FDA) was flawed. Mark S Zaid, a lawyer representing the group, says the new lawsuit, which is being filed in the District Court for the District of Columbia, is being filed because the DoD opted to make the vaccination programme mandatory for more than 200,000 troops and defence contractors who are assigned to homeland bioterrorism defence or are deployed to Iraq [see 16 Oct]. Earlier, in a case brought by the same group, a federal judge ordered the mandatory vaccinations be halted on the grounds that an FDA review of the vaccine was insufficient [see 27 Oct 04]. The DoD subsequently administered the vaccine on a voluntary basis [see 1 Apr 05]. The FDA then approved the vaccine after a review [see 19 Dec 05].

14 December In Russia, a group of OPCW inspectors arrive to inspect the Maradykovo chemdemil facility [see 22 Nov]. According to ITAR-TASS, over 14,500 "air bombs" containing mustard gas and lewisite are currently awaiting destruction at the facility, while 765 have been destroyed. It further reports that from 1953 the facility stored over 40,000 air bombs containing blister agent.

14 December In the UK House of Commons, the Foreign Affairs Committee publishes a statement by a former British diplomat setting out British intelligence failures in the run-up to the invasion of Iraq. In his statement, which was originally submitted to the Butler Inquiry [see 14 Jul 04], Carne Ross states that "at no time" during his posting as First Secretary in the UK mission to the United Nations from December 1997 to June 2002 "did HMG assess that Iraq's WMD (or any other capability) posed a threat to the UK or its interests". In it, Ross, who resigned from the Foreign Office in 2004 in protest over the war, says: "It

was the commonly-held view among the officials dealing with Iraq that any threat had been effectively contained... I remember on several occasions the UK team stating this view in terms during our discussions with the US... At the same time, we would frequently argue, when the US raised the subject, that 'regime change' was inadvisable, primarily on the grounds that Iraq would collapse into chaos." He adds, that with the exception of about a dozen Scud missiles which were not accounted for, "there was no intelligence evidence of significant holdings of CW, BW or nuclear material" in Iraq, and there was "no intelligence or assessment during my time in the job that Iraq had any intention to launch an attack against its neighbours or the UK or US". [See also 11 Dec]

18 December In Baghdad, in the ongoing trial of Saddam Hussein and six co-defendants on charges of war crimes and crimes against humanity for their alleged roles in Operation Anfal [see 21 Aug], the chief prosecutor presents about twenty-five documents allegedly showing that Hussein ordered the use of chemical weapons attacks against the Iraqi Kurdish population. Munqith al-Faroon refers to some presidential letters including a memorandum from Hussein's office to Iraqi military intelligence, which calls for an attack using "special ammunition and possibly implemented by means of the air force, air aviation and artillery" to quell a Kurdish rebellion in 1987. The 'special ammunition' is identified as "mustard gas". Al-Faroon says that some of the documents bore Hussein's signature. Another 1987 letter, from the Iraqi air force to the ministry of defence says "there were 44 strikes carried out by 44 warplanes, using special ammunition on the bases of (Kurdish) agents, except for one village because it was near our ground units". Meanwhile, Hussein says that he takes responsibility "with honour" for any attacks on Iran using conventional or chemical weapons during the Iran-Iraq war, but he rejects charges that he ordered attacks on Iraqis. Last month, Hussein was sentenced to death in his first trial for ordering the execution of 148 people in the Iraqi village of Dujail following a failed attempt to assassinate him [see 5 Nov].

19 December US President George Bush signs the Pandemic and All-Hazards Preparedness Act, which, amongst other things, creates the Biomedical Advanced Research and Development Authority (BARDA) [see 18 Oct 05]. The purpose of BARDA – which comes under the remit of the Department of Health and Human Services – is to provide financial support to companies and universities to develop new products to protect against naturally and non-naturally occurring epidemics such as Ebola, anthrax and avian flu, as well as chemical and radiological threats. The Act was passed by the House of Representatives and the Senate during the previous two weeks.

19 December The US administration announces that it has cancelled an \$877.5 million contract with VaxGen Inc of Brisbane, California, to develop an anthrax vaccine after the company failed to meet a deadline to commence human testing. VaxGen had agreed to produce a vaccine within five years and was to begin receiving payment once it had begun despatching the 75 million doses to the government. However, the date when the vaccine was due to commence being despatched had to be put back by two years as the company tried to improve the vaccine's potency and reliability, which last month led to the Food and Drug Administration refusing to permit the company to begin human testing.

21 December In Tokyo, at the tenth round of a working-level meeting, Japanese and Chinese foreign ministry officials agree to establish a joint body early next year to accelerate the collection and disposal of wartime chemical weapons left behind

by the Imperial Japanese Army. Kyodo news agency quotes unidentified officials as saying that the joint body is expected to build large-scale disposal facilities in Jilin's Haerbaling district where up to 400,000 shells are believed to have been buried. The body will be represented by officials from Japan's Cabinet Office and China's Foreign Ministry and will later include experts from both countries.

22 December The US Department of Homeland Security releases for public comment rules that will require chemical companies to submit to new security inspections and provide the authorities with plans for protecting against terrorist attacks. The rules, which are scheduled to enter into force at the beginning of April 2007, were drafted as a result of legislation signed by President Bush two months previously [see 4 Oct]. Under the rules, "high risk" facilities would be required to conduct background checks on personnel and take certain measures to restrict access, safeguard chemical holdings and prepare emergency plans for an attack. Failure to meet those guidelines could result in daily fines of up to \$25,000 or shutdown orders. The new rules could also pre-empt state laws, thus possibly putting greater demands upon chemical facility owners.

26 December The US Congressional Research Service releases *Proliferation Control Regimes: Background and Status*. The report provides background and current status information on multilateral regimes established to restrict trade in nuclear, chemical, biological weapons and missile technologies, as well as to monitor their civil applications. Among the regimes referred to are the BWC, CWC and the Australia Group.

29 December The South Korean Ministry of Defence releases its biennial 'white paper' which warns that North Korea constitutes a grave threat to north-east Asia and the Korean peninsula, owing to its recent testing of a nuclear weapon [see 14 Oct] and its weapons of mass destruction. According to *The Korea Times*, the report states that North Korea is believed to possess 2,500 to 5,000 tons of toxic agents such as nerve, blister, blood and vomiting agents as well as tear gas, and is suspected of being able to produce such biological agents as anthrax, smallpox and cholera.

30 December In Baghdad, Saddam Hussein is hanged, having been sentenced to death in the trial relating to the killing of 148 Shia Muslims in the town of Dujail [see 5 Nov].

A week later, the Iraqi High Tribunal drops all charges against Hussein when it reconvenes for the trial relating to Operation Anfal involving the alleged use of chemical weapons against Iraqi Kurds [see 18 Dec]. Meanwhile, the trial resumes of Hussein's six co-defendants – including his cousin Ali Hassan al-Majid, also known as 'Chemical Ali' – who are charged with crimes against humanity.

January In the UK, emergency departments are not prepared for emerging biological threats and bioterrorism, according to research published in the *Journal of Infection*. By contacting all hospitals in the UK that are listed as having a major emergency department, the researchers – from the Department of Emergency Medicine, Manchester Royal Infirmary and the Clinical Research Group, Liverpool School of Tropical Medicine – concluded that with current facilities and procedures it is highly likely that an infectious agent will spread to staff and other patients in any future biological incident. The survey considered such matters as the availability of isolation facilities, independent ventilation systems, availability of a separate access from outside the departments, and the current policy of departments with regard to isolating patients.

3 January In Oregon, the Umatilla chemdemil facility destroys the last of its 14,246 8-inch sarin-filled shells [see 9 Aug]. According to the Chemical Materials Agency, the facility has destroyed more than 108,000 rockets, bombs, ton containers, and 8-inch projectiles, i.e. about twenty-four per cent of the agent tonnage originally stockpiled there, since commencing operations [see 16 Aug 04].

Three weeks later, the facility commences the destruction of its 155mm sarin-filled shells, which are the last type of sarin-filled munitions stored at the facility.

4 January The US Treasury Department issues an executive order freezing the US assets of three Syrian government entities that it accuses of helping to proliferate weapons of mass destruction. The entities in question are the Syrian Higher Institute of Applied Science and Technology, the Electronics Institute and the National Standards and Calibration Laboratory. The Treasury said the three state-sponsored institutions are subordinated to Syria's Scientific Studies and Research Centre, which was designated by President George Bush as proliferating weapons of mass destruction last year [see 28 Jun 05]. Treasury Under-Secretary for Terrorism and Financial Intelligence Stuart Levey says: "Syria is using official government organizations to develop nonconventional weapons and the missiles to deliver them... We will continue to take action to prevent such state-sponsored WMD proliferators from using the international financial system." The Centre says it promotes civilian research for Syria's economic development, including computerization of governmental enterprises.

5 January The US Department of Homeland Security announces plans to distribute \$1.7 billion for FY 2007 through five grant programmes designed to promote regional homeland security efforts, including countering threats from chemical and biological weapons. It will allocate \$746.9 million to the Urban Areas Security Initiative, \$509.3 million to the State Homeland Security Program, \$363.8 million to the Law Enforcement Terrorism Prevention Program, \$32 million to the Metropolitan Medical Response System and \$14.6 million to the Citizen Corps Program.

5 January In the USA, DuPont Inc announces that it will not now conduct final treatment of wastewater produced by the chemdemil of VX nerve agent at the Newport facility. The Army had selected DuPont to process up to four million gallons of hydrolysate and then to discharge the wastewater into the Delaware River. The plan faced strong opposition from environmental groups and from officials in Delaware and New Jersey. One month previously, seven organizations filed a lawsuit to block the transport of waste produced at the facility. Vice-President and General Manager for DuPont's Chemical Solutions Enterprise Nick Fanandakis says: "During our three-year evaluation of the [...] proposal, it has become increasingly clear to us that the approval process will be lengthy and arduous... Therefore, we believe it is in the best interests of New Jersey and DuPont not to proceed." [See also July]

6 January In Quito, at a press conference, Ecuadorian President Alfredo Palacio condemns the resumption by Colombia two weeks previously of its aerial spraying of glyphosate over the border area of the two countries, saying that it constitutes an act of chemical warfare [see also 24 Jul 05]. "This is the position I have set out to the great friend Alvaro Uribe with whom I have always had the best relations... Life must be respected and glyphosate spraying is a form of chemical warfare." Palacio reiterates that he will, during the next ten days, file charges against Colombia with the Organization of American States.

8 January The US Congressional Research Service releases *Nuclear, Biological, Chemical, and Missile Proliferation Sanctions: Selected Current Law*. The report – which updates previous versions released in July 2002, January 2003, February 2003 and October 2005 – sets out a brief description of legal provisions that require or authorize the imposition of economic sanctions against entities that violate US nonproliferation norms.

9 January In the UK House of Commons, responding to a written question as to what the policy reasons are for non-lethal spray type weapons not being routinely carried by British forces during operations, Armed Forces Minister Adam Ingram says: “Under the [CWC], non lethal spray weapons such as CS smoke may only be used for law enforcement, including domestic riot control purposes and are therefore unsuitable for use on many types of operations carried out by British forces.”

9 January In Brussels, the Council of the European Union releases its six-monthly progress report [see 14 Jun 06] on the implementation of the EU Strategy against the Proliferation of Weapons of Mass Destruction. Regarding BWC confidence-building measures, it states: “In order to set a good precedent for other States participating in the BTWC Review Conference [see 20 Nov 06], the EU Member States agreed to submit to the UN on a yearly basis CBM returns and by December 2006 to up-date the list of relevant experts and laboratories to which the UN Secretary General could resort in order to facilitate any investigation of alleged chemical or biological weapons production or use. Before the opening of the BTWC Review Conference, all 25 Member States have submitted their CBMs.”

9 January The US House of Representatives passes the 9-11 Commission Combating Proliferation Implementation Bill, which enacts several of the Commission’s unfulfilled recommendations to prevent terrorist attacks [see 22 Jul 04]. Amongst other things, it mandates universal inspection of air cargo and requires that all sea-cargo containers be screened for radiation before reaching US shores. It also calls for the establishment of a presidential office to coordinate the prevention of terrorism and of the proliferation of weapons of mass destruction.

10 January The Russian Federal Industry Agency (Rosprom) announces that the “operation of [Russia’s chemdemil] facilities continues and their capacity continues to increase” and that Russia has now destroyed nearly thirteen per cent of its 40,000 tonne stockpile. [See also 12 Dec 06]

Meanwhile, Mikhail Manin, the head of the Kirov regional government’s directorate for conventional problems, tells ITAR-TASS news agency that the Maradykovo facility has so far destroyed over 807.4 tonnes of poisonous substances and that the number of demilitarized munitions that have been subjected to hydrolysis is 3,257. The process of destroying 3,966 tonnes of poisonous substances as well as the munitions, he says, “will be completed in three months time, by April”.

10 January In the USA, the RU Sirius Show publishes an interview with a former psychiatrist at Edgewood Arsenal, Maryland, who had been involved in the testing of LSD, BZ and other such substances on Army volunteers in the 1960s. James S Ketchum, who was head of the psychopharmacology branch in 1963 and acting head of clinical research in 1966, recently released his memoirs *Chemical Warfare: Secrets Almost Forgotten*. He gives the following account of his work: “There was information indicating that, around 1960, the Soviet Union was importing vast quantities of contaminated rye from the satellite countries. This was interpreted as being indicative of

their interest in producing LSD, since there’s not much use for contaminated rye except that it contains ergot, which is a form of contamination [ergot is used to prepare lysergic acid, the raw material for LSD]. That made us think maybe they were having a big LSD development program of their own... I watched a number of people – actually, more than a hundred – going through the experience of having BZ... To describe the tripping in detail would take some time. In the book, I’ve documented an entire BZ trip over a hundred-hour period, including everything that was said and done... commanders wanted to know what would happen if this stuff were ever used in the field. So at first we set up an indoor type of situation, a sort of simulated command post with four soldiers in it.” [See also 22 Nov 06]

11 January In the US Senate, the Select Committee on Intelligence conducts its annual hearing [see 2 Feb 06] on ‘Current and Projected National Security Threats’ in both open and closed sessions. Director of National Intelligence John Negroponte characterizes Al-Qaida as “the terrorist organization that poses the greatest threat to US interests, including to the Homeland”. He continues: “Use of a conventional explosive continues to be the most probable al-Qa’ida attack scenario. The thwarted UK aviation plot last summer and the other major threat reports that we have been tracking all involve conventional bombs. Nevertheless, we receive reports indicating that al-Qa’ida and other groups are attempting to acquire chemical, biological, radiological, and nuclear weapons or materials.” The use of “proven tactics” is likewise emphasized in the assessment presented by FBI director Robert Mueller, who adds: “We also believe, if it can, al-Qa’ida will obtain and use some form of chemical, biological, radiological or nuclear (CBRN) material”. The FBI testimony also has this: “Few if any terrorist groups are likely to have the capability to produce complex biological or chemical agents needed for a mass casualty attack, but their capability will improve as they pursue enhancing their scientific knowledge base by recruiting scientists as some groups are doing. Currently, terrorist groups have access to simple chemical and biological agent recipes passed on at training camps or through the Internet and anarchist cookbook publications. Although a nuclear terrorist attack is the least likely to occur due to the required technical expertise and challenges associated with acquiring weapons usable material, the intent of terrorists to obtain this material is a continuing concern. The ability of a terrorist group to build and use a Radiological Dispersal Device (RDD) is well within the capability of extremists who already understand explosives if they are able to acquire radiological material.” The testimony goes on to say that, to counter the CBRN terrorist threat, the FBI WMD Directorate had been established in July “to consolidate the FBI’s WMD components”.

The Director of the Defense Intelligence Agency, Michael Maples, also gives open-session testimony on CBRN terrorism: “Some terrorist groups see employing chemical, biological, or radiological materials as low-cost, high-impact options for achieving their goals. Even an inefficient dissemination of these materials, or a hoax incident, could have a substantial psychological and economic impact. Reporting continues to indicate that non-state actors, specifically al-Qaida, continue to pursue CBRN options. Usama bin Ladin has openly declared his interest in such materials since the 1990s. The recent press claim made by the al-Qaida in Iraq leader asking for nuclear scientists to make ‘germ’ and ‘dirty’ weapons reinforces al-Qaida’s interest and desire to acquire CBRN materials. CBRN-related information is widely available, and if terrorists were to use unconventional materials in an attack, we believe they likely would use low-level biochemical agents such as ricin, botulinum toxin or toxic industrial chemicals such as cyanide. In addition to these low-level biochemical agents, al-Qaida exhibited an interest in

anthrax, mustard, and sarin prior to Operation ENDURING FREEDOM. We also judge that al-Qaida and other terrorist groups have the capability and intent to develop and employ a radiological dispersal device. At this time, we do not believe that al-Qaida has a nuclear weapon capability, although acquisition remains a goal; the acquisition of sufficient weapons usable nuclear material remains al-Qaida's key obstacle to an improvised nuclear capability."

Further, the DIA testimony addresses state-level proliferation of weapons of mass destruction (WMD), including CBW. North Korea is said to possess "a biotechnical infrastructure that could support the production of various biological warfare agents" in addition to "a longstanding chemical weapons stockpile of nerve, blister, blood, and choking agents". Iran is believed to be "pursuing development of biological weapons" and to have "a large and growing commercial chemical industry that could be used to support a chemical agent mobilization capability". China, the DIA believes, "continues to maintain some elements of an offensive biological weapons program". Russia "we judge [...] also continues research and development that could support its chemical and biological warfare programs". Both India and Pakistan "have the infrastructure to support biological and some aspects of their chemical warfare programs". Only one other country is singled out for mention of CBW capability: "Syria has pursued development of a strategic deterrent principally based on ballistic missile, chemical, and, to a limited extent, biological warfare programs, as a means of countering Israel's conventional force superiority. Syria's biotechnical infrastructure is capable of supporting limited biological agent development. DIA assesses Syria has a program to develop select biological agents. Syria has had a chemical weapons program for many years and already has a stockpile of the nerve agent sarin, which can be delivered by aircraft or ballistic missiles." The FBI testimony had also addressed WMD proliferation, stating that the US government "has identified 21 countries, of which Iran, North Korea and China are of greatest concern, with the capability to either develop WMD systems or acquire export-controlled WMD and dual-use items and sensitive technologies".

In regard to the mechanics of WMD proliferation, the DIA testimony states: "Non-governmental entities and individual entrepreneurs remain a concern. Past revelations regarding the A.Q.Khan network demonstrate how a complex network of suppliers with the requisite expertise and access to the technology, middlemen, and front companies can successfully circumvent international controls and support multiple nuclear weapons programs. Other examples of WMD-related supplier networks include those headed by Chinese national Q.C.Chen [see 21 May 97, 11 Jan 02, 9 May 02, 9 Jul 02 and 3 Jan 05], which operated various supplier organizations over the past several years".

11 January In Alexandria, Virginia, a federal court dismisses a lawsuit brought against *The New York Times* by the former government scientist who had been identified as a "person of interest" in relation to the investigations into the anthrax mailings [see 15 Oct 01]. Steven Hatfill had claimed that *Times* columnist Nicholas Kristof had defamed him by writing that investigators were focusing on "Mr Z," a government scientist. Kristof identified Hatfill in August 2002, saying Hatfill had acknowledged being Mr Z and felt he was receiving unfair treatment from the press. Judge Claude M Hilton holds that Hatfill could be considered both a "public official" and a "public figure" and therefore would have to meet a higher burden of proof than would a private figure in order to prevail in a defamation suit. Under that higher burden, a public figure bringing suit must demonstrate that the writer acted with "actual malice", i.e. either knowing that what they were writing was false or had "a high

degree of awareness" that it probably was. Hilton says that Hatfill was a public official because even after he left his formal government position, he continued to perform official functions as a federal contractor. Hatfill's lawyer, Mark A Grannis, says: "The opinion is more or less what we expected, given the judge's earlier statements... We will appeal, and we expect to prevail." Three months previously, a federal court ordered Kristof to disclose the identities of three confidential sources to Steven Hatfill whom Kristof relied on when writing his articles [see 20 Oct 06].

11 January In Winnipeg, Canada, researchers who used macaque monkeys to test the speed at which the 1918 flu virus is transmitted say they were struck by how much faster it spread and then killed compared to a contemporary flu strain, so reports the journal *Nature*. They discovered that the lungs of the monkeys became inflamed and filled with blood and other fluids and their bodies' defences went out of control. "Essentially people are drowned by themselves", says lead author of the study Yoshihiro Kawaoka from the University of Wisconsin. The experiment, which was supposed to last twenty-one days, was terminated after only eight days because the state of the monkeys' health deteriorated rapidly. The team concludes that atypical expression of the innate immune response might have been a critical determinant of the severity and outcome of infection by the 1918 virus: it had seemed to cause the macaque's immune system to produce immune protein at abnormally high levels that attacked the body – the so-called 'cytokine storm'. Co-author of the study Michael Katze from the University of Washington, who was involved in previous research with the virus on mice [see 5 Oct 06], says: "There was some surprise that it was that nasty... It was the robustness of the immune system that helped victimize them." The virus was reconstructed from tissues of victims from 1918. Besides the Public Health Agency's laboratory in Winnipeg, the virus exists only at the Centers for Disease Control in Atlanta. [See also 24 Oct 06]

12 January In Maryland, the Nazi War Crimes and Japanese Imperial Government Records Interagency Working Group (IWG) announces the release by the US National Archives and Records Administration of 100,000 pages of declassified records following a search for files relating to Japanese war crimes. The IWG also announces the availability of a new reference book entitled *Researching Japanese War Crimes Records: Introductory Essays* and a database of 1,400 documents – *Select Documents on Japanese War Crimes and Japanese Biological Warfare* – relating to Unit 731, and biological experiments and attacks during the Second World War.

14 January In Ventura, California, a Gordon Research Conference on *Chemical and Biological Terrorism Defense Integrating: Biodefense, Homeland Security and Basic Science* is scheduled to take place. The theme of the conference is responding to the threat of chemical and biological terrorism through a combination of proactive preparedness, real-time surveillance and a robust response system.

15 January In eastern Nangarhar, Afghanistan, during the arrest of a Taliban spokesman and two other men, the authorities uncover anthrax in a house, so reports Agence France-Presse, quoting the governor of the province. "We arrested [Mohammad Hanif] with two other people, recovered three Kalashnikovs, and some packets containing anthrax powder were also found with him," says Gul Aghar Sherzai. He does not, however, specify the quantity recovered or how it had been proven to be anthrax. According to Agence-France Press, police and intelligence officials declined to confirm Sherzai's statement.

15 January UK Foreign Office Minister Geoff Hoon launches the government's fourth [see 21 Dec 05] annual report on the Global Partnership. Covering 2006, the report states: "The priorities over the next year at Shchuch'ye are to: complete procurement and delivery to site of the main equipment for the second munitions destruction building, primarily with Canadian and Netherlands funding [see 13 Oct 05]; complete the railway and other key infrastructure projects, funded by Canada [see 7 Feb 05]; complete most of the main remaining elements of the electricity supply infrastructure, funded by the UK, Belgium, the Czech Republic, the Netherlands, Norway, Sweden and, subject to confirmation, the EU [see also 18 Jul 06]. In parallel, in partnership with Canada, MOD [Ministry of Defence] plans to select a new principal contractor for projects at Kizner, having agreed the necessary implementation arrangements with Russia. MOD aims also to select projects for implementation, and to have started project implementation, with funds from UK, Canada and other donors. Over the longer term, the MOD aims to complete all outstanding assistance projects at the Shchuch'ye CWDF in time for it to start operation, in accordance with the joint schedule agreed by the US and Russia, in mid-2008. Russian plans envisage completion of construction at Kizner and all remaining CWDFs in 2009. The MOD assistance programme at Kizner is also expected to be completed in this timescale, since it is not planned to provide assistance with the operation of CWDFs. No further UK assistance with CWD is currently planned beyond Kizner [see 18 Jul 06]... Contracts have been placed for a local public address system to warn of any dangerous incidents involving chemical weapons, and for the inter-site communications infrastructure linking key sites at Shchuch'ye. Both are being funded by Canada at a total cost of over £3 million... It is intended shortly to place a contract for the remaining equipment for the Shchuch'ye electricity supply system at a total cost of around £5 million, funded by the UK, Belgium, the Czech Republic, The Netherlands, Norway and Sweden. The EU has also agreed in principle to contribute towards this project. A further contract, for related construction and installation work, is planned to be placed early in 2007... Refurbishment of an electricity substation at Puktysh has been completed, on cost and ahead of schedule, mainly funded by New Zealand... The UK and Canada plan to hold a competition to jointly select a principal contractor to implement projects at Kizner. Other donors who wish to contribute at Kizner have been encouraged to do so through the joint programme. The facility is planned to be complete in 2009... The UK's aim from the start has been to help achieve the earliest practicable destruction of Russian CW stocks, by assisting with construction of necessary facilities and infrastructure. The aim is to complete most projects at Shchuch'ye during 2007, in parallel with preparing and starting projects at Kizner. The UK does not plan to provide further assistance following completion of projects at Kizner, which is planned to be the last of Russia's CWDFs to start operations [With regard to chemical and biological redirection projects] the priorities in this area over the next year and beyond are to work closely with the US, Canada and other donors to develop the programme of redirection in the FSU, covering both the biological and chemical areas, particularly in Georgia. As part of this work, MOD will consider a focus on improving biosafety and biosecurity, in order to reduce the risks of deliberate or accidental proliferation of dangerous pathogens. Specific priorities for 2007 are as follows: continue to support the progress of the IPI [Institute of Plant Immunity] in Georgia towards a sustainable future, by completing technical training and assisting the institute in identifying future core business [see 16 Dec 04 and Jan 05]; complete a second biological redirection project, at the G. Eliava Institute of Bacteriophage, Microbiology and Virology in Georgia [see 21 Dec 05]; continue engagement

with the Georgian Government and relevant institutes, addressing issues such as Intellectual Property Rights and commercialisation, which are essential to ensure the sustainability of the Georgian science sector; develop potential redirection projects at the Pavlodar Chemical Production Facility in Kazakhstan [see 12 Jul 01 and 16 May 02]; and take part in further UK/US training workshops for Iraqi scientists, and seek opportunities to fund further projects both in Iraq and Libya, in conjunction with the US... The UK will continue to support public outreach efforts, including through Green Cross."

15-19 January In Shrivenham, UK, there is a training course on declarations and inspections under the CWC at the Defence Academy [see also 17-26 Jan 06]. Attending the course, which is jointly organized by the UK government and the OPCW, are eighteen participants from the following CWC parties: Azerbaijan, Bangladesh, Bolivia, Cameroon, Côte d'Ivoire, Croatia, Jordan, Kazakhstan, Kuwait, Malaysia, Mexico, Morocco, Nigeria, Turkey, Turkmenistan, Philippines, Portugal and United Arab Emirates. The purpose of the course is to provide technical assistance to CWC parties in identifying chemical industry facilities declarable under Article VI of the Convention and in submitting required industry declarations. The course is part of an OPCW project that has been running since August 2001.

17 January In Washington DC, the Monterey Institute Center for Nonproliferation Studies hosts a workshop on *Identifying, Confronting, and Controlling Proliferation Threats*. Presentations made include: 'Incapacitating biochemical weapons: Science, technology, and policy for the 21st century', by Alan Pearson of the Center for Arms Control and Non-Proliferation; and 'Implementing UN Security Council resolution 1540: A risk-based approach', by Peter Crail of the Center for Nonproliferation Studies [see also 6 Dec 06].

19 January The US Government Accountability Office (GAO) transmits to Congress *Chemical and Biological Defense: Management Actions Are Needed to Close the Gap between Army Chemical Unit Preparedness and Stated National Priorities*, the purpose of which is to evaluate the preparedness of the Army's chemical and biological defence units. The report states: "Most Army units tasked with providing chemical and biological defense support are not adequately staffed, equipped, or trained to perform their missions... The readiness of Army chemical units – particularly in the National Guard and Reserve – is so low that it is doubtful whether most of these units can now perform their missions... [I]t is unclear whether Army chemical units affected by low readiness, but tasked with both wartime and homeland defense chemical and biological missions, can perform both effectively, especially given the lack of criteria to determine how many and which units are needed to support civil authorities in the event of multiple, near-simultaneous attacks on the United States... The low readiness ratings reflect critical personnel shortages, particularly in the key occupational specialty – chemical operations. Army chemical unit readiness is also being compromised by shortages of mission-critical equipment, such as decontamination equipment... Even though DOD considers responding to and mitigating the effects of WMD attacks on the United States to be a national priority, the Army did not consider funding the completion of doctrine for the Reserve component homeland defense mission to be a priority." It then sets out a number of recommendations, involving the implementation of plans that the Secretary of the Army should take to remedy the situation.

20 January In Tehran, the Organization of Doctors Against Nuclear Weapons – a Swedish non-governmental

organization – arrives, at the invitation of the Iranian Ministry of Foreign Affairs, to conduct four days of research on Iranian victims of chemical weapons.

22 January Russian Deputy Secretary of the Federal Agency for Industry Viktor Kholstov says: “Russia has [as of today] disposed of 3,623 tons of blistering toxic agents, and detoxified 4,005 tons of neuroparalytic toxic agents, which amount to over 19 percent of the overall stock of chemical weapons.” [See also 10 Jan]

22 January In the UK House of Lords, replying to a question as to the progress made during the Sixth BWC Review Conference [see 8 Dec 06] regarding verification measures, Foreign Office Parliamentary Under-Secretary of State Lord Triesman says: “[B]oth the United Kingdom and the European Union remain ready to support a verification mechanism, but I have to acknowledge that there are no signs that the international climate has changed enough to permit universal agreement on verification. I greatly regret that. That was certainly the case at the review conference, which [...] operates by consensus.” [See also 13 Dec 06]

23 January In Chile, the family of former Chilean President Eduardo Frei Montalva say that the recent discovery by researchers from the University of Ghent, Belgium, of traces of mustard gas in his remains indicate that he was murdered during the leadership of Augusto Pinochet, so reports BBC News Online. Frei, who served as president from 1964 to 1970, died in 1982 in hospital following a stomach illness, the official cause of death having been septicaemia. During commemorations marking twenty-five years since Frei’s death, his son, Eduardo Frei Ruiz-Tagle, Chilean president from 1994 to 2000 and currently a senator, says: “We have always said we want to know the truth and this is a substantial advance.” He says that in the near future the family plans to file a lawsuit to have the cause of death reclassified and hopes the authorities will order a murder investigation. According to the Argenpress news agency, Judge Alejandro Madrid, who has been presiding over the investigation into Frei’s death for the past five years [see 11 Oct 03 and 18 May 06], requested the laboratory results from the University of Ghent and is currently awaiting further medical reports.

24 January UK Home Office minister in charge of policing, security and community safety Tony McNulty announces that the government is increasing the number of controlled agents listed under the Antiterrorism, Crime and Security Act 2001 from 47 to 103. The list now includes 45 viruses, 21 bacteria, 2 fungi, 13 toxins and 18 animal pathogens such as polio, rabies, tuberculosis, avian flu and *E. coli*. McNulty says: “The terror threat is always changing and we must adapt to ensure it is combated effectively. As terrorists look for new ways to endanger life, we have to take action to be one step ahead... That is why we are extending the list of controlled substances to prevent terrorist groups using chemical or biological materials as terrorist weapons.” The restrictions require police to conduct background checks on scientists and others who work with listed agents and for government officials to inspect their laboratories. Regular audits of agent inventories are planned.

25 January In Tokyo, forty-eight Chinese civilians who claim they have suffered adverse health effects from chemical munitions abandoned by the Japanese Imperial Army file a lawsuit at the district court against the Japanese government [see also 1 Feb 04]. According to the Associated Press, the claimants – who say their disorders include cancer, skin irritation,

deteriorating eyesight, breathing difficulties and fatigue – are claiming 1.43 billion yen (\$11.8 million) in damages. The claimants, who are also seeking compensation for medical costs and loss of income, comprise 43 people who were present when construction workers ruptured metal drums containing toxic gas at a site in Qiqihar city, Heilongjiang province, along with five family members of a person who died following the incident [see 4 Aug 03]. [See also 24 May 04]

26 January In Garmisch-Partenkirchen, Germany, during a meeting on terrorism and security, Bavaria’s interior minister says the Bundeswehr should be made available to assist on German territory in the event of, amongst other things, the threat of a terrorist attack involving chemical or biological weapons. Guenther Beckstein points out, however, that he is not in favour of risking a constitutional crisis by overlapping the duties of the Bundeswehr and the police, but “exclusively a meaningful, mutual complement within the framework of precise, legally established limits”.

27 January From Pyongyang, KCNA news agency reports the USA as having “actively pushed forward the plan to study and mass-develop biological weapons by investing \$6.5 billion under the pretext of ‘combating terrorism by use of biological and chemical weapons’”. In this regard, it alleges that the USA is “keen to provoke the second germ and chemical war on the Korean Peninsula”. Two days later, the agency reports that “a large laboratory covering an area of 27,000 square feet is now under construction in Maryland which is expected to kick off experiments for germ warfare by use of such malignant germs as *bacillus anthracis* and *Yesinia pestis* from late this year or from the next year”. It claims that the recent collaboration between US and South Korean forces in chemical-warfare exercises [see 19 Sep 06] proves there is “an increasing danger of the outbreak of the second Korean war to be accompanied by biochemical warfare on the Korean Peninsula” [see 12 Sep 06]. The agency claims that the USA has “stockpiled 25,000 drums of toxic chemical substance of more than ten kinds in different regions including South Korea, Japan and Hawaii”.

KCNA also reports a spokesman for the “Korean National Peace Committee” as issuing a statement which repeats previous allegations that US forces used biological weapons, such as “cholera, typhoid and pest”, more than 700 times in over 400 places in the northern half of Korea from 28 January until late March 1952 and then continued using them, together with chemical weapons, until 1953 [see 13 May 06].

28 January The London *Observer* reports that the UK government plans to increase security reviews of foreign post-graduate students who study physics, metallurgy, microbiology, biophysics, and chemical, electrical and mechanical engineering through the Academic Technology Approval Scheme. An unidentified Foreign Office official is quoted as saying: “We do not want students who come to the UK to gain knowledge going home and using it as part of a nuclear weapons program... Overseas students from outside the EU who are pursuing courses will have to go through proper security vetting to check their credentials.” Students will be required to detail their previous studies and explain why they are coming to the UK, and they will be required to terminate their stay in the country once their visas have expired. The scheme will replace the current voluntary vetting scheme. Details are posted on the Internet by the FCO Counter-Proliferation Department.

29 January In Canberra, John Gee – the Deputy Director-General of the OPCW from 1997 to 2003, former member of UNSCOM [see 14 Feb 05], and Australian diplomat

with an expertise in disarmament and arms control issues – dies after a long fight against brain cancer. Gee resigned from his post as a special adviser to the US-led Iraq Survey Group in early 2004, advising the Australian government that the Group's mission to uncover WMD in Iraq had been fundamentally flawed [see 31 Aug 06]. Gee was Director of the Verification Division of the Provisional Technical Secretariat in the Preparatory Commission for the OPCW from 1993 to 1997.

Four days before he died, Gee was included in the Australia Day honours list as a member of the Order of Australia in recognition of his contributions in the field of international relations.

29 January In Cairo, senior military officials from seventeen Arab states convene for a ten-day conference at the headquarters of the Arab League to discuss the threat of weapons of mass destruction. In his opening address, Muwaffak Nassar, the official in charge of national security for the Arab League, says the aim of the conference is to discuss means of preventing the threat "in light of Israel's possession of different types of these weapons and the possibility of using them in the future".

29 January The Hamburg *Der Spiegel* runs an interview with Tyler Drumheller, the former head of European operations of the US Central Intelligence Agency, who gives further details [see 25 Jun 06] relating to the allegation by the Bush administration of the existence of Iraqi mobile biological weapons laboratories as a result of information received from a German BND source codenamed 'Curveball' [see 8 Sep 06]. Drumheller says: "[N]ever before have I seen the manipulation of intelligence that has played out since Bush took office. As chief of Europe I had a front-row seat from which to observe the unprecedented drive for intelligence justifying the Iraq war... There was no effort by the Germans to influence anybody from the beginning. Very senior officials in the BND expressed their doubts, that there may be problems with this guy. They were very professional. I know that there are people at the CIA who think the Germans could have set stronger caveats. But nobody says: 'Here's a great intel report, but we don't believe it'. There were also questions inside the CIA's analytical section, but as it went forward, this information was seized without caveats. The administration wanted to make the case for war with Iraq... I had assured my German friends that it wouldn't be in [the then Secretary of State Colin Powell's speech to the UN Security Council (see 5 Feb 03)]. I really thought that I had put it to bed. I had warned the CIA deputy John McLaughlin that this case could be fabricated. The night before the speech, then CIA director George Tenet called me at home. I said: 'Hey Boss, be careful with that German report. It's supposed to be taken out. There are a lot of problems with that'. He said: 'Yeah, yeah. Right. Don't worry about that'... In March 2004, a fluent German-speaking officer, one of my best guys, who had a scientific background went to Germany and worked for about two weeks. Finally, at the end of it, Curveball just sort of sat back and said: 'I don't have anything more to say'."

Asked about the reference in his book *On the Brink: An Insider's Account of How the White House Compromised American Intelligence* to "a very high-ranking source" – who told the CIA before the war that Iraq had no large active WMD programme – being the then Iraqi Foreign Minister Naji Sabri [see 23 Apr 06], Drumheller says: "I'm not allowed to say who that was. In the beginning, the administration was very excited that we had a high-level penetration, and the president was informed. I don't think anybody else had a source in Saddam's cabinet. He told us that Iraq had no biological weapons, just the research. Everything else had been destroyed after the first Gulf War. But after a while we didn't get any questions back. Finally the administration came and said that they were really not

interested in what he had to say. They were interested in getting him to defect. In the end we did get permission to get back to the source, and that came from Tenet.... We went on a sort of worldwide chase after this fellow, and in the end, he was in one place, and our officer was in another country asking for permission to travel. I called up people who were controlling operations, and they said: 'Don't worry about it. It's too late now. The war is on. The next time you see this guy, it will be at a war crimes tribunal'."

29 January In Geneva, on the seventh day of its eight-day 120th meeting, the Executive Board of the World Health Organization (WHO) adopts a draft resolution that reaffirms the goal to destroy the last known stocks of variola virus, whilst deferring a decision on the destruction date until at least 2010. The resolution, which will be reviewed by the World Health Assembly later in the year during its 60th session, states that the board "strongly reaffirms the decisions of previous Health Assemblies that the remaining stocks of variola virus should be destroyed" and calls on WHO officials to conduct a "major review" of smallpox research to help a future assembly "reach global consensus on the timing of the destruction of the existing variola virus stocks." The draft resolution, however, fails to recommend a date for the decision and leaves 2010 and 2011 as possible years in bracketed text. At its 59th meeting [see 22-27 May 06], the World Health Assembly was unable to agree upon the text of a resolution, amongst other things, to destroy the remaining stocks of variola virus in June 2010. Previously, the WHO Advisory Committee on Variola Virus Research recommended allowing research on the virus to continue [see 4-5 Nov 04].

29 January The US Chemical Materials Agency announces that it has now "safely destroyed 40 per cent of the nation's chemical blister and nerve agents" as a result of the combined efforts of chemdemil facilities currently in operation, former facilities on Johnston Atoll and in Maryland, and the Agency's Non-Stockpile Chemical Materiel Project. Acting CMA Director Dale A Ormond says: "This puts us in a good position to make the 45 per cent destruction milestone on or ahead of schedule... We are currently destroying the agent stockpiles in Indiana, Oregon, Arkansas, Alabama and Utah." Agents destroyed to date include sarin and VX nerve agents and mustard gas; munitions destroyed include bombs, projectiles, mortars, land mines, rockets, spray tanks and bulk containers. [See also 30 Aug 06]

29 January – 2 February In Port of Spain, Trinidad and Tobago, there is a regional emergency response course for CWC parties belonging to the Caribbean Community and Common Market (CARICOM). The course is jointly organized by the Interpol office in Trinidad, the Trinidad and Tobago Defence Force and the OPCW. Twenty-three representatives of the OPCW member states that are organizing the Cricket World Cup 2007 – Antigua and Barbuda, Dominica, Grenada, Guyana, Jamaica, St Kitts and Nevis, St Lucia, St Vincent and the Grenadines, and Trinidad and Tobago – attend the event and constitute the core regional emergency response team. The course focuses on the safe use of individual protective equipment, safe and efficient detection and reconnaissance activities in potentially contaminated areas, and effective decontamination. Its aim is to further enhance regional cooperation and facilitate the implementation of the CWC by participating countries.

31 January New Zealand Foreign Minister Winston Peters announces that the government has signed two protocols to the 1988 Convention for the Suppression of Unlawful Acts

against the Safety of Maritime Navigation, which create new offences relating, amongst other things, to the trafficking of weapons of mass destruction and the boarding of suspect vessels [see 10-14 Oct 05]. The protocols will enter into force upon ratification by the legislature. New Zealand will then be the twelfth state to adopt the protocols.

31 January In Manila, first responders have recently completed a three-week course on dealing with incidents involving weapons of mass destruction, so reports the US Embassy in Manila. The course, which was organized and sponsored by the Anti-terrorism Assistance Program (ATA) of the US Department of State, took place at the Philippine Public Safety College. In total, thirty participants attended the course from the following: Bureau of Fire Protection/Special Rescue Unit, Philippine National Police (PNP), Special Action Force, PNP Bomb Data Centre, Department of Health, Metro Manila Development Authority, Armed Forces of the Philippines, Makati City government, Philippine Coast Guard, Philippine Public Safety College, and Office of Civil Defence.

31 January The *Neue Züricher Zeitung* runs an interview with the former president of the European Court of Human Rights, who claims that he was poisoned during a visit to Moscow in late October, days before former KGB officer Alexander Litvinenko was taken ill in London with suspected poisoning [see 11 Nov 06]. According to the *Neue Züricher Zeitung*, Luzius Wildhaber, who retired one month previously, has been consistently criticized by Russia for upholding a series of complaints by Chechen human rights groups. Wildhaber says that on returning to Switzerland, two days after the day on which he believes he was poisoned, he collapsed and was subsequently diagnosed as having severe blood poisoning and was told he was minutes from death. Chairman of Russia's constitutional court Valery Zorkin, who was at the same three-day conference for constitutional lawyers, rejects the allegations thus: "As far as I remember, food poisoning took place in reality [...] it was merely food poisoning." Meanwhile, an unidentified spokesperson for the European Court of Human Rights says there was "nothing to indicate that the cause of Mr Wildhaber's illness – septicemia caused by staphylococcal infection – was suspicious".

31 January US President Bush issues a directive on medical countermeasures against weapons of mass destruction, which complements the *National Strategy to Combat Weapons of Mass Destruction* [see 11 Dec 02] and *Biodefense for the 21st Century* [see 28 Apr 04]. It states:

"[This directive will] ensure that our Nation's medical countermeasure research, development, and acquisition efforts: (a) Target threats that have potential for catastrophic impact on our public health and are subject to medical mitigation; (b) Yield a rapidly deployable and flexible capability to address both existing and evolving threats; (c) Are part of an integrated WMD consequence management approach informed by current risk assessments of threats, vulnerabilities, and capabilities; and (d) Include the development of effective, feasible, and pragmatic concepts of operation for responding to and recovering from an attack.

"[O]ur decisions as to the research, development, and acquisition of medical countermeasures will be guided by three overarching principles: (a) Our preparations will focus on countering current and anticipated threat agents that have the greatest potential for use by state and non-state actors to cause catastrophic public health consequences to the American people. (b) We will invest in medical countermeasures and public health interventions that have the greatest potential to prevent, treat, and mitigate the consequences of WMD threats. (c) We will link acquisition of medical countermeasures to the existence of

effective deployment strategies that are supportable by the present and foreseeable operational and logistic capabilities of Federal, State, and local assets following a WMD attack or other event that presents a catastrophic public health impact.

"Our Nation will use a two-tiered approach for development and acquisition of medical countermeasures, which will balance the immediate need to provide a capability to mitigate the most catastrophic of the current CBRN threats with long-term requirements to develop more flexible, broader spectrum countermeasures to address future threats. Our approach also will support regulatory decisions and will permit us to address the broadest range of current and future CBRN threats... The first tier uses existing, proven approaches for developing medical countermeasures to address challenges posed by select current and anticipated threats, such as traditional CBRN agents. Recognizing that as threats change our countermeasures might become less effective, we will invest in an integrated and multi-layered defense... Second tier activities will emphasize the need to capitalize upon the development of emerging and future technologies that will enhance our ability to respond flexibly to anticipated, emerging, and future CBRN threats. Importantly, this end-state will foster innovations in medical technologies that will provide broad public health benefit... In order to achieve our Tier I and II objectives, it will be necessary to facilitate the development of products and technologies that show promise but are not yet eligible for procurement through BioShield [see 21 Jul 04] or the Strategic National Stockpile [see 6 Jul]... We will support the advanced development of these products through targeted investments across a broad portfolio, with the understanding that some of these products may be deemed unsuitable for further investment as additional data becomes available, but the expectation that others will become candidates for procurement...

"The Secretary of Health and Human Services (Secretary) will lead Federal Government efforts to research, develop, evaluate, and acquire public health emergency medical countermeasures to prevent or mitigate the health effects of CBRN threats facing the US civilian population. The Department of Health and Human Services (HHS) will lead the interagency process and strategic planning and will manage programs supporting medical countermeasures development and acquisition for domestic preparedness... Not later than 60 days after the date of this directive, the Secretary shall establish an interagency committee to provide advice in setting medical countermeasure requirements and coordinate HHS research, development, and procurement activities... Not later than 60 days after the date of this directive, the Secretary shall establish a dedicated strategic planning activity to integrate risk-based requirements across the threat spectrum and over the full range of research, early-, mid-, and late-stage development, acquisition, deployment, and life-cycle management of medical countermeasures... The Secretary shall also establish an advanced development portfolio that targets investments in promising countermeasures and technologies that are beyond early development, but not yet ready for acquisition consideration. In order to realize the full potential for broad partnership with academia and industry, the Secretary shall ensure that HHS coordinates strategies and implementation plans in a manner that conveys integrated priorities, activities, and objectives across the spectrum of relevant Federal participants... The Secretary shall develop and implement a strategy to engage the unique expertise and capabilities of the private sector in developing medical countermeasures to combat WMD, and shall provide clear and timely communication of HHS priorities and objectives. The Secretary shall consider creating an advisory committee composed of leading experts from academia and the biotech and pharmaceutical industries to

provide insight on barriers to progress and help identify promising innovations and solutions to problems such as life-cycle management of medical countermeasures. The Secretary shall designate one office within HHS as the principal liaison for nongovernmental entities who wish to bring new technologies, approaches, or potential medical countermeasures to the attention of the Federal Government...

"The Secretary of Defense shall ensure that [...] continues to place a special focus on medical countermeasure development for CBRN threat agents because of the unique facilities, testing capabilities, and trained and experienced personnel within the Department...

"The Secretary of Homeland Security shall develop a strategic, integrated all-CBRN risk assessment that integrates the findings of the intelligence and law enforcement communities with input from the scientific, medical, and public health communities. Not later than June 1, 2008, the Secretary of Homeland Security shall submit a report to the President through the Assistant to the President for Homeland Security and Counterterrorism, which shall summarize the key findings of this assessment, and shall update those findings when appropriate, but not less frequently than every 2 years.

"The Secretaries of Health and Human Services, Defense, and Homeland Security shall ensure the availability of the infrastructure required to test and evaluate medical countermeasures for CBRN threat agents. (i) The Secretaries of Health and Human Services, Defense, and Veterans Affairs shall leverage their partnership to identify and accelerate research, development, testing, and evaluation programs for the acquisition of medical countermeasures for CBRN threats. (ii) The Secretary of Health and Human Services and the Secretary of Homeland Security shall develop effective and streamlined processes, including mutually agreed-upon timelines, to assist the respective Secretaries in jointly recommending that the Special Reserve Fund (SRF) be used

for the acquisition of specified security countermeasures. (iii) The Director of National Intelligence shall facilitate coordination across the intelligence community and, in coordination with the Attorney General, engage the law enforcement community to provide all relevant and appropriate WMD-related intelligence information to DHS for the development of the integrated CBRN risk assessment that is used in prioritizing the development, acquisition, and maintenance of medical countermeasures."

31 January The US Congressional Research Service releases *Chemical Facility Security: Regulation and Issues for Congress*. The report describes the statutory authority granted to the Department of Homeland Security (DHS) as granted under the Homeland Security Appropriations Act 2007. It then sets out the regulations proposed by the DHS last month, which require chemical facilities possessing amounts and types of substances considered by the DHS Secretary to be hazardous to notify DHS and undergo a consequence-based screening process, and identifies contentious issues related thereto. It also discusses several possible policy options for Congress.

31 January The US National Science Advisory Board for Biosecurity (NSABB) convenes in Virginia to receive classified presentations from the intelligence community on "the current counterterrorism and counterproliferation threats to the U.S." Its members also receive a memorandum on the BW aspects of the subject from Milton Leitenberg of the Center for International and Security Studies at Maryland.

This Chronology was compiled by Nicholas Dragffy from information supplied through HSP's network of correspondents and literature scanners.

Forthcoming Events

26 - 29 June

The Hague, Netherlands
49th session of the OPCW Executive Council

25 - 28 September

The Hague, Netherlands
50th session of the OPCW Executive Council

5 - 9 November

The Hague, Netherlands
12th session of the OPCW Conference of the States Parties.

20-24 August

Geneva, Switzerland
BWC Meeting of Experts, 2007

28 September – 1 October

Wiston House, Sussex, UK
Wilton Park Conference, *Countering CBW Proliferation*
Details on www.wiltonpark.org

8-9 November

Timisoara, Romania
NATO Advance Research Workshop
Biosafety and Biosecurity: Medical Countermeasures against Biological Agents and Weapons

18-19 September

The Hague, Netherlands
OPCW Academic Forum 2007
Details on www.opcw.org

1-2 November

The Hague, Netherlands
OPCW Industry and Protection Forum 2007
Details on www.opcw.org

27 - 30 November

The Hague, Netherlands
51st session of the OPCW Executive

Recent Publications

- Anathallee, Mohammad, Andrew Curphey, Nick Beeching, Simon Carley, Ian Crawford, and Kevin Mackway-Jones. "Emergency departments in the United Kingdom are not prepared for emerging biological threats and bioterrorism", *Journal of Infection*, vol 54 no 1 (January 2007), pp 12-17.
- Auerswald, David. "Deterring nonstate WMD attacks", *Political Science Quarterly*, vol 121 no 4 (Winter 2006-2007), pp 543-68.
- Batsanov, Sergey. "Approaching the 10th anniversary of the Chemical Weapons Convention: a plan for future progress", *Nonproliferation Review* vol 13 no 2, July 2006, pp 339-53.
- Bonin, Sergio. *International Biodefense Handbook 2007: An Inventory of National and International Biodefense Practices and Policies*, Zurich: ETH Center for Security Studies, 2007, 434 pp.
- Chevrier, Marie Isabelle. "Why do conclusions from the experts vary?", in Wenger & Wollenmann, *Bioterrorism* (2007), pp 119-51.
- Cooper, Melinda. "Pre-empting emergence: the biological turn in the war on terror", *Theory, Culture and Society*, vol 23 no 4 (2006), pp 113-35.
- Cordesman, Anthony H. "When to cry wolf, what to cry, and how to cry it", in Wenger & Wollenmann, *Bioterrorism* (2007), pp 155-78.
- Dando, Malcolm. "Why the concerns about chemical and biological warfare and terrorism now?", in Mika Kerttunen, *Uudet Unkat?*, Julkaisusarja, series 2, Research Reports [Helsinki National Defence University] no. 37 (2007), pp 107-21.
- Dando, Malcolm. "The impact of scientific and technological change", in Wenger & Wollenmann, *Bioterrorism* (2007), pp 77-89.
- Davison, Neil. "The early history of 'non-lethal' weapons", Bradford Nonlethal Weapons Research Project, *Occasional Paper* no 1, December 2006, 42 pp.
- Eubanks, Lisa, Tobin Dickerson, and Kim Janda. "Technological advancements for the detection of and protection against biological and chemical warfare agents", *Chemical Society Reviews*, vol 36 no 3 (January 2007), pp 458-70.
- Feakes, Daniel, and Graham S Pearson. "Achieving the outcomes of the Sixth [BWC] Review Conference", *Disarmament Forum* 2006 no 3, pp 37-45.
- Goot, Murray. "Questions of deception: contested understandings of the polls on WMD, political leaders and governments in Australia, Britain and the United States", *Australian Journal of International Affairs*, vol 61 no 1 (March 2007), pp 41-64.
- Guillemin, Jeanne. "The legacy of secret state programs", in Wenger & Wollenmann, *Bioterrorism* (2007), pp 13-37.
- Haider-Markel, Donald, Mark Joslyn, and Mohammed Al-Baghal. "Can we frame the terrorist threat? Issue frames, the perception of threat, and opinions on counterterrorism policies", *Terrorism and Political Violence*, vol 18 no 4 (January 2007), pp 545-59.
- Hammond, Edward: John Agwunobi. "Should the US and Russia destroy their stocks of smallpox virus?", *British Medical Journal*, vol 334 no 7606 (14 April 2007), p 774 and 775.
- Hellmich, Christina, and Amanda Redig. "The question is when: the ideology of Al Qaeda and the reality of bioterrorism", *Studies and Conflict and Terrorism*, vol 30 no 5 (April 2007), pp 375-96.
- Hunger, Iris, and Nicolas Isla. "Confidence-building needs transparency: an analysis of the BTWC's confidence-building measures", *Disarmament Forum* 2006 no 3, pp 27-36.
- Hunger, Iris. "More transparency for a secure biodefense", in Wenger & Wollenmann, *Bioterrorism* (2007), pp 179-96.
- Isla, Nicolas. "Strengthening the BWC's confidence building measure regime: a catalogue of recommendations", [University of Hamburg: Research Group for Biological Arms Control] *Occasional Paper*, no 3 (March 2007), 72 pp.
- Jensen, Lloyd. "Does negotiation have a future in controlling weapons of mass destruction?", *International Negotiation*, vol 11 no 2 (2006), pp 353-69.
- Jeremias, Gunnar, and Jan van Aken. "Harnessing global trade data for biological arms control", *Nonproliferation Review* vol 13 no 2, July 2006, pp 189-209.
- Kaliadin, Aleksandr. "In search of an effective coercive strategy to deter the use of weapons of mass destruction", *Russian Politics and Law*, vol 44 no 5 (September-October 2006), pp 18-34.
- Kelle, Alexander. "CBW export controls: towards regime integration?", in Daniel Joyner (ed.) *Non-Proliferation Export Controls: Origins, Challenges, and Proposals for Strengthening*, Burlington VT: Ashgate Publishing, 2006, pp 101-18.
- Ketchum, James. *Chemical Warfare Secrets Almost Forgotten: A Personal Story of Medical Testing of Army Volunteers with Incapacitating Chemical Agents during the Cold War (1955-1975)*, Santa Rosa CA: ChemBooks Inc, 2006, 360pp.
- Kosal, Margaret. "Terrorism targeting industrial chemical facilities: strategic motivations and the implications for US security", *Studies in Conflict and Terrorism*, vol 30 no 1 (January 2007), pp 41-73.
- Lavoy, Peter R. "Knowledge gaps and threat assessments", in Wenger & Wollenmann, *Bioterrorism* (2007), pp 93-118.
- Leitenberg, Milton. "Evolution of the current threat", in Wenger & Wollenmann, *Bioterrorism* (2007), pp 39-76.
- Lennane, Richard. "Blood, toil, tears and sweat: the Biological and Toxin Weapons Convention since 2001", *Disarmament Forum* 2006 no 3, pp 5-15.

- Lentzos, Filippa. "Managing biorisks: considering codes of conduct", *Nonproliferation Review* vol 13 no 2, July 2006, pp 211-26.
- Littlewood, Jez. "Out of the valley: advancing the Biological Weapons Convention after the 2006 Review Conference", *Arms Control Today*, vol 37 no 2 (March 2007), pp 12-16.
- Mauroni, Albert. "The future of chemical, biological, radiological, and nuclear defense", *Joint Force Quarterly*, no 44 (1st Quarter 2007), pp 74-78.
- McCamley, NJ. *The Secret History of Chemical Warfare*, Barnsley UK: Pen & Sword Books Ltd, 2006, 188pp.
- Meselson, Matthew [interviewed]. "Weapons lab", *Bulletin of the Atomic Scientists*, vol 63 no 1 (January/February 2007), pp 49-53.
- Millett, Piers D. "The Biological and Toxin Weapons Convention in context: from monolith to keystone", *Disarmament Forum*, 2006 no 3, pp 47-63.
- Moore, Wesley. "Aerial interdiction of WMD shipments", *Joint Force Quarterly*, no 44 (1st Quarter 2007), pp 34-38.
- Morris, Stephen. "Development of a recombinant vaccine against aerosolized plague", *Vaccine*, vol 25 no 16 (April 2007), pp 3115-7.
- Morse, Stephen S, Richard L Garwin and Paula J Olsiewski. "Next flu pandemic: what to do until the vaccine arrives?", *Science* vol 314, no 5801 (10 November 2006) p 929.
- Nixdorff, Kathryn. "Scientific and technological challenges to the BTWC", *Chaillot Paper* no 93, November 2006, pp 63-91.
- Okinaka, Richard, Talima Pearson and Paul Keim. "Opinions: Anthrax, but not *Bacillus anthracis*?", *PLoS Pathogens* vol 2 no 11, November 2006, pp 1025-27.
- Oñate, Santiago, Brigitta Exterkate, Lisa Tabassi and Erwin van der Borght. "Lessons learned: Chemicals trader convicted of war crimes", *Hague Justice Journal* vol 2 (2007) no 1, pp 23-42.
- Panofsky, Wolfgang. "A damaging designation [WMD]", *Bulletin of the Atomic Scientists*, vol 63 no 1 (January/February 2007), pp 37-39.
- Pearson, Graham. "The successful outcome of the Sixth BTWC Review Conference", in Graham S Pearson and Malcolm R Dando (eds.) *Strengthening the Biological Weapons Convention*, Review Conference Paper [University of Bradford: Department of Peace Studies] no.19, January 2007, 75pp.
- Proctor, Susan, Kristin Heaton, Tim Heeran, and Roberta White. "Effects of sarin and cyclosarin exposure during the 1991 Gulf War on neurobehavioral functioning in US army veterans", *Neurotoxicology*, vol 27 no 6 (August 2006), pp 931-39.
- Schmitt, Brian, Deborah Dobrez, Jorge Parada, Demetrios Kyriacou, Robert Golub, Rishi Sharma, and Charles Bennett. "Responding to a small-scale bioterrorist anthrax attack: cost-effectiveness analysis comparing preattack vaccination with postattack antibiotic treatment and vaccination", *Archives of Internal Medicine*, vol 167 no 7 (April 2007) pp 655-62.
- Sciarrino, Alfred. "The grapes of wrath and the speckled monster, part III: epidemics, natural disasters and biological terrorism – the Federal response", *Journal of Medicine and Law*, vol 10 no 2 (Summer 2006), pp 429-68.
- Seeveratnam, James I. "The Australia Group: origins, accomplishments, and challenges", *Nonproliferation Review* vol 13 no 2, July 2006, pp 401-15.
- Shoham, Dany, and Stuart M Jacobsen. "Technical intelligence in retrospect: the 2001 anthrax letters powder", *International Journal of Intelligence and Counterintelligence*, vol 20, pp 79-105, 2007.
- Sims, Nicholas A. "Strengthening structures for the Biological and Toxin Weapons Convention: options for remedying the institutional deficit", *Disarmament Forum* 2006 no 3, pp 17-26.
- Speckhard, Anne. "The new global jihad, 9-11 and the use of weapons of mass destruction: changes in mindset and modus operandi", *Democracy and Security* vol 2, July-December 2007, pp 287-98.
- Stark, Avishay-Abraham. "Threat assessment of mycotoxins as weapons: molecular mechanisms of acute toxicity", *Journal of Food Protection*, vol 68 (2005) no 6, pp 1285-93.
- Stephenson, Charles.. *The Admiral's Secret Weapon: Lord Dundonald and the Origins of Chemical Warfare*, Woodbridge (UK): The Boydell Press, 2006, 179 pp.
- Stone, Lt-Col Cristina M. "Air Force intelligence role in combating weapons of mass destruction", *Maxwell Papers* [Maxwell AFB: Air War College] no 39, November 2006, 32 pp.
- Stone, Richard. "Agent Orange's bitter harvest", *Science*, vol 315 no 5809 (12 January 2007), pp 176-9.
- Tabassi, L, and E van der Borght. "Chemical warfare as genocide and crimes against humanity", *Hague Justice Journal* vol 2 (2007) no 1, pp 5-22.
- Travisanto, Siro. "The 'Hittite plague', an epidemic of tularemia and the first record of biological warfare", *Medical Hypotheses*, vol 68 no 2 (March 2007), pp 446-49.
- Trull, Melanie, Tracey du Laney, and Mark Dibner. "Turning biodefense dollars into products", *Nature Biotechnology*, vol 25 no 2 (February 2007), pp 179-84.
- Wenger, Andreas. "Securing society against the risk of bioterrorism", in Wenger & Wollenmann, *Bioterrorism* (2007), pp 199-219.
- Wenger, Andreas, and Reto Wollenmann (eds.). *Bioterrorism: Confronting a Complex Threat*, Boulder and London: Lynne Rienner, 2007, 241 pp.
- Whitbread, George. "Offensive use of chemical technologies by US special operations forces in the global war on terrorism: the nonlethal option", *Maxwell Papers* [Air War College] no 37 (July 2006), 41 pp.
- Wright, Susan. "Terrorists and biological weapons: forging the linkage in the Clinton administration", *Politics and the Life Sciences*, vol 25 no 1-2 (15 February 2007), pp 57-115.
- Zanders, Jean Pascal. "On the eve of the 6th Review Conference of the Biological and Toxin Weapons Convention", *Chaillot Paper* no 93, November 2006, pp 11-31
- Zanders, Jean Pascal. "Verification of the BTWC: seeking the impossible or impossible to seek?", *Chaillot Paper* no 93, November 2006, pp 33-61.
- Zanders, Jean Pascal. "The European Union and the 6th Review Conference", *Chaillot Paper* no 93, November 2006, pp 93-118.

Book Reviews

The Creation of the Organisation for the Prohibition of Chemical Weapons. A Case Study in the Birth of an Intergovernmental Organisation, edited by Ian R. Kenyon and Daniel Feakes, (The Hague: T-M-C Asser Press, 2007 and distributed by Cambridge University Press, Cambridge in the United Kingdom and New York in the United States)

The establishment of the Organisation for the Prohibition of Chemical Weapons (OPCW) as the body tasked with implementing the Chemical Weapons Convention (CWC) in the last decade of the twentieth century represented a milestone in the annals of international arms control and disarmament. This new book charts the evolution of the OPCW as an intergovernmental organisation and has been published to commemorate the 10th anniversary of the entry into force of the CWC in 1997. It is written by those closely involved with the foundation of the OPCW and draws on their expertise to provide a case study that has ramifications beyond the chemical weapons area. The book will therefore be essential reading for students, researchers and practitioners interested in the diplomatic, legal and institutional issues associated with weapons of mass destruction, intergovernmental organisations and international relations.

The text itself is divided into fifteen chapters written by experts dealing with all aspects of the CWC and OPCW. In the final two chapters the book offers reflections on the first ten years of implementation of the Convention and the lessons learned from the overall experience. There is also a useful list of abbreviations/acronyms at the beginning, which together with the substantive chapters provides the reader with an accessible and comprehensive study of this important area.

In the opening chapter, Ian R. Kenyon, the First Executive Secretary of the Preparatory Commission of the OPCW, provides an overview of the subject of chemical weapons. This includes an outline of the key developments in the negotiation of the CWC to the point where a text was agreed in 1992 and a description of the scope of the prohibitions contained in the Convention. In the latter section, Kenyon highlights the importance of confidentiality and notes that the protection of information was a key issue in the negotiation of the CWC. This was subsequently covered by Article VIII, paragraph 5 of the Convention and the provisions of the Confidentiality Annex.

The next chapter written by both editors discusses why The Hague was chosen as the venue for the OPCW, while in chapter three Kenyon outlines the conceptual and practical issues surrounding the creation of the Preparatory Commission and the OPCW Technical Secretariat. There are fascinating insights to be found in both chapters as more obvious aspects such as financing and finding an appropriate location to house the administrative facilities are dealt with but so are potentially less obvious ones. For example, we are informed that among the issues requiring attention by the Executive Secretary from the outset were the introduction of staff benefits like health insurance, dealing with the language issue and the recruitment of linguists, and the need to provide appropriate information technology.

In chapter four, Johan Rautenbach and Lisa Tabassi deal with the Legal Aspects of the Preparatory Commission for the OPCW as an International Organisation. Paul A. Ryan follows in the next chapter with a consideration of the factors involved in negotiating the accommodation arrangements in different

phases through to the eventual construction of a dedicated OPCW building. In chapters six, seven and eight Ron G. Manley provides a detailed account of, respectively, the recruitment and training of inspectors, the preparations needed to conduct inspections, and the preparations for disarmament as required by Articles III, IV and V of the CWC. In all five chapters the analyses highlight both the expected and unexpected aspects encountered.

Daniel Feakes in chapter nine assesses the requirements to ensure the implementation of Article VI dealing with Peaceful Uses. Feakes notes that because the materials and equipment covered in the Convention can have dual-uses a key issue was to devise a verification arrangement that would delineate effectively between peaceful and non-peaceful uses, and allay the chemical industry over concerns about inspections and the confidentiality of information.

Chapter ten by Lisa Tabassi analyses both the negotiating history of Article VII relating to National Implementation Measures and the efforts undertaken to establish a network of National Authorities in each State Party as well as relevant national legislation. Tabassi notes the complexities related to implementation at the national level and the level of resources needed:

“Neither during negotiations of the Convention nor during the initiation of implementation support during the preparatory phase 1993-1997, was it ever imagined the duration or depth of support that would be needed by states for effective national implementation” (page 221).

The issues associated with Article IX entitled ‘Consultation, Co-operation and Fact-finding’ are considered by Ralf Trapp in chapter eleven. His study informs us that this Article occupied a fair share of the negotiating time in the Geneva Conference on Disarmament and subsequently during implementation of the CWC because “it deals with how to resolve concerns about possible non-compliance” (page 223).

In chapter twelve Ian Kenyon and Hassan Mashadi examine the rights of States Parties under Article X to request and to receive assistance and protection against the use or threat of use of chemical weapons. This is followed by a chapter written by Ian Kenyon and Sergei Kisselev dealing with the Cooperation in Peaceful Uses under Article XI. Both chapters provide the reader with an understanding of the negotiating history of these two Articles and the issues which continue to have significance in these contexts.

As noted earlier, the final two chapters reflect on the first ten years of implementation of the CWC and the role of the OPCW. In the first of these reflections Ralf Trapp steps back ten years to consider the issues at the First Session of the Conference of the States Parties in 1997. He then addresses key implementation areas relating to institution building, elimination of chemical weapons stockpiles and production facilities, verification, national implementation, assistance and protection, and universality of the CWC.

Finally, the lessons learned chapter is not attributed to any particular author but draws on the preceding account to provide concluding observations at this important juncture in the pursuance of a chemical weapons-free world. There is much to learn from this authoritative book.

Darryl Howlett, University of Southampton, UK

Book Reviews - continued

Dew of Death *The story of Lewisite, America's World War I Weapon of Mass Destruction*, Joel A. Vilenski, Indiana University Press, Bloomington and Indianapolis, 2005

Chemical Warfare in Colombia *The Costs of Coca Fumigation*, Hugh O'Shaughnessy and Sue Bradford, Latin America Bureau, London 2005

Joel Vilenski is not one of our 'usual suspects' as a writer on weapons of mass destruction, neither a military historian nor an arms control specialist. He is Professor of Anatomy and Cell Biology at Indiana University School of Medicine. He tells us that he was preparing a lecture on the treatment of a neurological condition, Wilson's disease, with British Anti-Lewisite (a chelating agent which assists in removing arsenic or other metals from the human body) when he realised that he would not be able to answer the question – what is Lewisite? He must have become fascinated by the subject as his research, although occasionally hindered by classification (and since 9/11, reclassification) of military records from both World Wars, as he has produced a comprehensive and very readable account of the history and continuing problems of this particular chemical warfare agent. The first person to pass acetylene gas through arsenic trichloride in the presence of an aluminium chloride catalyst spent the next few days in hospital and decided not to experiment further with the toxic results. However, Major Lewis and his team at the Chemical Warfare Service in 1918 found the record and successfully prepared what they named 'Lewisite'. They believed that this could be a war winning weapon but the war ended before supplies could be manufactured in quantity and shipped to the front. Subsequent research led to the view that, due to ease of hydrolysis, Lewisite would be less

useful as a chemical agent than first supposed. One useful fact, however, was that a mixture of lewisite and mustard had a lower freezing point than mustard alone, hence the subsequent preparation of munitions with this mixture. Lewisite only found battlefield use in World War II during Japanese campaigns in China. There is also some evidence of its use by Iraq against Iran and in smaller quantities by Egypt in Yemen and by Italy in Ethiopia. Large quantities were manufactured in various countries, including the United States and the Soviet Union and much of this was later buried or dumped at sea. Professor Vilenski catalogues the human cost of the different programmes, including the high casualty rates at the production plants at Willoughby, near Cleveland Ohio, in 1918 and during WW II at Chapayevsk in Russia; the large number of human 'volunteers' on whom the agent was tested and their fight for compensation; and the continuing environmental problems from improper disposal. This book should encourage us to ensure that the CWC achieves the removal of this kind of substance from the planet for good.

O'Shaughnessy and Branford have given their book a title which is somewhat misleading for readers of this journal as it does not cover chemical warfare as defined in the Chemical Weapons Convention. This is not to suggest that the topic of the human and environmental side effects of the campaign to eradicate the growing of coca plants in Colombia by aerial spraying of powerful herbicides is unimportant. When thousands of people living in the regions concerned are suffering damage to their health alternative strategies need to be sought. The alarming proposals for the use of bio-herbicides, such as *fusarium oxysporum* would surely be a breach of the Biological Weapons Convention, which, unlike the CWC, has no exception for law enforcement.

Ian R Kenyon

The *CBW Conventions Bulletin* (formerly the *Chemical Weapons Convention Bulletin*) (ISSN 1060-8095) is edited and published quarterly by the Harvard Sussex Program on CBW Armament and Arms Limitation. The goal is to provide information and analysis towards an effective multilateral treaty regime which will eliminate chemical and biological weapons and help prevent the exploitation of biomedical technologies for hostile purposes.

Editors

Matthew Meselson
Department of Molecular and Cellular Biology
Harvard University
7 Divinity Avenue
Cambridge, Massachusetts, 02138
United States of America
[Tel: 617-495-2264. Fax: 617-496-2444]

Julian Perry Robinson
SPRU - Science and Technology Policy Research
University of Sussex
Brighton BN1 9QE
England
[Tel: 01273-678172. Fax: 01273-685865]

Advisory Board

Will Carpenter, USA
Jonathan Dean, USA
Shirley Freeman, Australia
Ian Kenyon, UK
James Leonard, USA
Jan Medema, The Netherlands
Graham Pearson, UK
Abdullah Toukan, Jordan

Managing Editor

Carolyn Sansbury, Brighton, UK

Website

<http://www.sussex.ac.uk/Units/spru/hsp>

The Harvard Sussex Program is supported by the John D and Catherine T MacArthur Foundation, the Carnegie Corporation of New York, the UK Economic and Social Research Council, and the Sixth Framework Programme of the European Commission.