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THE SECOND CHEMICAL WEAPONS CONVENTION REVIEW CONFERENCE

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The Second five-yearly Review Conference for the 1993 *Convention on the Prohibition of the Development, Production, Stockpiling and use of Chemical Weapons and on Their Destruction*, commonly known as the Chemical Weapons Convention or CWC, was held in The Hague during 7 to 18 April 2008.¹ The CWC is the centre-piece of international efforts to prevent the hostile uses of toxic chemicals. The Second Review Conference had a significantly different atmosphere to that of the First Review Conference held in 2003.²

The Conference was a success in that it concluded a final report, but it struggled to complete this within the available time – and through a procedure that, among some, caused significant bad feeling. The length of the final report, including the 149-paragraph final declaration, means it cannot be simply summarized here. This article looks at the preparations for the Review Conference, the process that the Conference used to deal with these to reach a final declaration, the key issues that were raised, and reaches some conclusions as to what the result of the Review Conference means for the future. A table listing actions requested or recommended by the Review Conference follows this article.

The Second Review Conference was held in the World Forum Convention Centre (WFCC) – next door to the building housing the CWC's institution, the Organization for the Prohibition of Chemical Weapons (OPCW) – although many of the informal consultations were held within the OPCW building itself.

Phases of the Review Conference

Substantial preparations had been made for the Review Conference with an Open-Ended Working Group (OEWG), which first met in July 2006, subsuming the traditional 'Preparatory Committee' process that occurs in the equivalent treaties dealing with biological and nuclear matters. The OEWG, chaired by Ambassador Lyn Parker (UK), met 23 times, primarily to conduct consultations between states parties, and in addition received input from industry and non-governmental organizations (NGOs). It prepared draft language that many hoped would form the starting point for a final declaration from the Conference, although a significant number of outstanding issues remained. This draft language became known as the 'Parker text' or 'informal text'.³

As part of the review process, the OPCW Director-General published a 108-page background document 'Review of the Operation of the Chemical Weapons Convention since the First Review Conference',⁴ which provided a valuable overview of many aspects of the Convention. Additional input into the review came from the proceedings of two dialogue events that took place in The Hague within the context of the CWC Tenth Anniversary celebrations: the OPCW Academic Forum (18-19 September 2007) and the OPCW Industry and Protection Forum (1-2 November 2007).

At the opening of the formal meetings of the Review Conference itself,⁵ Ambassador Waleed El Khereiiji (Saudi Arabia) was appointed as Chair of the Review Conference and Ambassador Benchaâ Dani (Algeria) was appointed as Chair of the Committee of the Whole (CoW) – the committee that does a considerable amount of the work in compiling the draft final declaration.

The Conference held two days worth of 'General Debate' – the chance for states parties to make statements on the public record. This was followed by the 'Open Forum' – the chance for states parties to hear directly from non-governmental and industry representatives.⁶ The Review Conference then met behind closed doors, principally as the CoW and then in what became known as the 'other meeting', in attempts to reach consensus on its report.

The Conference itself started on a positive note. Some had anticipated a clash between the US and Iran in the General Debate, however neither made direct accusations against each other. The statements by both were softer than many had expected. While numerous differences remain between the two countries, the language used on this occasion had some of the rougher edges taken off it. When

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significant disputes have happened at previous meetings related to the CWC – and of those related to the Biological Weapons Convention – the two countries have often been key players on each side of the disagreement.

Efforts to reach agreement

When the Review Conference got down to the business of examining the CWC in the CoW (on the morning of its fourth day) there did not seem to be a clear agreement on what would be the best procedure. The ‘Parker text’ was taken as the starting point for discussion especially as a further iteration of this text was circulated by Cuba on behalf of ‘the NAM CWC States Parties and China’ with suggested deletions and insertions of new language.⁷ The committee met formally for only a short while before breaking into ‘informal consultations’ in a side room – considered a more flexible format than the rigidity of the main conference hall – to examine the Parker text on a paragraph-by-paragraph basis. As the consultations broke for lunch, after some two hours of discussion, paragraph 1 (out of 142 in this draft) had not yet been fully examined. After lunch the informal consultations moved to the Ieper Room in the OPCW Building where progress was made to paragraph 4. Each of these paragraphs contained many instances of bracketed text – a feature missing from the Parker text.⁸

The paragraph-by-paragraph ‘first reading’ was not completed until the second Monday evening. Despite the time taken there was a strong feeling, especially amongst NAM group states, that this effort was valuable. However, there was again a question mark on how to proceed. The following afternoon two ‘facilitators’ were appointed on the subjects of ‘general obligations’ and ‘destruction’ to try to find consensus language in these areas. The day after, four more were appointed.⁹ Each of the facilitated groups produced a revised text, although there was no time to produce a consolidated draft bringing them all together before the consultations finished just before 9pm on the evening of the second Wednesday. Considerable numbers of brackets remained in each of these revised texts.

The ‘other meeting’ and adoption of the final report

On the morning of the second Thursday, a selection of roughly 20 states parties were invited to meet separately from the CoW to try to reach agreement on some of the areas that remained in contention.¹⁰ This grouping initially met in the OPCW building during the morning but later moved to one of the side rooms at the WFCC. This rapidly became known within the OPCW building as the ‘other meeting’ although some called it the ‘expanded general committee’. The decision to hold the ‘other meeting’ had been taken in the General Committee meeting that morning.¹¹ At the same meeting, Ambassador Dani offered his resignation as chair of the CoW, but this was not accepted. The CoW continued to meet on the last two days, creating much ill will amongst delegations excluded from the ‘other meeting’ who felt all they were doing was marking time.

The ‘other meeting’ met through the day on Thursday, taking a short break around 8pm, then met in continuous session until rising at 4.10am on Friday, resuming at 9am. It then continued until 2am on Saturday morning,¹² at which

point it was announced that a text with one unresolved paragraph had been produced. It then took another two hours before a printed version of this text was available to delegates. The paragraph that was the final sticking point was the one that referred to UN Security Council resolution 1540. In the end the text simply referred to ‘the resolutions of the United Nations on combating terrorism’. After all the delegations present had a chance to quickly read the draft declaration but without any chance of amendment, the Conference adopted it, along with the rest of the final report, just after 6am.¹³ At least one State Party has publicly declared this procedure should not set a precedent.¹⁴

Issues within the Review Conference

Chemical weapons destruction

The states that declared the possession of chemical weapons at the time the CWC entered into force for them are Albania, India, Libya, Russia, the USA and ‘another state party’, not identified at its request but generally understood to be South Korea. Under the Convention, all chemical weapons should be destroyed within ten years after its entry into force, i.e., by 29 April 2007. The CWC allows this deadline to be extended by five years, but no further. Many delegations felt that it is premature to come to judgement on whether the possessor states would meet the 2012 deadline. Others believed that unless maximum pressure is placed as soon as possible on the possessor states – particularly the USA and Russia, the two with the largest holdings – there is less chance this deadline will be reached as the required resources will not be allocated otherwise. Privately most delegates assumed the deadlines were not likely to be met. Albania is the only declared possessor to have completed its destruction. The language in the final declaration on this subject was relatively weak.

Industry verification

Article VI of the Convention deals with inspections of industrial facilities – for both those producing chemicals listed on the Convention’s schedules and those producing non-scheduled chemicals. The latter of these, known as ‘Other Chemical Production Facilities’ (OCPFs) are currently the subject of particular attention. While the number of facilities handling scheduled chemicals is in the hundreds, the number of declared OCPFs is now over 4500 worldwide and it has been suggested that the geographical spread of OCPF inspections needs revision. For example, the Slovenia/EU statement said ‘the number of OCPF inspections should be increased where necessary’ and ‘verification resources should be used in accordance with the risk posed to the Convention’. The final declaration ‘confirmed that any changes in the frequency of OCPF inspections, if required, should take into account any refinements to the OCPF inspection regime or improvements in site selection methodology, and should be based on a thorough discussion and a decision of the policy-making organs’.

Riot-control agents and incapacitants

How the Convention relates to riot-control agents, has remained controversial since the negotiation of the CWC.¹⁵ Attempts by Switzerland, amongst others, to raise such subjects during the First Review Conference were effectively blocked by the USA and others. This time the issue was raised overtly in some statements, most simply noting the

prohibition on riot control agents as a method of warfare. Switzerland stated it 'fears that the uncertainty concerning the status of incapacitating agents risks to undermine the Convention. A debate on this issue in the framework of the OPCW should no longer be postponed'. The Swiss also put forward a formal national paper on the subject, the first time this has been done at a CWC Review Conference.¹⁶ Referring specifically to riot-control agents, Iran deplored 'the recent use of such non-lethal weapons as a means of warfare' without giving details of what it was alleging.

However, the final report makes no mention of incapacitants, even though draft language is said to have been prepared. It is also notable that Switzerland was not one of the invitees for the 'other meeting'.

Universality

Few specifics were offered on how to encourage 'difficult cases' to join the Convention. A few statements made reference to encouraging Israel to join the nuclear Non-Proliferation Treaty (NPT) as a step to encouraging regional uptake of the CWC in the Middle East. When the universality Action Plan was adopted in 2003, there were 40 countries identified as not party to the Convention; this is now down to 12, some of which are in the process of ratifying or acceding. For the first time, the states non-parties were named in the final document – Angola, the Bahamas, the Democratic People's Republic of Korea, the Dominican Republic, Egypt, Guinea-Bissau, Iraq, Israel, Lebanon, Myanmar, Somalia, and the Syrian Arab Republic.¹⁷ Guinea-Bissau deposited its instrument of ratification to the CWC on 20 May, shortly after the Review Conference.

National implementation

Some states made remarks about the Action Plan on National Implementation Measures and the improvements that had been made under it. Some made reference to specific measures they had introduced in their own countries. A few states specifically mentioned the benefits of incorporating the 'General Purpose Criterion' (GPC) into national implementing legislation. The GPC was nearly edited out of the final declaration, however the text in paragraph 22 (paragraph 9.22 in the final report) reads: 'The Second Review Conference considered the impact of developments in science and technology on the Convention's prohibitions. The definitions contained in Article II, in particular, of the terms "chemical weapons", "chemical weapons production facility", were found to adequately cover these developments and to provide for the application of the Convention's prohibitions to any toxic chemical, except where such a chemical is intended for purposes not prohibited by the Convention, and as long as the types and quantities involved are consistent with such purposes'.

Non-Proliferation

Some states parties wanted to see more emphasis on destruction issues over 'non-proliferation' in the period before destruction is complete. However, the NAM mark-up of the informal text struck out every reference to 'non-proliferation', seemingly at the suggestion of Iran. Other delegations noted that there is a significant difference between de-emphasising the concept and its total deletion from the text. Two references to the term remained in the final declaration.

Economic development

As with the parallel agreements on nuclear and biological matters, the balance between the provisions restricting transfers of materials and technology that might assist hostile uses and the provisions promoting peaceful uses was a source of controversy.

Threats from terrorism

The threat posed by terrorists or other non-state actors gaining access to toxic materials was raised by many delegations. While the CWC was widely recognised as not being an anti-terrorism treaty, the contribution to reducing this threat through effective controls on relevant materials and technologies, both nationally and internationally, was also widely recognised. Capacity building through the CWC was seen as valuable by many delegations.

Reflections

In general terms, the five-yearly Review Conferences of the other major arms control treaties are the key political decision-making bodies as other meetings of the states parties do not have the power to take substantive decisions. The situation is different with the CWC as most of its key decisions, such as the budget, are taken at the regular annual session of the Conference of the States Parties (CSP). The Review Conference, while technically a special session of the CSP, takes no budgetary decisions, although a decision in the final document could have budgetary influence. There were moments during the Second Review Conference in which issues raised might have been better handled by a regular CSP, or even by the Executive Council, leaving the Review Conference to focus on strategic issues that fundamentally affect the future of the regime to control chemical weapons.

Measuring 'success' or 'failure'

Before the Sixth Review Conference of the Biological Weapons Convention (BWC) held at the end of 2006 there were a number of academic/NGO articles written about what would constitute a 'success' or a 'failure' of that Review Conference. This was prompted in part by the failure and suspension of the BWC Review Conference in 2001. Very little, however, was written about what might constitute success or failure for the CWC equivalent. Perhaps this reflected an expectation that the 2008 CWC Review Conference would be an uncontroversial success.

With many of the subjects discussed at the CWC Review Conference being controversial, it was a measure of success that a final declaration was agreed.

If the Review Conference had not agreed a final document, what would the consequences have been? The OPCW would still exist and its activities would continue. If, however, the only document that might be achievable was one that was much weaker than that coming out of the First CWC Review Conference, would this be better or worse than having no document at all?

It could be argued that, in the 12 months before the Review Conference, the CWC and the various contexts it operates within were thoroughly examined. Events such as the Academic Forum and the Industry & Protection Forum allowed for the frank exchange of views about how the Convention interacts with the real world. The OEWG discussed all of the key areas

of the Convention's work. The Director-General's review document (see note 4) was a wide-ranging examination of substantive issues. The lack of a final declaration would not, therefore, have meant lack of review. The lack of a final declaration would, nonetheless, have been seen as a political failure. It would have been taken as a sign of lack of political commitment at a time when more progress around the world is both desired and needed on subjects such as universality and national implementation.

The changing nature of groupings in the CWC

Much of the work of Review Conferences is done through regional groups.¹⁸ The CWC has five such groups for which the titles are given within the Convention: Africa; Asia; Eastern Europe; Latin America and the Caribbean (GRULAC); and Western European and Other States (WEOG), although the CWC itself does not define which states fall within which group.¹⁹ In both the First and the Second Review Conference the only CWC regional group to have made a collective statement was the African group.

It is clear that a number of states find it more productive to carry out policy coordination through NAM arrangements rather than through the regional structures of the CWC. This is mirrored by continuing activity in the WEOG. The European Union is also emerging as a more significant collective entity with most of its members in the WEOG, but with some (including Slovenia, the then holder of the EU Presidency) outside. With only two effective operational groupings in the Conference, any issues that NAM and WEOG members disagreed upon became polarized relatively quickly

Conclusions

The Review Conference succeeded in reviewing the Convention and concluding a final declaration, but it did so with a struggle. In the aftermath of the event, it is worth asking how could a Conference with so much preparation end up in such a situation? Answering this will be vital to prevent a repeat of what happened this time. Some delegates, from the NAM group in particular, suggested that the text that was presented at the start of the Review Conference emerged from a process in which they did not have full participation. Delegates from Western states held the opposite perspective, believing that NAM views expressed in the preparatory process were fairly reflected in the Parker text. This disparity in perception was a key contributor to the divide between states parties in the early stages of the Conference. The use of small groups to hammer out agreed text in areas of contention is a tactic used in many negotiating situations. However, this is normally done on discreet subjects with only those states with particular interest in each subject participating and usually only during the penultimate evening of the meeting. The 'other meeting' was different to this – the invited states debated all of the subject areas in the final declaration for some 30 hours – leaving the states not invited to feel left out of the process. While there was also a small group of states that met privately to help finalize the declaration of the First Review Conference, this did not cover so much of the text.

When mention was made of the difficulties of coming to agreements on elements of text, the name of the delegation that came up more often than any other was that of Iran.

However, the activities of this delegation were not the only factors in making this Review Conference the way it was. This Conference was more politicized than earlier meetings, which found pragmatic solutions to real problems. Perhaps this comes from realisation that the destruction period is coming to an end – although not rapidly enough for some – and that the OPCW will be inevitably changed because of this.

References and Notes

1. The OPCW has a web page dedicated to the Second Review Conference which can be found at <http://www.opcw.org/rc2/>. An NGO resources page can be found at <http://cwc2008.org/>. The author's daily reports from the Review Conference can be found at <http://www.cbw-events.org.uk/cwc-rep.html>. An additional blog on relevant issues can be found at <http://fas.org/blog/cw/>.
2. A report of the First Review Conference appears in *The CBW Conventions Bulletin*, 60 (June 2003), pp 1-5.
3. The Parker text was circulated to states parties as OPCW document RC-2/CRP.1, dated 31 March 2008. This is not considered to be a public document and so is not available on the OPCW website.
4. The Director-General's review was circulated as document RC-2/S/1, 31 March 2008.
5. The Review Conference was preceded by a legally separate meeting, meaning that it did not start until Monday afternoon. Each CWC Review Conference is legally a 'special session' of the Conference of the States Parties (CSP). In order to ensure fair allocation for officers of sessions of the CSP, these officers – such as Chairman, Vice-Chairmen, etc. – are taken from the five regional groups in strict rotation. CWC Article VIII, paragraph 15 requires 'At the beginning of each regular session, [the CSP] shall elect its Chairman and such other officers as may be required. They shall hold office until a new Chairman and other officers are elected at the next regular session'. Thus, Ambassador Noureddine Djoudi (Algeria), having been appointed Chairman of the Seventh Session of the CSP held at the end of 2002, was Chairman of the 2003 Review Conference. Once the pattern of annual regular sessions of the CSP was established, rotating CSP chairmanship between five regional groups would have led to successive five-yearly Review Conferences being chaired by members of the same regional group. This would have breached the spirit of 'equitable geographical distribution'. Amending the rules of procedure to make the rotation of appointments of officers of Review Conferences ('Special Review Sessions' in the words of the rules) distinct from rotations for the regular sessions of the CSP resolves this difficulty. This was done in the separate session held on Monday morning.
6. On Wednesday afternoon the Review Conference was suspended to allow the Open Forum to take place in the Ieper Room of the OPCW building. Three themes were followed – 'Creating a more secure world through the Chemical Weapons Convention', 'Peaceful chemistry' and 'The impact of science and technology on the CWC verification regime'. The presentations are available via the NGO resources website (see note 2). The Open Forum was a chance for NGOs to address delegates in somewhat the same manner as happens in the NGO side events during the BWC meetings in Geneva. Indeed, the Open Forum had more attendees than is usually possible in the Geneva lunchtime meetings. An NGO lunch with the Director-General provided a useful opportunity for interaction of a sort

- that is available in Geneva through the NGO dinners with the Chairman/President; however, there is always the challenge that this sort of interaction is most productive when there is a relatively small number of participants. Nevertheless, there is still much that could be done to make the CWC/OPCW more 'NGO-friendly'.
7. The NAM/China mark-up of the Parker text was circulated to states parties as OPCW document RC-2/CRP.2, dated 8 April 2008. This is not considered to be a public document and so is not available on the OPCW website. Owing to the short time that was available to prepare this mark-up, it was not possible to make it a consensus text of the NAM member states as opposed to a compilation of proposed amendments.
 8. A traditional method of international negotiation is to put text for which there is no agreement between square brackets and there can sometimes be multiple versions of texts in brackets. A difficulty can be that, once there is one pair of brackets in a text, they can proliferate quickly.
 9. The full list of facilitators was: General obligations, Amb. Maarten Lak (Netherlands); Destruction, Amb. Jorge Lomónaco Tonda (Mexico); Articles X and XI, Amb. Luiz Filipe de Macedo Soares (Brazil); Article VI, Amb. Abu Algasim Idris (Sudan); Functioning of the organisation, Mr Martin Strub (Switzerland); and National implementation, Amb. Werner Burkart (Germany).
 10. The known 'invitees' were: Brazil, Canada, China, Cuba, Czech Republic, France, Germany, India, Iran, Japan, Mexico, Netherlands, Pakistan, Russia, Slovenia (EU Presidency), South Africa, Sudan, UK and USA. The meeting was chaired by Saudi Arabia as it held the chair of the Review Conference. Algeria, as it held the chair of the Committee of the Whole, also participated (although Ambassador Dani stayed in the meetings of the CoW), as did the OPCW Director-General.
 11. The General Committee is the body that takes administrative decisions for the Conference.
 12. A brief plenary session just before midnight on Friday formally 'stopped the clock' so that the meeting would still officially finish that day. The times given here are local times rather than official Conference times.
 13. *Report of the Second Special Session of the Conference of the States Parties to Review the Operation of the Chemical Weapons Convention (Second Review Conference) 7–18 April 2008*, OPCW document RC-2/4, dated 18 April 2008. The final declaration is the section under agenda item nine.
 14. Philippines, *Statement by the Republic of the Philippines at the Second Special Session of the Conference of the States Parties to Review the Operation of the Chemical Weapons Convention (Second Review Conference)*, OPCW document RC-2/NAT.21, dated 18 April 2008.
 15. Riot-control agents are a subset of what were called "incapacitating agents" during the negotiation of the CWC: see *Health Aspects of Chemical and Biological Weapons: Report of a WHO Group of Consultants*, Geneva: WHO, 1970, p.12, and *Public Health Response to Biological and Chemical Weapons: WHO Guidance*, Geneva: WHO, 2004, pp.143-4 and 180-83. The key difference between incapacitants and riot-control agents is that RCAs cause effects that encourage those exposed to try to move away from the source while incapacitants can so disable those exposed that they are unable to remove themselves from the source, leading to uncontrolled doses of the agent being received with possible unintended consequences.
 16. Switzerland, *Riot Control and Incapacitating Agents under the Chemical Weapons Convention*, OPCW document RC-2/NAT.12, dated 9 April 2008.
 17. The list is the non parties that are also members of the United Nations.
 18. A number of international treaties have their own arrangements for regional groups, through which many of the administrative arrangements of meetings are carried out. For example, in the cases of the 1972 BWC and the 1968 nuclear Non-Proliferation Treaty (NPT) the regional groupings are: Western European and Other States (WEOG); Eastern European States; and the Non-Aligned (NAM). The regional groups for the 1996 Comprehensive Nuclear-Test-Ban Treaty (CTBT) are: Africa; Eastern Europe; Latin America and the Caribbean; the Middle East and South Asia; South-East Asia, the Pacific and the Far East; and North America and Western Europe. In most cases, regional groupings are primarily constituted to assist in assigning rotations of official positions and to separate voting for regional representatives on committees, etc, rather than as forums for aggregating views on substantive matters.
 19. The titles of these groups are given in Article VIII, paragraph 23 in order to ensure 'equitable geographical distribution' for membership of the OPCW Executive Council. These regional groups are then used for similar purposes in other aspects of CWC implementation. The CWC was concluded in the immediate post-Cold War era when there was a general perception that the eastern bloc, western bloc and non-aligned groupings traditionally used in arms control agreements were going to be a thing of the past.

This article draws on the author's daily reports from the Review Conference that were made possible with financial support from the Ploughshares Fund www.ploughshares.org. Copies of the daily reports are available on the CBW Events website at www.cbw-events.org.uk/cwc-rep.html and cwc2008.org.

Outline of Actions Requested or Recommended by the Second Review Conference

Sub-para ag. it.9	Recommendation/Request	Timeframe specified
18	The Second Review Conference encouraged [the Secretariat, Director-General, policy-making organs and all States Parties] to make full use of all available opportunities and resources to pursue [universality] at all levels.	None
23	... requested the Secretariat to keep the Council informed of progress [on the submission of Article III declarations], and encouraged the Secretariat and the States Parties to provide assistance to present and future States Parties, if requested, in the preparation and submission of timely declarations and amendments.	None
24	.. reiterated the call of the First Review Conference upon the Council to reach agreement on the declaration criteria for former chemical weapons development facilities ... with a view towards promoting confidence among States Parties.	None
34	... encouraged States Parties that are in a position to do so to assist other States Parties, at their request, in the preparation and submission of declarations and amendments [under Article III].	None
36	... requested the Council, assisted by the Secretariat, to address the issue of new discoveries of old chemical weapons. ... encouraged close cooperation among those States Parties concerned in relation to future discoveries of old or abandoned chemical weapons including over any necessary research and development to ensure the safe recovery and destruction of such weapons.	None
40	... requested the Council to decide on the nature of continued verification at those facilities and to consider proposals for recommendations or decisions that may be needed.	None
45	... encouraged the Secretariat to continue these efforts [to assist in the submission of accurate declarations], in close consultation with the States Parties, and to provide appropriate assistance upon request to any State Party with a view to meeting its declaration obligations.... also requested the Secretariat to ensure that the latest information provided by States Parties in their declarations is accurately captured, so that the most up to date information is used for planning inspections.	None
46	... encouraged States Parties' National Authorities to avail themselves of [the option of submitting declarations electronically through the Verification Information System]. ... requested the Secretariat to provide them, on request, with appropriate training and assistance.	None
48	... requested the Council to continue to monitor the optimisation process to ensure that the stringent verification requirements of the Convention are strictly preserved. ... requested the Secretariat to continue to look for further improvements, particularly as additional chemical weapons destruction facilities come into operation in the years ahead, and also in light of the accumulated experience of the range of industrial inspections.	None
49	... welcomed the recent Note by the Director-General on [the recent trial of sampling and analysis during Schedule 2 inspections] (S/688/2008, dated 10 April 2008), encouraged States Parties to review this carefully, and encouraged the Council to discuss this matter further, as appropriate.	None
50	... requested the Council to resume, ... the consultations on the unresolved issues pertaining to the verification regime of the OPCW with the view of developing appropriate recommendations.	"as a matter of priority"

Sub-para ag. it.9	Recommendation/Request	Timeframe specified
58	The Second Review Conference noted that the Director-General, in his Note (WGRC-2/S/1, dated 27 November 2007 and Corr.1, dated 25 January 2008) refers to developments in science and technology since the First Review Conference and requested the Council to consider these issues.	None
59	... encouraged States Parties to share their experiences about the most effective ways to implement the Convention, and to cooperate in the resolution of issues they may encounter in their implementation of these provisions and measures. It encouraged the Secretariat to continue to provide technical assistance to States Parties, on request, for the submission of Article VI declarations, the receipt of OPCW inspections, and other technical questions that may arise in the implementation of provisions related to activities not prohibited under the Convention. It also encouraged further development of existing fora, such as the annual, regional and subregional meetings of National Authorities, to facilitate exchanges on specific aspects of implementation including the early identification of annual themes.	None
61	... encouraged the Secretariat to continue to develop and periodically update existing databases on declarable chemicals, under the guidance of the Council, ... requested that, as recommended by the Scientific Advisory Board, the OPCW Declaration Handbook should provide references to the various CAS numbers corresponding to the entries in the Schedules.	None
62	... requested the Secretariat to include, in the Declaration Handbook, a standard form for the submission of such notifications [for facilities which cease working with Schedule 2 or 3 chemicals].	None
63	[re low concentrations in relation to Schedule 2A/2A*] ... urged the Council to resume work promptly, with the support of the Secretariat, towards the earliest resolution of the issue in accordance with the requirements of the Convention (Verification Annex, Part VII, paragraph 5).	"promptly"
64	... reiterated the request made by the Council for early resumption of consultations on the OCPF site selection methodology with a view to reaching a decision by States Parties, in accordance with Part IX, paragraphs 11 and 25, of the Verification Annex to the Convention.	None
65	... requested the Director-General to examine the options for achieving the above objectives [directing OCPF inspections towards facilities of greater relevance] without imposition of any additional declaration obligations and strictly in accordance with the relevant provisions of Part IX of the Verification Annex of the Convention and to submit his findings to the Council for its consideration.	None
67	... encouraged the Council and the Secretariat to work toward continued progress in those areas identified by paragraph 7.71 of the Report of the First Review Conference (RC-1/5, dated 9 May 2003), as well as: (a) improving OPCW classified verification reporting ...; (b) improving the submission and handling of industry declarations ...; (c) consideration of the report to be produced by the Secretariat on the further development of the OCAD.	None
71	... requested the Secretariat to continue working with the States Parties concerned on analysing persisting discrepancies between exporting and importing States Parties, with a view to identifying the factors that cause problems, and to recommend possible solutions.	None
74	... encouraged the States Parties and the Secretariat to continue to support the implementation of the decision of the Conference (C-12/DEC.9, dated 9 November 2007) to achieve full implementation of Article VII obligations.	None
78	... encouraged strengthened learning, communication, and mutual cooperation through further engagement by the Secretariat, by National Authorities, and as appropriate, with parliamentary representatives. ... encouraged the Director-General to make further recommendations in this regard to the Council as necessary.	None

Sub-para ag. it.9	Recommendation/Request	Timeframe specified
79	The Second Review Conference encouraged States Parties and the Secretariat to continue to consult in order to enhance further the utility and effectiveness of these programmes [for implementation support], and it requested the Secretariat to evaluate the programme and report to the Council.	None
80(b)	... Requested the Secretariat to keep current a progress report [on status of Action Plan on national implementation] on the external server of the OPCW;	None
93	... called on the Secretariat to evaluate the effectiveness of current programmes undertaken under Article X and to assess to what extent and how efficiently they meet the current and future needs of States Parties.	None
94	... welcomed the fact that some States Parties had taken measures to minimise [the risk of attack or other incidents at chemical facilities] and encouraged States Parties to exchange experiences and discuss related issues.	None
97	... urged all States Parties, particularly those that have not yet done so, to make their annual submissions of information in a timely fashion, and requested the Secretariat to assist States Parties with the timely completion of their submissions.	"timely"
98	... noted the progress made on setting up the OPCW data bank on protection and encouraged the Secretariat to update the information available on it regularly concerning assistance, protection equipment and knowledge offered by States Parties. ... requested the Secretariat to report periodically to the Council on the content of the data bank and its use.	"regularly" "periodically"
99	... requested the Secretariat to review and keep up to date its current lists of experts, both from within the Secretariat and from States Parties (including those in the Protection Network).	None
100	... requested the Secretariat to make proposals to the Council on how to make best use of these resources, taking into account the options for assistance and protection made possible by advances in science and technology.	None
102	... urged all States Parties that have yet to make offers of assistance to the OPCW to do so as required by paragraph 7 of Article X. ... also encouraged those States Parties that have made offers to ensure that they are up to date. ... requested the Secretariat to evaluate the assistance offers already made in order to identify complementarities and synergies and to engage with States Parties to identify what further offers can be made to help optimise the use of OPCW resources.	None
103	... encouraged the Secretariat to build on the experience gained from such programmes as the three-year training project in Central Asia. ... also encouraged the Secretariat to maintain the flexibility to address capacity building for public events where the consequence of chemical attack could be considerable for States Parties. ... requested the Secretariat to keep the policy-making organs informed about the status of pledges for assistance by States Parties and about any problems requiring attention and resolution.	None

Sub-para ag. it.9	Recommendation/Request	Timeframe specified
105	The Second Review Conference noted the Scientific Advisory Board's work on the analysis of bio-medical samples and requested the Director-General to present a proposal to develop this capability as foreseen by the Council at its Forty-Fourth Session (EC-44/2, dated 17 March 2006).	None
106	... requested the Council to monitor further development of an Assistance Response System to facilitate responses to requests for assistance and protection; ... noted the importance of exercises to ensure effective coordination with States Parties and other international agencies in an emergency-response situation, and urged the Secretariat to apply the lessons learned from them and to keep the Council updated on this matter.	None
108	... requested the Conference of the States Parties to ensure the availability of adequate resources to be placed at the disposal of the Director-General to enable him to take emergency measures of assistance to victims of use of chemical weapons in accordance with paragraph 11 of Article X.	None
109	... encouraged States Parties to make equipment related to the means of protection against the use of chemical weapons available, without undue restrictions, to other States Parties.	None
116(c)	The Secretariat, in consultation with States Parties, is requested to continue to review and develop relevant programmes for requesting States Parties [for assistance and national capacity-building]	None
116(h)	... encouraged the OPCW to continue to develop relations and partnerships as appropriate with relevant regional and international organisations including international organisations related to chemical safety, chemical industry associations, the private sector and civil society,	None
125	... noted that no agreement had yet been reached on the issue of developing and implementing guidelines regarding the long-term handling of confidential information. It recommended that the Secretariat make a report to the Council proposing solutions before the next Conference.	"before the next Confer- ence"
132	... encouraged States Parties generally to consider supporting the work of the Scientific Advisory Board by making voluntary contributions to the Scientific Advisory Board trust fund.	None
133	... requested the Council, through a meeting of governmental experts open to all States Parties, to consider the report by the Scientific Advisory Board which the Director-General had forwarded to the Second Review Conference.	None
134	... in order to facilitate consideration of the specialised advice the Director-General provides to the policy-making organs and to States Parties on the basis of the advice he receives from the Scientific Advisory Board, invited the Director-General to provide considered advice to the Council on how to enhance the interaction between the Scientific Advisory Board and States Parties as well as the policy-making organs, making best use of governmental experts	None
136	... encouraged the development of such cooperation [with all CWC stakeholders], with due regard to the role and responsibilities of States Parties and their National Authorities, on the broadest possible geographical basis.	None

Sub-para ag. it.9	Recommendation/Request	Timeframe specified
137	The Second Review Conference invited States Parties to consult and cooperate both bilaterally and regionally on ways to prevent terrorists from acquiring and/or using chemical weapons.	None
140	... noted that it will be important for the Secretariat to retain necessary chemical weapons-specific expertise in order to address issues related to the OPCW's activities. ... recommended that the Director-General take these considerations into account when assessing and developing future staffing plans	None
142	... recommended the Council to consider the possible development of guidelines for the offers and utilisation of voluntary funds contributed by individual States Parties and regional and other groups.	None
145	... reaffirmed the need for Secretariat staff, particularly its inspectors, to keep abreast of developments in science and technology in order to maintain professional excellence and to discharge their responsibilities efficiently. ... requested the Director-General to keep these requirements in mind when identifying the future training needs of the Secretariat.	None
146	... requested the Secretariat to continue to seek to apply information technology more efficiently to improve the functioning of the OPCW, in particular, expanding the OPCW's use of internet-based communications to all sections of the Secretariat.	None
147	... requested the Secretariat to review the operational requirements and technical specifications first approved by the Conference at its First Session (C-I/DEC.71 and Corr.1, both dated 23 May 1997), seeking the advice of the Scientific Advisory Board, and to submit a report to the Council.	None
<p><i>Please note:</i> this table contains only those recommendations or requests that require some specific action by the Council or Secretariat. For the most part, it does not include reference to activities already being carried out by the Council or Secretariat. It also does not include general requests or encouragement to states parties to fulfil their obligations under the Convention. Except where in square brackets, the language used is that of the Review Document. In all cases listed above, it is the First Review Conference recommending, requesting or calling for action.</p> <p style="text-align: center;"><i>This table was prepared by Daniel Feakes, Harvard Sussex Program</i></p>		

What follows is taken from issue 79 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 HSP Sussex.

November In the Czech Republic, researchers have completed trials to pacify rhesus monkeys using a combination of sedatives and ketamine, thus opening up the possibility of the drugs later being used as a behaviour-altering weapon in combat operations, so reports *Defense Technology International* – a bi-monthly supplement to *Aviation Week & Space Technology*. Jitka Schreiberova, a member of the team of researchers, is quoted as saying that the team “achieved complete manipulability of the animal, with low motoric sedation”. The team also addressed weapon-delivery system options such as projectiles uploaded with formulations of the drugs containing dimethyl sulphoxide to enhance skin penetration. Michael Dumiak, the author of the article, writes: “While Russian, Chinese and American scientists may have similar lines of study, the Czechs are brazen enough to go on scientific record... [M]ore than one American researcher connected with the military thinks [the] presentation is compelling.”

November The US Institute of Medicine Committee to Review the Health Effects in Vietnam Veterans of Exposure to Herbicides releases *Veterans and Agent Orange: Update 2006*, its sixth [see also 27 Feb 02] biennial update. The purpose of the report, as with previous issues, is to “review newly available literature and draw conclusions from the overall evidence” of the “long-term health effects of the sprayed herbicides on Vietnam veterans” from 1962 to 1971.

1 November Russian Chemical Munitions Agency Deputy Chief of Science and Technology Andrey Shevchenko says that Russia has now completed the chemdemil of 9,633 metric tons of chemical agents, amounting to nearly a quarter of its entire stockpile [see also 9 Aug]. RIA Novosti quotes Shevchenko as saying: “At the site in the village of Gorny in Saratov Region, 1,143 tons of chemical agents have been destroyed; at the site in the town of Kambarka in Udmurt Republic, 4,333 tons; and at the Maradykovsky site in Kirov Region, 4,157 tons [see also 6 Sep].” Meanwhile, Federal Industry Agency Deputy Chief Viktor Kholstov says that Russia has only received 25 per cent of the anticipated \$2 billion in foreign chemdemil funding, which is “an insignificant inflow of funds”. He adds that Russia expects to receive roughly \$240 million next year through the Global Partnership [see 26-27 Jun 02].

1 November In the UK, the operation of the Academic Technology Approval Scheme (ATAS) enters into force, the effect of which is to require all graduate students from outside the European Economic Area and Switzerland who intend to study certain scientific disciplines to complete a questionnaire and to be vetted and approved by UK security agencies before being permitted to apply for entry visas. The scheme replaces a system of voluntary reporting under which universities and schools had to notify the Foreign Office if they suspected a student of studying a sensitive subject for improper reasons [see 22 Jan 04]. The journal *Nature* quotes an unidentified Foreign Office spokesperson as saying: “You

can think of half a dozen countries where you don't want this technology [nuclear physics and microbiology] getting into the wrong hands.” According to *Nature*, the government estimates that some 23,000 students will be affected.

Two weeks later, a preliminary hearing takes place relating to a claim by a man, referred to only as A.E., against an order by the government to prohibit him from studying AS-level, i.e. secondary-school level, courses in human biology and chemistry. According to the journal *Nature*, which reports that it is believed to be the first case of its kind, the Home Office has stated that the man's actions and affiliations lead them to believe that such coursework could be turned towards terrorism.

1 November In Utah, the Tooele chemdemil facility commences the incineration of more than 50,000 155mm projectiles filled with mustard gas that are stored at Deseret Chemical Depot [see also 18 Aug 06]. In a press release, the Chemical Materials Agency says that the destruction of 6,200 tons of mustard agent will now be the facility's last project. It has eliminated nearly a million weapons containing sarin and VX since commencing operations eleven years ago [see 22 Aug 96].

1-2 November In The Hague, there is an Industry and Protection Forum, the purpose of which is to address issues relating to the verification and implementation of the CWC from the perspective of the chemical industry assistance and protection against the threat or use of chemical weapons and safety and security at chemical plants. The forum is organized by the OPCW in cooperation with the International Council of Chemical Associations and the European Union Joint Action on Support for OPCW Activities [see 12 Dec 05]. It brings together international governmental and industry stakeholders engaged in the implementation of the CWC, as well as experts and companies involved in protection against chemical weapons, international organizations and the media. In his opening statement, OPCW Director-General Rogelio Pflirter says with regard to the amount of chemical weapons so far destroyed by parties to the CWC: “Six States Parties have declared over 71,000 metric tonnes of chemical-warfare agents, 8.77 million munitions or containers, and 65 chemical weapons production facilities... These States Parties have destroyed about 24,000 metric tonnes, or just over 33% of the declared stockpiles of chemical-warfare agents, and 11 chemical weapons destruction facilities are currently in operation in 5 States Parties.” Running in parallel to the forum is a non-commercial exhibition of protective equipment, as well as OPCW verification equipment.

A proceedings volume containing the presentations is published some months later.

1-2 November In Washington D.C., health ministers from the G7 – Canada, France, Germany, Italy, Japan, the UK and the USA – and from Mexico and the European Union convene for the eighth ministerial meeting of the Global Health Security Initiative [GHSI]. As regards the issue of

chemical and biological weapons, a joint statement issued at the end of the meeting reads states: “[W]e are re-committing ourselves to the GHSI and re-affirming our resolve to strengthen global health security and to protect the health and safety of our respective populations. We will continue to take concerted and concrete actions, and to enhance our respective capacities to prepare for and to deal with the threat of international biological, chemical and radio-nuclear terrorism... [W]e reviewed risks and threats that are currently a priority to our initiative. We also discussed and agreed on a strategy which serves the objectives to maintain strong technical cooperation on the risks and threats identified in our common assessment: to strengthen its role as a policy forum by identifying emerging issues and coordinating policy development processes to address chemical, biological and radio-nuclear threats; to strengthen risk communications strategies within and among members; to strengthen our partnership as a forum for discussing global health security and public health issues of common concern, such as pandemic influenza; to address CBRN threats through research and development for novel medical countermeasures, and to explore options for expanded access to needed countermeasures; and to ensure that we have a responsive and efficient network to address priority issues.”

2 November The US Department of Homeland Security publishes *DHS Chemicals of Interest* as Appendix A to its *Chemical Facility Anti-Terrorism Standards* (CFATS). The purpose is to aid identification of those plants or other facilities within the US chemicals industry whose risks as potential targets of terrorism must be assessed in order to determine actions needed to ensure their compliance with CFATS. As required by new chemical security legislation, the Department had issued the CFATS regulation as an Interim Final Rule earlier in the year [see 9 Apr], implementing it at certain obviously high-risk chemical facilities around the country. Appendix A now enables a wide variety of other facilities to be brought within the scope of these DHS chemical security efforts. This the Appendix does by listing 325 chemicals that, if present at a facility in greater than specified quantities, trigger a preliminary screening process: the facility becomes obliged to submit a ‘consequence assessment’ by responding to an on-line questionnaire known as *Top Screen*. Depending on the information thereby submitted to it, the DHS can then make a ‘preliminary determination’ on whether the facility should be required to comply with substantive requirements of CFATS. Back in April a draft version of the Appendix listing 344 chemicals had been published, reportedly causing uproar among businesses that had assumed they would be exempt from such security assessment.

Three sets of criteria have been used to compile the list and set the quantitative threshold:

Release – “quantities of toxic, flammable, or explosive chemicals that have the potential to create significant adverse consequences for human life or health if intentionally released or detonated”.

Theft and diversion – “chemicals that have the potential, if stolen or diverted, to be used or converted into weapons”.

Sabotage and contamination – “chemicals that, if mixed with other readily available materials, have the potential to create significant adverse consequences for human life or health”.

From the descriptions given in Appendix A, it seems that 185 of the chemicals are on the list for reasons of inherent or (as precursors) potential toxicity rather than flammability or explosiveness; some 20 of them are shown as meeting more than one of the three criteria. Fifty-three can also be found listed among the 43 chemicals and families of chemical on the three CWC schedules, although 13 CWC-scheduled chemi-

cals or families of chemicals are not on the list, even though the column for the ‘theft and diversion’ criterion has a subsidiary column headed “Theft—CW/CWP”, these acronyms standing for “Chemical Weapons/Chemical Weapons Precursors”. Sixty of the 325 chemicals are said to meet the ‘sabotage and contamination’ criterion, although only four of them are also CWC-scheduled (all of them, oddly, as precursors not as toxic chemicals). Certain well-known sabotage poisons, such as thallium salts, are not included, this perhaps indicating that they are not present within the US chemicals industry.

2-3 November At OPCW headquarters, the ninth [see 2-4 Dec 06] annual meeting of CWC national authorities takes place. Attending are 160 participants from 74 CWC parties, one non-party – Guinea-Bissau –, the BWC Implementation Support Unit and the Preparatory Commission for the Comprehensive-Nuclear-Test Ban Treaty Organization. The thematic focus of the meeting is the role of parliaments in the implementation and in increasing awareness of the CWC. In this regard, 15 parliamentarians participate in a roundtable discussion on the subject. In total, 74 bilateral meetings take place on the sidelines of the meeting between 37 CWC parties and the Technical Secretariat.

4 November In the USA, a CBS television *60 Minutes* documentary identifies Rafid Ahmed Alwan as the Iraqi agent known as ‘Curveball’ who had informed the German secret intelligence service (BND) that Iraq possessed mobile biological weapon laboratories [see 29 Jan]. The makers of the documentary say that after a two-year investigation they found that Alwan, who had lived in Germany since 1999, had lied about being a chemical engineer in charge of a facility that manufactured mobile biological weapons in order to bolster his case for asylum in Germany. Alwan had studied chemical engineering and later worked for a television production company in Baghdad where he was accused of theft. He subsequently provided German intelligence with credible descriptions of the Djerf al-Nadaf facility where he had previously worked in a subordinate position. Alwan embellished his account by saying 12 workers had been killed by biological agents in an accident at the facility, according to *60 Minutes*. Summaries of his debriefings were sent to the US Central Intelligence Agency, and were later relied on by US Secretary of State Colin Powell when he put forward his case for the US-led invasion of Iraq to the UN Security Council [see 5 Feb 03]. Speaking on the programme, former head of CIA European operations Tyler Drumheller [see 29 Jan] says: “It was a guy trying to get his green card [residence permit] essentially, in Germany, and playing the system for what it was worth.” According to *60 Minutes*, Alwan is now believed to be living somewhere in Germany, probably under an assumed name.

5-9 November In The Hague, the twelfth [see 5-8 Dec 06] session of the Conference of the States Parties to the CWC takes place, chaired by Abuelgasim Abdelwahid Sheikh Idris, Permanent Representative of the Sudan to the OPCW.

In his opening statement, OPCW Director-General Rogelio Pflirter notes that “as at 30 September 2007, OPCW inspectors had verified the destruction of more than 25,020 metric tonnes of Category 1 and Category 2 chemical weapons, or approximately 35 per cent, of the stockpiles declared by the six possessor States Parties”. [See also 1-2 Nov, In The Hague]

Participating in the session are 116 CWC parties, while two states that have signed but not ratified the Convention – Israel and the Dominican Republic – and two non-parties – Iraq and Lebanon – attend as observers. The following inter-

national organizations also attend as observers: the United Nations, the UN Office on Drugs and Crime, the UN Institute for Training and Research, the Council of the European Union, the Comprehensive Nuclear-Test-Ban Treaty Organization, the League of Arab States, the North Atlantic Treaty Organization, the International Atomic Energy Agency, and the International Committee of the Red Cross. Representatives of the chemical industry and non governmental organizations also observe proceedings.

The Conference considers and notes a status report by Pfirter on the progress made by parties that have been granted extensions of deadlines for the destruction of their Category 1 chemical weapons.

The Conference approves a number of decisions, including the OPCW's Programme and Budget for 2008, for a total of EUR 75,025,734 – the third consecutive year that the OPCW has agreed a zero nominal growth budget.

The Conference reaffirms the importance and urgency of States Parties fulfilling their obligations under Article VII and that parties that have not yet done so should notify the OPCW of the designation or establishment of their National Authority and of the steps they are taking in relation to the enactment of legislation and the adoption of administrative measures to implement the Convention.

The Conference adopts a decision to continue with the Action Plan on the Universality of the Convention, which it adopted at its eighth session [see 20-24 Oct 03], the results and implementation of which it will review at its next session.

The Conference stresses the importance of achieving and maintaining a high level of readiness of the OPCW Technical Secretariat to deal with the use or threat of use of chemical weapons within the context of Article X of the Convention.

The Conference reaffirms its determination to promote the full implementation of Article XI. It also requested the Council to continue to develop concrete measures within an agreed framework towards the full implementation of Article XI and to report back to the Conference at its next session.

7 November The US Federal Bureau of Investigations (FBI) releases its second edition of *Terrorism 2002-2005*, which amongst other things, says that terrorists could be moving towards increased reliance on chemical and biological weapons. The 68-page report provides an overview of the terrorist incidents and preventions designated by the FBI as having taken place in the USA and its territories during the years 2002 through 2005 and that are matters of public record. It also discusses major FBI investigations overseas and identifies significant events, but does not include those incidents that the Bureau classifies as criminal rather than terrorist investigations. On WMD, it states: "The use of WMD against civilian targets represents the most serious potential international and domestic terrorism threat facing the United States today and provides a glimpse into emerging terrorist scenarios of the 21st century. A variety of intelligence reporting indicates that Al Qaeda has energetically sought to acquire and experiment with biological, chemical, and radiological weapons of mass destruction... Ricin and the bacterial agent anthrax are emerging as the most prevalent agents involved in WMD investigations."

8 November In Marrakech, Morocco, Interpol Secretary-General Ronald Noble says "the case [Interpol] are working for is that of a suspected terrorist carrying a biological or nuclear weapon intending to kill hundreds of thousands if not millions of us". Speaking to Agence France-Presse on the final day of Interpol's four-day annual conference, he adds: "In order to prepare against that possibility we need a billion-dollar-a-year organization not a million-dollar-a-year organiza-

tion." According to Agence France-Presse, Interpol exceeded its budget of EUR 45.1 million last year by EUR 1.6 million. For 2007 it is reported to have a budget of EUR 44.5 million.

9 November The Finnish Environment Ministry announces that the company which is planning to construct a gas pipeline in the Baltic Sea has revised the route of the pipeline and that an interim report on the environmental impact assessment has been sent for comment to those countries affected by it. According to the Ministry, Nord Stream has revised the route at Bornholm in Denmark and Gotland in Sweden because of the proximity of dumped chemical munitions and in the latter case also mines and shipping lanes. The route through German territorial waters has also been revised. The Helsinki *Hufvudstadsbladet* quotes Ministry official Seija Rantakallio as saying that Finland and Russia have agreed to hold an expert meeting to discuss the proposed Hogland route. [See also 17 Aug 06]

11 November In London, a book by UK Member of Parliament Norman Baker on the death of Dr David Kelly [see 17 Jul 03], has been published by Methuen. *The Strange Death of David Kelly* offers analyses of the circumstances and personalities surrounding Dr Kelly at the time of his death, but, while pointing away from suicide and suggesting instead some sort of Iraqi or Anglo-Iraqi conspiracy, it does not arrive at a definite conclusion.

12-15 November In Abu Dhabi, there is a conference on responding to biosecurity threats in the Middle East. Attending the event – which is organized by the International Council for the Life Sciences (ICLS), which is headquartered in Washington D.C. – are experts and government officials from more than thirty countries in the Middle East, Europe and Asia. According to ICLS Director Terence Taylor, the conference is "designed to deal with the whole spectrum of biological risks and threats, from naturally occurring diseases, to accidental release of laboratory pathogens [...] all the way through to bioterrorism".

13 November The Russian Ministry of Defence has "no official evidence that any country would be developing biological weapons", says Head of the Radiation, Chemical and Biological Defence Forces Vladimir Filippov in an interview with the daily *Krasnaya Zvezda*.

Meanwhile, in an interview with ITAR-TASS, Filippov says that within the next fifteen years Russia will have designed new weapons using nanotechnology to combat radiation, chemical and biological terrorism. "In the conditions of the increasing threat of radiation, chemical and biological terrorism, specialists of the troops take an active part in the development of systems and complexes for ensuring safety of facilities of state importance," says Filippov. He continues: "The result of interaction of the troops with research organisations of the Russian Academy of Sciences and the industry has been the creation of a scientific-technological basis that allows looking with cautious optimism at the development of arms and means of radiation, chemical and biological defence within 15 years... [New protection means based on the newest technology] namely unique remote reconnaissance complexes, automated systems for the collection and processing of data about the radiation, chemical and biological situation integrated in an automated system of control of the troops will join the armed forces."

13 November The UK Defence Ministry releases information about the use of Agent CS by British forces in Iraq. In response to a question in the House of Commons it

states that “three anti-riot CS grenades were used in Iraq in 2005 and 10 in 2006. None were used in 2004 or, to date, in 2007.” This information stands in some contrast to the response given to an earlier Parliamentary Question, on 21 May, in which the Defence Ministry stated that 16 L96 CS grenades had been fired in Iraq during July through September 2006 by 20 Armoured Brigade.

14 November US National Institute of Justice deadline for submission of grant applications in response to its latest solicitation for *Less Lethal Technologies*. The Institute is the research, development and evaluation agency of the US Department of Justice, providing “objective, independent, evidence-based knowledge and tools to enhance the administration of justice and public safety”. This solicitation is seeking “applications for research and development leading to the adoption into practice of safer, more effective less lethal devices by law enforcement and corrections agencies”, and it says that, in addition to various other devices, the Institute “is particularly interested in new types of less lethal technology to include but not limited to: chemically based devices (e.g., anesthetics or calmatives). It adds that “proposals involving dangerous or hazardous chemicals will not be considered”.

14 November In Nashville, Tennessee, police have charged a man with assault for allegedly trying to infect a bus driver with tuberculosis, so reports UPI news agency. According to Metro Transit Authority Safety Manager Earl Rhodes, the man was upset when the driver woke him up as the bus approached the final stop. According to Rhodes, the man approached the driver and said: “You know I have TB, and I have AIDS,” before starting a period of repeated coughing. The driver then stopped the vehicle and evacuated all other passengers and herself. [See also 25 May 04]

15 November Russian Deputy Head of the Federal Agency for Secure Storage and Elimination of Chemical Weapons Nikolai Khlebnikov says: “In general, key events envisaged for 2007 have been fulfilled. Today there are all possibilities to complete the elimination of chemical weapons in 2012.” Khlebnikov makes his comments at a conference in Izhevsk, Udmurtia, the purpose of which is to discuss the future of the Kambarka chemdemil facility after it completes its operations in 2012. [See also 1 Nov]

16 November The US Congressional Research Service releases *Terrorism and Security Issues Facing the Water Infrastructure Sector*. The report, which updates a previous version, presents an overview of water infrastructure systems, describes security-related actions by the government and private sector since September 11, and discusses additional policy issues and responses, including congressional interest.

19 November In Johannesburg, Wouter Basson, the former head of South Africa’s biological weapons programme, pleads not guilty to six charges at the Health Professions Council, including that he: performed tests in absence of any approved medical research guidelines; manufactured incapacitating drugs and gases; made available cyanide capsules to specialised units for use in suicide; weaponized mortars by filling them with tear gas; and provided disorientation substances for cross-border kidnapping missions [see also 27 Aug]. Whilst admitting that he was involved in, and co-ordinated, research for Project Coast, in a written plea, Basson “denies that any unlawful conduct of any nature and or research or conduct contrary to any relevant convention or

rule of the relevant national or international authorities was ever pursued or executed in the project”. He admits that certain substances were manufactured including mandrax, ecstasy, incapacitating agents and tear gas, and that some such substances were used to test the reaction of the Special Forces troops of the then South African Defence Force (SADF). “All these drugs were manufactured for research purposes and were never utilised in a war situation or at all, apart from the CR teargas that was provided to (Unita leader Jonas) Savimbi,” says Basson, who if found guilty could lose his licence to practice medicine. He adds: “From the outset it was the express instruction and philosophy of Project Coast that no research and/or agents manufactured in the projects would ever be utilised for any other purpose than to establish a defensive capability for the SADF in the field... It must be understood that in the research for establishing a defensive capability, certain lethal agents had to be manufactured in the project for purposes of testing defensive equipment and for properly understanding dangers and possible utilisation of such lethal agents against SADF troops and/or the population by an unscrupulous enemy and of fanatical groups or individuals.”

The next day, the hearing is postponed until September, after the prosecutor, Marius Helberg, says his team was embarrassed by the testimony of their own expert witness Professor Solomon Benatar, an expert on ethics. During cross-examination by Defence lawyer Jaap Cilliers, Benatar said he “increasingly” saw difficulty with the charges brought against Basson at the Council. “The witness made concessions that he should not have made,” says Helberg.

19 November In The Hague, the OPCW hosts a meeting between its Open-Ended Working Group on Preparations for the Second CWC Review Conference and non-governmental organizations (NGOs). OPCW Director-General Rogelio Pflirter, in his introductory remarks, refers to the invaluable contributions made by NGOs and civil society in accomplishing the objectives of the CWC, and outlines the work that the OPCW is undertaking to prepare for the Second Review Conference. As well, there are introductory briefings by the Chair of the Open-Ended Working Group, Ambassador Lyn Parker of the UK, and by a member of the OPCW Scientific Advisory Board, Dr Robin Black. Representatives from the following NGOs address the meeting: the Arms Control Association, the BioWeapons Prevention Project, the Center for Arms Control and Non-Proliferation, Green Peace — War Victims (which is an Iranian NGO), the Harvard Sussex Program, the International Network of Engineers and Scientists for Global Responsibility, the International Union of Pure and Applied Chemistry, Pugwash International, the Society for Chemical Weapons Victim Support (which is another Iranian NGO), the University of Leeds, the Verification Research Training and Information Centre, and the World Federation of Scientific Workers. There are also presentations by two non-governmental individuals, Richard Guthrie and Walter Krutzsch. Representatives from the following 28 CWC parties attend the meeting, some of them intervening: Algeria, Argentina, Australia, Bolivia, Canada, China, Cuba, France, Germany, India, Iran, Japan, Libya, Malaysia, Mexico, Netherlands, New Zealand, Pakistan, Peru, Poland, Russia, Serbia, South Africa, Sweden, Tunisia, Turkey, the UK and the USA.

19-22 November In Manama, Bahrain, the Crans Montana Forum organizes a *Middle East Homeland and Global Security Forum* for some 700 people — “decision-makers and security experts” — from more than 100 countries. The agenda addresses nuclear threats, bioterrorism and ways to protect international financial and banking circuits from terrorist penetration. There is also a session on “non-lethal weapons”.

20 November UK Ambassador Lyn Parker, the chair of the OPCW Executive Council's Open-Ended Working Group preparing the Second CWC Review Conference [see 7 Jul], is interviewed at length by *Arms Control Today* on how the preparations are going and on what he thinks the outcome of the review conference will be.

21 November In Brussels, the Portuguese Permanent Representative to the European Union says that the European Union should not under-estimate the capacity of terrorists to wage biological and chemical warfare in the near future. Addressing a civil liberties committee on the European Commission's green paper on bio-preparedness [see 11 Jul], Jorge Bento Silva says: "There is every chance terrorists will get their hands on biological weapons and then use them to devastating effect on European soil... Portugal has been fortunate in not being on the frontline of terrorist attacks in recent years but that is not to say that we do not take this threat seriously." Meanwhile Radica Nusdorfer, representing the European Commission's anti-terrorism unit, says the Commission has received seventy responses to its green paper, from member states, regional authorities and other countries, including the USA and Japan.

21 November The UN Security Council instructs the UN Secretary-General on what to do about sensitive papers now held in the UNMOVIC archives. The letter from the President of the Council suggests that "access to the 'confidential' information in the UNMOVIC archives be restricted for a period of 30 years and that access to the 'strictly confidential' information be restricted for a period of 60 years". The letter continues: "Following the expiration of this period, confidential and strictly confidential information would be reviewed by the Secretary-General every five years. If the information was provided in confidence by a Member State, the Secretary-General would consult with that Member State. Following this review, the Secretary-General would have the discretion to recommend to the Security Council under a non-objection procedure the declassification of information. Security Council members also support granting earlier access to the archives to Member States and relevant international organizations, such as the [IAEA], the [OPCW] and the United Nations Environment Programme, on a case-by-case basis, following careful consideration of the reasons for allowing such access." The letter sets out a procedure involving a three-person ad hoc committee for that "careful consideration".

22 November In Vyskov, Czech Republic, NATO opens an operations centre to analyse WMD-related threats and to train soldiers to respond to emergencies involving WMD. According to the director of the centre, Radomir Mikes, the Joint Chemical, Biological, Radiological and Nuclear Defence Centre of Excellence – which was officially established on 1 July – will be staffed by fifty international military experts who will formulate security strategies, train soldiers, carry out disaster response drills and provide consulting services. Czech Chief of Staff Vlastimil Pícek says the Czech Republic was selected to host the centre because of its history of deploying CW response teams. He adds: "Germany and Canada were our big competitors. The Czech Republic was mainly selected over the long-term tradition of chemical units in our territory and their successes during the deployment, for instance, in the Persian Gulf".

22 November In Geneva, there is a seminar on *Enhancing the Biological and Toxin Weapons Convention: Preparing for the 2nd Intersessional Process*, which is jointly organized by the Graduate Institute of International Studies Dip-

lomatic Studies Programme, and the BioWeapons Prevention Project. Those giving papers at the seminar include: Chairman of the BWC Meeting of Experts and Meeting of the States Parties 2007 Masood Khan; Political Affairs Officer, Implementation Support Unit Piers Millett; Project Leader, Preparedness for Deliberate Epidemics, BioRisk Reduction for Dangerous Pathogens, Epidemic and Pandemic Alert and Response, World Health Organisation Ottorino Cosivi; Director, BioWeapons Prevention Project Jean Pascal Zanders; Coordinator, BioWeapons Prevention Project Ralf Trapp; and Permanent Representative of the African Union to the United Nations Khadija R. Masri.

22 November The UK Cabinet Office and Department of Health publish *Pandemic Flu: A National Framework for Responding to an Influenza Pandemic*; a document which aims to increase preparedness and better protect the public against a possible flu pandemic. The new countermeasures include plans to: double the stock of antiviral drugs to cover at least 50 per cent of the population; buy 14.7 million courses of antibiotics to cover at risk groups; purchase 350 million surgical masks and 34 million respirators for the National Health Service and social care staff on the frontline. The government has an existing stockpile of 3.3 million doses of H5N1 pre-pandemic vaccine for healthcare workers. Commenting on the document, Health Secretary Alan Johnson says: "Our new plans provide the first national blueprint for the UK's response to a pandemic flu. We are strengthening our countermeasures to ensure we have the necessary vaccines, antibiotics and antivirals to protect the population if the worst were to happen... We know a pandemic would have significant social and economic impact as well as a serious effect on the health of the population. A thorough and integrated response is therefore critical to lessening its overall effect."

24 November From New Delhi, the Institute for Defence Studies and Analyses is distributing the inaugural issue of a new quarterly journal, *CBW Magazine: Journal on Chemical and Biological Weapons*. The Executive Editor is Ajey Lele and the Assistant Editor is Monalisa Joshi. The content of this first issue is intended as a model for subsequent issues too: an editorial, an invited article (here, on bioterrorism, written by the President of Control Arms Foundation of India, retired general Dr B S Malik), a cover story (in this case on the CWC's first decade, written by the Executive Editor), a country profile (here, on the North Korean CW programme, written by the Assistant Editor), a current-news section organized by subject, and finally a book-review section. Also included in the inaugural issue is a 'case study' – "Protecting Homeland: US Biodefence Programme Post 9/11" by Animesh Roul, Executive Director of the Society for the Study of Peace and Conflict, New Delhi.

26 November North Korean missile engineers secretly visited Syria in mid-November and offered advice to Syrian engineers on how to mount chemical weapons on missile warheads, so reports the Tokyo *Sankei Shimbun*, quoting "a source familiar with the Middle East situation". The source is quoted as saying that following the explosion at a Syrian military facility near Aleppo, North Korea is now sensitive to the leaking of information and "may be wanting to prevent the repercussions such as the issue of [its] WMD proliferation being taken up at the six-party talks".

26-27 November In The Hague, experts from all European Union member states convene for a conference on *Chemical, Biological, Radiological and Nuclear (CBRN) Security in the European Union*. The event is organized jointly by the

Dutch National Coordinator on Counterterrorism, the Portuguese Presidency of the European Union and the European Commission. The aim of the conference is to share views and information on CBRN-security, to discuss best practices and to identify priorities for ongoing work.

27 November The Taiwanese Bureau of Investigation announces that charges will be filed against a company based in Taipei for allegedly selling equipment to North Korea to enrich uranium and other technology for producing nuclear and biological weapons. Kyodo news agency quotes an unidentified Taiwanese Justice Ministry official as saying that over the last year investigators have provided prosecutors with evidence implicating Yi-cheng Company in the illegal export of filters for preparing uranium and biological agents for use in weapons. The source is quoted as saying that Yi-cheng caught the attention of investigators when they learned that it had delivered "spare parts that the average person wouldn't possibly have any use for" to a Chinese company known to be a North Korean front.

27 November In Deer Park, Texas, the commercial Texas Molecular facility completes the destruction of the entire US stockpile of neutralized binary precursors QL and DF, which were neutralized at Pine Bluff, Arkansas last year [see 12 Oct 06]. Commenting on the destruction, Laurence Gottschalk, head of the Nonstockpile Chemical Materiel Project says: "The US binary chemical materiel is history."

27-30 November At OPCW headquarters, the Executive Council convenes for its fifty-first [see 25-28 Sep] session, which is chaired by Ambassador Romeo Arguelles of the Philippines.

Further to the consideration of the issue at previous sessions, the Council considers amendments to the agreed detailed plans for chemdemil verification at the facilities in Newport, Indiana, USA and in Pine Bluff, Arkansas, USA, and decides to consider them further at its next regular session. Further to its consideration of this issue at previous sessions, the Council also considers the agreed detailed plan for verification of the destruction of the Category 1 chemical weapons at the Maradykovsky chemdemil facility in Kirovskaya Oblast, Russia, and decides to consider it further at its next regular session.

The Council notes three Notes by Director-General Rogelio Pfirter on the notification by Russia of changes at: the former CWPF (chloroether production) at Open Joint Stock Company 'Khimprom', Novocheboksarsk; the former facility for filling of mustard gas and lewisite mixture into munitions, Volgograd; the former CWPF (aminomercaptan production) Open Joint Stock Company 'Khimprom', Novocheboksarsk. The Council also considers and notes a Note by the Secretariat on an update on progress in converting a former CWPF for purposes not prohibited under the CWC.

The Council reaffirms the obligation of possessor States Parties to destroy their chemical weapons within the extended deadlines, in accordance with the relevant decisions by the Conference of the States Parties at its eleventh session [see 5-8 Dec 06]. Further to a decision by the Conference at its eleventh session, the Council notes the following national papers: by Libya entitled "Report on the Progress of Destruction of Category 1 and 2 Chemical Weapons Stockpiles"; by India entitled "Report on CW Destruction Activities during the Extension Period after 29 April 2007 – 90 Day Report (2nd)"; by Russia entitled "Report on CW Destruction Activity at the End of the Current 90-Day Period after 29 April 2007 (as at 30 September 2007)"; by the USA entitled "Report to the Executive Council – Destruction Activity as of 30 September 2007, Second Report"; and by an unidentified State Party entitled

"Report on CW Destruction Activities during the Extension Period". Further to a decision taken by the Council at its forty-sixth session [see 4-7 Jul 06], the Council considers and notes a national paper by China entitled "Report on the Status of Japanese Abandoned Chemical Weapons in China", and a national paper by Japan entitled "The Report of the Current Status of the ACW Projects in China".

The Council considers a facility arrangement between the OPCW and the UK regarding on-site inspections at the Schedule 2 Plant Site, Ellesmere Port Incineration Plant, Cleanaway Limited, Cheshire, and decided to consider it further at its next regular session.

Further to its consideration of this issue at previous sessions, the Council considers the facility agreement with the Russian Federation regarding on-site inspections at the CWDF located in Maradykovsky, Kirovskaya Oblast, and decides to consider it further at its next regular session. Further to its consideration of this issue at previous sessions, the Council also considers and notes modifications to a facility agreement with the USA regarding on-site inspections at the Pine Bluff chemdemil facility, Arkansas. Finally, having considered the issue at previous sessions, the Council considers modifications to a facility agreement with the USA regarding on-site inspections at the Pine Bluff chemdemil facility, Arkansas, USA. Further to its consideration of the matter at its twenty-seventh meeting [see 25-28 Sep 01], the Council considers and approves a draft decision on the timely submission of declarations under Article VI of the Convention.

Further to its consideration of the issue at its forty-ninth session [see 26-29 Jun 07], the Council considers a Note by the Director-General containing lists of new validated data and approves the lists.

The Council considers a Note by the Director-General on the list of approved data recommended for removal from the OPCW Central Analytical Database, and approves the removal.

28 November The US Congressional Research Service releases *Nonproliferation and Threat Reduction Assistance: US Programs in the Former Soviet Union*. The report complements the reports *Nunn-Lugar Cooperative Threat Reduction Programs: Issues for Congress* and *Preventing Proliferation of Biological Weapons: US Assistance to the Former Soviet States* [see 10 Apr 02]. [See also 16 Nov]

29 November In the USA, an expert panel of the National Research Council releases a report which concludes that a draft assessment by the National Institutes of Health (NIH) of the risks associated with a proposed BSL 4 facility at Boston University is "not sound and credible". Amongst other things, the panel concludes that the draft does not adequately identify, or thoroughly develop, worst-case scenarios for the release and spread of a pathogen, and fails to consider environmental justice issues and how the facility could affect an inner-city population. The report concludes: "It is important to develop presentations and documents that are transparent, complete, and clearly address the concerns of interested and affected parties... [The process used by the NIH, though] is not transparent, is not complete, and may not address the fundamental concerns of the community, particularly regarding environmental justice. In light of this inadequacy [...] statements in the [NIH study] that the risks are 'negligible' and 'vastly overstated' can appear unfounded and dismissive of public concerns." The report, requested by the state of Massachusetts, is intended to form the scientific basis for a supplemental final environmental impact report after the Superior Court of Massachusetts rejected an earlier environmental impact report earlier in the year. The supplemental report has not yet been submitted by Boston University.

29-30 November In Cape Town, South Africa, the Institute for Security Studies conducts a workshop on the issue of benignly intended work in the life sciences being open to misuse for hostile purposes and the consequent need for educational materials to raise awareness of this risk among life scientists. The South African participants in this *Bio-Educational Module Workshop* are from a wide range of backgrounds, including industry and academia. Among them is Peter Folb, who gives a presentation on his work with WHO on Life Science Research and Global Health Security. There are also presentations by participants from the UK (Brian Rappert and Malcolm Dando) and the USA (Megan Davidon of the South East Regional Center of Excellence for Biosecurity). By the end of the workshop, possible content for the educational module has taken shape.

30 November The US Government Accountability Office releases *Toxic Chemical Releases: EPA Changes Could Reduce Environmental Information Available to Many Communities*. Amongst other things, the report analyses how the Environmental Protection Agency (EPA) and others use Toxics Release Inventory (TRI) data, and whether EPA followed internal guidelines in developing its rule to simplify the reporting by facilities process through use of 'Form A'. It states: "In a draft of this report, we recommended that EPA thoroughly evaluate the costs and benefits anticipated to communities and reporting industries from increased use of TRI Form A... In commenting on the draft, EPA's Assistant Administrator for Environmental Information and Chief Information Officer disagreed with our recommendation regarding the need for such an analysis and determination, noting that EPA believes that all appropriate and necessary analyses were conducted in the rulemaking process. Because EPA did not agree to implement the recommendation, and in light of the significant problems with the TRI rule that we identified in this report, we believe the Congress should consider legislation specifically addressing EPA's expansion of Form A eligibility."

3 December The Swiss Federal Department of Defence, Civil Protection and Sports releases *National Data Collection Processes for CBM Submissions: Revisiting the Confidence Building Measures (CBM) of the Biological and Toxin Weapons Convention (BTWC) after Twenty Years of CBM submissions*. The report, which was jointly compiled by Filippa Lentzos of the BIOS Centre, London School of Economics; and Angela Woodward, of the Verification Research, Training and Information Centre (VERTIC), London, offers "quantitative and qualitative research on CBM completion processes". Its aim is to "assist States Parties in setting up or streamlining their own data collection, collation and submission processes", as well as to "provide a solid base" for "discussions about the challenges of the CBM mechanism" and "new ways of addressing those challenges".

3-4 December In Lyon, France, senior law-enforcement officials from nine countries and representatives from a number of international organizations – the European Council, Europol, the UN Office for Disarmament Affairs, the UN Office for Co-ordination of Humanitarian Affairs and the World Health Organization – convene for a two-day Interpol tabletop exercise involving an international terrorism attack with plague bacteria. Exercise 'Black Death' is the latest in a series of initiatives launched by Interpol since the creation of its bioterrorism prevention programme [see 6 Jul 04]. In his opening address Interpol Secretary General Ronald Noble says: "[Bioterrorism] is the perfect storm of opportunity and motiva-

tion. Using disease, terrorists can substantially multiply the devastation and societal disruption that they cause, and they can do it without sophisticated infrastructure or state support. For this very reason, we would be mistaken to treat a worst-case scenario as a remote possibility."

3-5 December In Kuala Lumpur, Malaysia, a sub-regional workshop on assistance and protection against chemical weapons for CWC parties in south-east Asia takes place. Jointly organized by the Malaysian government and the OPCW, the workshop aims to serve as a forum for managers and planners either involved in the protection of civilian populations against chemical weapons, or who will be responsible for the provision of emergency assistance under Article X of the CWC. A draft regional plan for assistance and protection against chemical weapons is also discussed, including technical requirements for training, as well as plans to foster regional co-operation. The workshop includes an exhibition on assistance and protection against chemical weapons, which is held by various agencies to mark the tenth anniversary of the CWC [see 29 Apr]. In total, seventy-five representatives from the following ten CWC parties participate: Brunei Darussalam, India, Indonesia, Laos, Malaysia, Palau, Philippines, South Korea, Thailand, and Viet Nam.

3-6 December In Bellagio, Italy, there is a meeting on *Public Health Surveillance Networks: Learning, Trust, Diplomacy, Science and Technology*, which is organized and funded by the NTI Global Health and Security Initiative (GHSI) with support from the Rockefeller Foundation. In total, 23 international experts from infectious disease surveillance networks and from epidemiological surveillance and health informatics attend the event, the purpose of which is to discuss best practices and lessons learned, and recommend action required to advance the global capacity for public health surveillance with particular attention to infectious disease surveillance in developing countries.

Two months later, the GHSI launches the Bellagio Call for Action which is intended as the focal point for future action.

3-14 December In Kruševac, Serbia, there is the second training course for OPCW inspectors on 'live agents' at the Nuclear, Biological and Chemical Defence Training Centre. The course, which is jointly organized by the Serbian Ministry of Defence and the OPCW, is attended by 33 inspectors, who receive training in detection, in decontamination procedures, and in the use of protective equipment. According to an OPCW press release, a total of 75 inspectors have now been trained at the Centre in 2007.

4 December In New Delhi, at an international high-level conference on avian and pandemic influenza, Indonesian Health Minister Siti Fadilah Supari announces that her country, which has been especially badly affected by the H5N1 bird flu virus, will not share its specimens of the virus with the World Health Organization unless a Material Transfer Agreement has been concluded for each sample sent to a foreign laboratory specifying that the sample would be used for diagnostic purposes and not for commercial gain. There is press reporting of concerns in Indonesia that the virus could be used to make not only expensive vaccines but also biological weapons.

4 December The Congo deposits its instrument of ratification to the CWC with the UN Secretary-General. In thirty days, The Congo will become the 183rd [see 7 Mar] party to the Convention.

5 December The Japanese Imperial Army used glanders bacterium against Chinese civilians around 1942 according to the evidence, so reports Xinhua news agency, quoting Michael Franzblau, clinical professor of dermatology at the University of California Medical School in San Francisco, who recently visited surviving victims in the eastern Chinese province of Zhejiang. According to a survey conducted by Fu Zili, a retired school teacher, in the Wucheng district of Jinhua City, a total of 511 people suffered from the disease, among whom 362 have died and 149 are still alive. Franzblau says he began to study the history of Japanese germ warfare after reading *Factories of Death: Japanese Biological Warfare 1932-1945, and the American Cover-Up* by the historian Sheldon Harris. That study represented two decades of research and included twelve field trips to China. Franzblau visited Zhejiang with Harris in March 2002 to interview the victims and says he felt compelled to continue his work following the death of Harris [see 31 Aug 02]. [See also 29 Aug 06]

5 December In London the International Institute for Strategic Studies hosts a discussion meeting on "Confronting the Threat of BioViolence" led by Barry Kellman [see 20 Nov – 8 Dec 06] of the DePaul University College of Law. The IISS later reports: "Professor Kellman spoke of the globalisation of biotechnology and the threat posed by biological terrorism. He argued that it was essential for humanity to win the existential struggle against 'bioviolence', but warned that at present 'we are not winning, we are only waiting'."

6 December In Brussels, the Council of the European Union adopts a series of 'conclusions' on *Addressing Chemical, Biological, Radiological and Nuclear Risks and on Bio-Preparedness*. The conclusions read thus: "[The European Union] must continue addressing with equal determination the non-conventional risks, in particular those posed by Chemical, Biological, Radiological and Nuclear substances, including those related to their potential terrorist use, as recognized and addressed by the EU Strategies on counter-terrorism and against the proliferation of WMD... [It] is first and foremost the responsibility of each Member State to protect its populations against such disasters and that the EU intervenes in this area mainly in a supportive role in accordance with the principles of subsidiarity and proportionality, giving preference where possible to non-legislative solutions... [E]ffective policies to address CBRN risks should be further developed in close consultation with national authorities and, as appropriate, the industrial sectors concerned, academic institutions and other relevant stakeholders, notably with a view to ensuring the viability and proportionality of measures which may be required... [The] Counter-Terrorism Coordinator and the SG/HR's Personal Representative for non-proliferation [are invited] to work together and with Member States and the Commission, in accordance with their respective competences, with a view to identifying ways and means to mitigate the risk that terrorists might in the future obtain, directly or indirectly, CBRN materials... Member States and the Commission [are encouraged], without prejudice to and in parallel with the broader work on addressing non-conventional risks, to address as a matter of priority the area of bio-preparedness with a view to addressing biological risks and threats through appropriate actions and activities in the relevant policy areas... Member States and the Council Secretariat [are encouraged] to strengthen, within the framework of their respective competences, interoperability and to improve the exchange of information between the systems and structures [...] while taking due care to preserve their specificity and effectiveness... [T]he EU should carefully analyse the instruments that exist, make the best possible use of them -avoiding their duplication and

seeking synergies with existing national, EU, regional and global mechanisms – and not create new instruments, systems or structures unless proven necessary... [T]he Commission, the Member States and the Council Secretariat [are called upon] to implement the [aforementioned] conclusions, in accordance with their respective competences as laid down in the Treaties. [See also 11 Jul]

6 December The US Government Accountability Office (GAO) releases *Chemical Demilitarization: Additional Management Actions Needed to Meet Key Performance Goals of DoD's Chemical Demilitarization Program*. The report evaluates: the progress DoD and the Army have made in addressing GAO's prior recommendations to strengthen management of the US chemdemil programme; the reasonableness of schedule milestones; the reliability of cost estimates; and the effectiveness of efforts to provide monetary incentives to the systems contractors. The report states: "[A]ctions DoD and the Army have taken to identify the risk of future program schedule extensions and cost growth have not been effective because the Chemical Materials Agency's risk management process has not been fully developed or integrated with DoD's risk management process... As a result, managers lack an integrated and systematic approach to evaluate and manage risk." It adds that "shortcomings in the underlying cost data" left the GAO unable to verify cost estimates for the weapons disposal effort, and refers to nebulous requirements for shuttering facilities and unstable baseline costs. In total, the report makes thirteen recommendations, including development by the Army and DoD of interim weapons disposal goals, approaches and milestones; preparation of realistic estimates for the programme's schedule and cost; and creation of a schedule for completing a risk-management approach.

7 December In McLean, Virginia, the US National Counterproliferation Center, which reports to the Director of National Intelligence (DNI), has established a Biological Sciences Expert Group. BSEG is a panel of life scientists from universities, companies and non-government organizations that has already met five times at the Center to assess the merits of projects proposed and conducted by researchers at the 16 agencies operating under the aegis of the DNI. Convened by the Center's "senior bio adviser", Lawrence Kerr, BSEG is intended to raise the review of intelligence research to the standards of other federal science agencies. Kerr is quoted by *Science* magazine as saying that "the research done by intelligence agencies is currently reviewed primarily by the agencies' own scientists and program managers, who have a limited range of expertise". *Science* further reports that, besides helping to screen and design projects to combat bioterrorism, BSEG will also analyse research findings, review the scientific validity of intelligence assessments, and occasionally conduct its own studies. *Science* has framed its report with reference to the Curveball debacle [see 29 Jan]. BSEG has 24 core members and a network of 40 others, very few of whom have yet been identified publicly. The Defense Intelligence Agency had formed a comparable expert group, known as BioChem 20/20, in the late 1990s.

8 December The London *Daily Telegraph* runs an interview with an Italian scientist who claims that 3,500 years ago the Hittites of Anatolia – whose empire stretched from northern Turkey into Iraq and Syria – had mastered the art of biological warfare through introducing sheep infected with tularemia into cities they wished to conquer. Siro Trevisanato says he reached his conclusions after spending years searching through ancient accounts of Hittite conquests.

For example, he says, in 1325 BC, when the Hittites sacked the Phoenician city of Symra, on the borders of Lebanon and Syria, a mysterious plague was recorded. "This is the first time we hear of the so-called Hittite Plague," says Trevisanato. "It appears in several documents. In my view, it is no accident that it coincides with the first documented description of tularemia." According to Trevisanato, the Hittites would leave the sheep outside the targeted city, whereupon the residents would take them back and then either breed or eat them, thereby spreading the disease. He notes, however, that an epidemic of the disease weakened the Hittites themselves a few years after the Symra attack.

8-9 December In Geneva, the Pugwash Study Group on Implementation of the CBW Conventions conducts its 27th workshop, this being the 53rd workshop on CBW to have been convened under the auspices of the Pugwash Conferences on Sciences and World Affairs since 1964. The workshop is entitled *Moving Forward after the Sixth BWC Review Conference* and 48 governmental and non-governmental participants from 18 countries (Australia, Belgium, Canada, France, Germany, Iran, Ireland, Italy, Macedonia, the Netherlands, New Zealand, Pakistan, Russia, Slovakia, Sweden, Switzerland, the UK and the USA) have been invited for specialist discussion of an agenda that is structured in part by the topics on the 2007-10 intersessional programme [see 8 Dec 06] and in part by broader and longer-term BWC-related issues, including topics excluded from the intersessional programme. There is also attention to the challenges ahead for the Second CWC Review Conference, scheduled for April 2008. The proceedings of the workshop are, as usual, conducted under the Chatham House rule, but a report is later produced by the Harvard Sussex Program for publication by Pugwash.

10 December In Brussels, the Council of the European Union releases its latest [see 19 Jun] six-monthly progress report on the implementation of the EU strategy against the proliferation of WMD, which summarises events that took place in the second half of 2007. Amongst other things, the report states that the Council is preparing the adoption of a Joint Action by the end of the year in support of the activities of the World Health Organization in the context of the BWC, in particular through projects aimed at awareness raising, training and networking activities and country-specific technical assistance. The implementation of the Joint Action will commence in 2008. [See also 6 Dec]

10 December The US Army releases *Weapons of Mass Destruction – Civil Support Team Operations* (WMD-CST). The manual serves as the foundation for WMD-CST doctrine and focuses on the organization, mission, command and control, and operations of the WMD-CST. It discusses employment concepts, planning considerations, capabilities, and the type of support that WMD-CSTs can provide during a response to a CBRNE incident whether occurring intentionally or unintentionally. The Army describes the mission of the WMD-CST programme as being to support civil authorities by identifying CBRNE agents and substances, assessing current and projected consequences, advising on response measures, and assisting with appropriate requests for additional support.

10 December The US Chemical Materials Agency announces that the USA has now destroyed 50 per cent of its stockpile of chemical weapons since entry into force of the CWC [see 29 Apr 97]. Acting Director of the Agency Dale Ormond says: "Last June, we met the CWC 45 per cent

[chemdemil] milestone [see 21 Jun]... Reaching the 50 per cent agent destruction mark shows that the Army's chemical weapons demilitarization program has truly hit its stride in destroying chemical agent safely and efficiently."

10-14 December In Geneva, states parties to the BWC convene for the first of four intersessional annual meetings, in accordance with the decision taken at the Sixth Review Conference [see 8 Dec 06]. The purpose of the meeting is to review the findings of the recent meeting of experts, which discussed matters pertaining to enhancing national implementation, including enforcement of national legislation, strengthening of national institutions and coordination among national law enforcement institutions, and regional and sub-regional cooperation on BWC implementation [see 20-24 Aug 07]. The meeting also considers the work of the Implementation Support Unit (ISU), which was recently launched [see 20 Aug] after having been established at the Sixth Review Conference, and in this regard considers a report submitted to it by the ISU. Chairman Ambassador Masood Khan of Pakistan submits a report to the Conference on universalization activities, which outlines the results to date of the activities to promote universalization of the BWC undertaken by the Chairman and the ISU. The Conference also considers reports submitted by Germany on the BTWC and bioincident and biocrime databases, and on legal implantation and enforcement. Meanwhile, France submits a report on confidence-building measures. In total, 95 BWC states parties participate in the meeting. The following six states that have signed but not yet ratified the Convention participate without taking part in the decision-making process: Côte d'Ivoire, Egypt, Madagascar, Myanmar, Nepal, and United Arab Emirates. In addition, Angola and Israel, neither parties nor signatories to the Convention, participate as observers. Also attending the meeting as observers are: the United Nations Office for Disarmament Affairs, the United Nations Institute for Disarmament Research, the European Commission, 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. Also granted observer status are 20 non-governmental organizations and research institutes. The participants decide that the next meeting of experts would be held in Geneva from 18 to 22 August 2008, and that the meeting of states parties would be held in Geneva from 1 to 5 December 2008. At the end of the final meeting, Khan says: "[We] have had a very productive meeting, and have made a good start on our goal of moving from adjacency to synergy in our efforts to strengthen the effectiveness of the Convention, in the areas we have been looking at of enhancing national implementation and regional and sub-regional cooperation."

13 December The UK Department of Environment, Food and Rural Affairs (DEFRA) releases *A Review of the Regulatory Framework for Handling Animal Pathogens*. The document was compiled by a committee chaired by Sir Bill Callaghan, a visiting fellow at Nuffield College, Oxford, after the Secretary of State for DEFRA asked him to undertake a review of the regulatory framework for handling animal pathogens and to make recommendations for changes that would strengthen relevant regulations. The investigations into the outbreaks of Foot and Mouth Disease which began in the county of Surrey in August 2007 concluded that the most likely cause was an accidental release of the virus from the Pirbright Institute for Animal Health laboratory. The document makes a total of eight recommendations, including that DEFRA, the Department of Health, the Health and Safety Executive and

other interested parties work together to develop a single regulatory framework to govern work with human and animal pathogens. DEFRA Secretary of State Hilary Benn announces that he is accepting all of the recommendations.

13 December The Massachusetts Supreme Judicial Court upholds a lower-court decision that the state's environmental approval of the BSL-4 facility at Boston University was "arbitrary and capricious" and that the University must complete another environmental review of the project before submitting it to the state for approval. Last month, a National Research Council panel of experts concluded that a federal review of the laboratory did not adequately identify, or thoroughly develop, worst-case scenarios for the release and spread of a pathogen and failed to consider environmental justice issues and how the facility could affect an inner-city population [see 29 Nov]. The Court holds that the state's approval in 2004 "lacked a rational basis because the evaluation of the 'worst case' scenario was significantly incomplete" as it only considered the potential escape of anthrax from the facility.

13 December In Washington, D.C., US Secretary of Defense Robert Gates and Kazakh Ambassador to the USA Erlan Idrissov sign an amendment to extend the bilateral Cooperative Threat Reduction (CTR) agreement between the two countries. A Department of Defense press release issued following the signing reads thus: "With this extension, the United States and the Republic of Kazakhstan enter the 15th year of CTR cooperation and a new era... The biological threat program is a major area of expanded cooperation. Through projects focused on capacity building, research, bio-security, and bio-surveillance, the two governments are committed to confronting the emerging biological threat through proactive prevention."

13 December The US Congress has requested the National Academies, and thereafter the Department of Defense, to undertake studies to explore the possibility of expanding Nunn-Lugar Cooperative Threat Reduction programme activities beyond former Soviet states so as to address proliferation concerns in the Middle East, Northeast Asia and other regions, so reports *Inside the Pentagon*, referring to the FY 2008 Defense Authorization Bill.

13 December The US Congressional Research Service (CRS) releases an update on *China and Proliferation of Weapons of Mass Destruction and Missiles: Policy Issues* [see 11 Dec 06]. As in previous editions, the only reference to chemical and/or biological weapons is alleged sales by Chinese entities to Iranian entities of material considered to contribute to chemical proliferation.

16 December The Turkish Air Force launches air strikes on Erbil, Iraq, which subsequently results in numerous villagers being hospitalized after complaining of headaches, dizziness, vomiting and skin burns, so reports Firat news agency, quoting unidentified officials at a hospital in Ranya where some of the victims were treated. The officials are quoted as saying: "We are going to send fragments from the bombs used and soil samples from the bombed areas off to be studied. We are worried that there might be a chemical weapon related illness here." According to Firat, the air strike was carried out by approximately fifty aircraft and resulted in five HPG (People's Defense Forces) guerrillas and two civilians being killed and many others being injured. [See also 30 Aug]

17 December At UN headquarters, outgoing Chairman of the 1540 Committee Peter Burian briefs the Security

Council on the work the Committee has undertaken during the past two years. Amongst other things, Burian says that currently "about 140 states have submitted their first reports [to the Committee] and about 90 have submitted additional information". He adds that "the number of non-reporting States is coming down from the low fifties, as more states in Africa, the Caribbean and the Pacific Islands region respond to our intensive outreach activities and to the last round of correspondence. [See also 11-12 Jul]

17 December The US National Biodefense Science Board (NBSB) – which advises the Department of Health and Human Services on prevention, preparedness and response initiatives for public health emergencies involving chemical, biological, radiological or nuclear agents – convenes for its first meeting. The panel was established under the Pandemic and All-Hazards Preparedness Act [see 19 Dec 06 and 19 Jun 07].

17 December The US Government Accountability Office (GAO) transmits to Congress *Plum Island Animal Disease Center: DHS has Made Significant Progress Implementing Security Recommendations, but Several Recommendations Remain Open*. The letter states that the Department of Homeland Security [DHS] has carried out all but six of 24 security recommendations made in 2003 for the Plum Island Animal Disease Center in New York, but crucial work in some areas remains incomplete. It also states that since the GAO made its 24 security recommendations [see 19 Sep 03], DHS has increased physical security, restricted access to pathogens, enhanced security capabilities and re-evaluated threats to the facility.

18 December Russian Chairman of the State Commission on Chemical Disarmament Alexander Konovalov says that "Russia has effective and unique industrial technologies for [chemdemil], which has reduced to naught possible risks for workers of enterprises at which the chemical weapons are destroyed and for the ecology of regions". Speaking at a press conference in Moscow, Konovalov adds that the most "dirty substances were stored openly in Kambarka, and for this reason we have destroyed them first".

18 December The US Department of Defense (DoD) announces that it has certified the 22nd National Guard WMD Civil Support Team for Puerto Rico, which will be stationed at Fort Buchanan. It is the 53rd such unit certified by the DoD – out of 55 teams authorized to date by Congress – which has been trained and equipped to assist local emergency responders in responding to an attack involving WMD. According to a DoD press release, Congress has called for the establishment of at least one such team in each US state and territory as well as the District of Columbia.

18 December In the USA, the Trust for America's Health releases its fifth [see 12 Dec 06] annual report entitled *Ready or Not? Protecting the Public's Health from Diseases, Disasters, and Bioterrorism*. The report contains state-by-state health preparedness scores based on ten key indicators to assess health emergency preparedness capabilities; all fifty US states and the District of Columbia are evaluated. It concludes that while important progress has been made, critical areas of the nation's emergency health preparedness effort still require attention. The report also states that the continuing trend of annual cuts in federal funding for state and local preparedness activities threatens the safety of the USA. Trust for America's Health describes itself as "a non-profit, non-partisan organization dedicated to saving lives by protecting

the health of every community and working to make disease prevention a national priority.”

21 December The Helsinki Commission announces the publication of the full version of the Baltic Sea Action Plan, which was adopted at the HELCOM ministerial meeting four weeks previously in Krakow, Poland. The 103-page plan sets 2021 as a target date by which time the biodiversity of the Baltic Sea should achieve an ecological balance and support a wide range of sustainable human, economic and social activities. [See also 8-12 Oct]

22 December The Japanese Public Security Intelligence Agency releases its annual report on domestic and international security, which *inter alia* estimates that as of 30 November the Aleph cult, formerly Aum Shinrikyo, has approximately 1,500 members. Kyodo news agency reports that this figure is down by about 150 from 2000, the year the government started observing the group's activities. Members of Aum Shinrikyo have been found guilty of involvement in the sarin gas attacks in Matsumoto [see 28 Jun 1994] and on the Tokyo underground rail network [see 20 Mar 95].

22 December The *British Medical Journal* publishes research which concludes that chronic symptoms and work difficulties maintained beliefs about the potency of chemical weapons after the First World War. The team of researchers from the Institute of Psychiatry and King's Centre for Military Health Research in London referred to 7800 files from the First World War held by the War Pensions Agency records to analyse the psychological effects on servicemen exposed to chemical weapons, but who were not seriously disabled by them. The files, according to the researchers, are the only source of detailed follow-up data on such cases in the UK. They say that although not necessarily representative of all those affected, the records provided an extended period of assessment and included death certificates as well as regular medical boards held over periods of up to sixty years, which enabled them to gather a wide range of statements about perceptions of chemical weapons and their effects. As to the psychological effects, the researchers say: “We conclude from our war pension data that there was an interaction between ex-servicemen's symptoms and beliefs, which began with the traumatic experience of being gassed but was also linked to popular convictions about its potency and systemic effects. The conviction of having been gassed, whether accurate or not, had long term deleterious effects on a person's beliefs about illness and perceptions of health and wellbeing. Our analysis might also assist in understanding the otherwise baffling persistence of ill health experienced by some US and UK military personnel after their deployment to the 1991 Gulf war.”

24 December In Oregon, the Umatilla chemdemil facility destroys its last VX-filled spray tank, and thereby the last in the US stockpile. According to the US Chemical Materials Agency, the spray tanks were “bulk agent containers designed to distribute the liquid agent in an aerosol form – as a fog or mist – from an aircraft onto battlefields.” The destruction of the tanks commenced one month previously. [See also 29 Oct]

30 December In Kenya, President Kibaki is declared winner of the presidential election that had been held three days previously. This is a disputed result that precipitates widespread and long-lasting violence throughout the country, killing hundreds, during which there are occasional reports of poisoned arrows causing fatalities.

January In the UK, the Parliamentary Office of Science and Technology releases a ‘postnote’ on *Synthetic Biology*, which “outlines recent developments, the possible applications and risks of synthetic biology and [...] policy options for the development and governance of the research”.

January The US National Research Council Committee on Methodological Improvements to the Department of Homeland Security's (DHS) Biological Agent Risk Analysis releases its interim report. The DHS requested the report with a view to adopting recommendations leading to improvements to the methodology used for its first bioterrorism risk assessment. The report sets out the following three interim recommendations: the DHS should establish a clear statement of the long-term purposes of its bioterrorism risk analysis; the DHS should improve its analysis of intelligent adversaries; and the DHS should increase its risk analysis methodology's emphasis on risk management.

January In Fairfax, Virginia, where the George Mason University Department of Biodefense [see 13 Feb 02 and 20 Jul 04] has continued to generate doctoral dissertations on BW topics, a new one is published via UMI. By Steven J Allen, it is a 538-page *Analysis of Factors Leading to U.S. Renunciation of Biological Weapons*. Its thesis is that the decision by President Nixon to renounce biological weapons happened because “opponents of the U.S. BW program determined the outcome of the debate on the program by systematically excluding from that debate all of the program's supporters ... [so] that, as a result of the exclusion of pro-U.S. BW views, not all pros and cons were fully considered before the decision was made.” The dissertation relies chiefly on a selection of internet-retrievable source materials for its narrative, though it does also cite “White House documents from 1969 and early 1970” examined at the National Archives “as well as some material from the Johnson administration”. The author explains: “This dissertation is intended as an all-open-source analysis, the sort of work that an intelligence analyst might create (excluding classified information). I examine the associations, affiliations, and political beliefs of various actors to determine the presence or absence of bias in debates and policy reviews in which they participated.” Allen attributes dominant influence to people he characterizes as “scientist-activists who chose to step outside the scientific realm and make *political* recommendations to policymakers”, singling-out in particular individuals associated with the Pugwash Conferences on Science and World Affairs, which he says was “heavily influenced by the Soviet bloc and by persons affiliated with pro-Soviet organizations”. The people whose views he says should have entered the decision process but were instead systematically excluded were “experts in the Chemical Corps and others with actual experience developing and producing biological weapons”.

2 January In Canberra, the Israeli, UK and US embassies receive packages containing a suspicious powder, which results in the police evacuating the sites and barricading the surrounding areas. The Associated Press later quotes an unidentified spokesman for the Australian Federal Police as stating the powder was subsequently determined to be harmless.

2 January In Arkansas, the Pine Bluff chemdemil facility has now destroyed more than half of its VX rockets and eliminated more than 100,000 weapons filled with sarin and VX nerve agents. In a press release, the Chemical Materials Agency says that once the VX-filled rockets are

destroyed in around six months' time, preparations will commence for destruction of VX landmines. Destruction of the VX rockets commenced ten weeks previously [see 13 Oct].

2 January The US Department of Defense (DoD) Inspector General issued a report in March 2007 criticizing the Department's efforts to address WMD threats, so reports the *Deseret Morning News*, referring to a redacted version of the report obtained under a Freedom of Information Act request. The report is quoted as stating: "Without improved management, DoD cannot be assured that planned expenditures of at least \$9.9 billion for fiscal years 2006 through 2011 is effectively spent, that US interests are adequately protected, and that DoD can properly respond to an attack." It states that a single working group provided oversight of forty DoD offices and commands conducting programmes that included creating defences against unconventional weapons, tracking and securing potential weapons in other nations, promoting counter-proliferation pacts and aiding the destruction of weapons in the former Soviet Union. The DoD "managed each of these initiatives separately and did not coordinate initiatives within the responsible offices, even though all are interrelated", which meant that "senior DoD officials did not receive the necessary information to understand the status of DoD actions for combating WMD."

3 January BASIC, the British American Security Information Council, announces that, in order to concentrate on nuclear weapons, it is stopping publication of its *Biological Weapons Update*. The *Update* will, however, be taken over by the Institute for Security Studies based in South Africa. Chandre Gould [see 8 Nov 06] is to coordinate it.

3 January In Washington D.C., Under Secretary of State for Democracy and Global Affairs Paula Dobriansky and Libyan Secretary of American Affairs at the General People's Committee for Foreign Liaison and International Cooperation Ahmed S. Fituri sign a bilateral science and technology cooperation agreement, the first agreement between the two countries since Libya renounced its WMD programme [see 19 Dec 03]. The agreement is signed during the visit of Libyan Foreign Minister Abdelrahman Shalgham, who met with US Secretary of State Condoleezza Rice in the first meeting of the two nations' foreign ministers in 36 years. Agence France-Presse quotes Shalgham as saying: "Libya needs education, universities, rehabilitation of our infrastructure... That is the real weapon for any nation"

3 January In the USA, the Monterey Institute of International Studies releases *The Anti-plague System in the Newly Independent States, 1992 and Onwards: Assessing Proliferation Risks and Potential for Enhanced Public Health in Central Asia and the Caucasus*. The report, which was funded by the Nuclear Threat Initiative, provides an in-depth analysis of the status of the anti-plague system in the following ten republics of the former Soviet Union: Armenia, Azerbaijan, Belarus, Georgia, Kazakhstan, Kyrgyzstan, Moldova, Tajikistan, Ukraine and Uzbekistan.

7 January The UK Ministry of Defence tells the House of Commons that the "only non-lethal weapons used by our armed forces are the L104 and L67 baton guns. ... In addition to baton rounds, these weapons can also be used to fire a CS gas grenade, the L96A1, for law enforcement operations at the discretion of unit commanders in theatre." There is no mention of Agent CR or of chemical-fill cartridges [see 17 Feb 98].

7 January In the UK, the trial begins in Manchester Crown Court of two members of the Scottish National Liberation Army who had mailed bottles of caustic soda solution to a politician and a journalist. An accompanying note had said: "We want to demonstrate our intent to kill English people at random and with no discrimination or compunction. This is necessary to convince the British government that we will lethally poison England's water supplies if [the English] do not withdraw totally from Scotland." They are found guilty on 25 January under anti-terrorism legislation on two counts of using "noxious substances or things to cause harm and intimidate", and are each jailed for six years.

8 January In New Delhi, at the Institute for Defence Studies and Analyses (IDSA), the Institute for Peace and Conflict Studies and the Washington-DC-based Center for Strategic and International Studies (represented by Gerald Epstein and David Heyman) join in a workshop on *Governance for Biological Threat Reduction: A Comprehensive, International, Interdisciplinary Approach*. IDSA later publishes this summary of the proceedings: "During the conference, it was noted that the threat from biological weapons is tangible, although the historical record does not provide much precedent. The key challenge is the need to address catastrophic terrorism. Biotechnology is not only a potential source of this problem; it may also be part of the solution to help in managing this problem. The weaponisation process is very difficult for biological weapons, and some claimed that the state of the art technology for bio-weapons will only be available with states. Others, however, noted that states – and in particular, the national security agencies of states – do not in general have the level of expertise in biological science and biotechnology that can be found in academia, industry, or civilian parts of government. Nevertheless, given how hard it would be to deny states or other sophisticated actors the capability to create biological weapons, the main counter to a bioattack would be public health – an area that needs to be augmented."

8 January In Indiana, the Newport chemdemil facility has now destroyed three-quarters of its stockpile of 1,000 tons of liquid VX nerve agent, according to a Chemical Materials Agency press release. The process of VX destruction at the facility commenced nearly three years ago [see 05 May 2005].

9 January In Amsterdam the Royal Netherlands Academy of Arts and Sciences publishes *A Code of Conduct for Biosecurity*. The Academy had been asked by the Dutch Ministry of Education, Culture and Science to advise it on, and contribute to, the drawing up of a national Code of Conduct for Biosecurity as a follow-up to the 1972 Biological Weapons Convention. That request was partly based on the Statement on Biosecurity issued by the InterAcademy Panel in 2005 [see 20-22 Mar 05].

10 January In Astana, Kazakhstan, during a meeting with Kazakh Secretary of State Kanat Saudabayev, US Senator Richard Lugar says that the USA will grant Kazakhstan \$64 million within the framework of the Nunn-Lugar programme. Lugar says: "We hope that prolongation of the joint US-Kazakh framework agreement on non-proliferation for another seven years will be ratified in Kazakhstan soon and a necessary amendment will be adopted allowing the US to grant the Central Asian republic \$64 million to work in the sphere of non-proliferation."

A week later, Lugar announces that during his visit to Kazakhstan, samples of bubonic and pneumonic plague were

transported, under the Nunn-Lugar Program, by the US Air Force from Kazakhstan to the US Centers for Disease Control and Prevention where Kazakh and US scientists will develop advanced diagnostics and treatments for the plague. Lugar says: "Cooperative research by American and Kazakhstani scientists will develop prevention and cure possibilities for this deadly plague. It provides new hope for places where the disease is naturally occurring and helps deter the plague's use as a bio-terror weapon... I appreciate the cooperation of Kazakh officials with the Nunn-Lugar program in negotiating the agreement and helping secure and transport these deadly pathogens." The research will be funded through the US Department Health and Human Services Biotechnology Engagement Program. [See also 2 Sep 05]

10 January In Washington D.C., the Center for Strategic and International Studies (CSIS) launches *Towards a Grand Strategy for an Uncertain World: Renewing the Transatlantic Partnership*, which has been financed by the Dutch Noaber Foundation. Amongst other things, the report states: "Although nuclear proliferation is currently in the foreground, the dangers of proliferation in chemical weapons, biological weapons, radiological weapons and missile technology have not abated. At present, 25 countries possess WMD. Of these, 17 possess active offensive chemical weapons capabilities and 12 possess offensive biological weapons. Around 70 countries possess missiles with a range of over 1,500 km, and around 12 nations export such weapons. Counteracting these threats will require the use of all available instruments." The report does not specify the countries it refers to as possessing "offensive chemical weapons capabilities" and "offensive biological weapons". No sources are cited to substantiate the statements. It also states: "The first use of nuclear weapons must remain in the quiver of escalation as the ultimate instrument to prevent the use of weapons of mass destruction... [T]he West must be ready to resort to a pre-emptive nuclear attack to try to halt the 'imminent' spread of nuclear and other weapons of mass destruction." The authors named for the report are John Shalikashvili, the former chairman of the US Joint Chiefs of Staff and former Supreme Commander of NATO in Europe; Klaus Naumann, former German commander and former chairman of NATO's military committee; Henk van den Breemen, former Dutch Chief of Staff; Jacques Lanxade, former French Chief of Staff; and Lord Inge, Field Marshal and former UK Chief of General Staff and Defence Staff.

11 January In Washington, D.C., a lawyer representing Steven Hatfill names three federal officials who the defence team claim leaked details to the media linking Hatfill with the anthrax letters [see 15 Oct 01]. The three are: former attorney for the District of Columbia Roscoe C. Howard (2001 to 2004); Howard's criminal division chief Daniel S. Seikaly; and former Federal Bureau of Investigations (FBI) spokesman Edwin Cogswell. Hatfill is bringing a case against the authorities for waging a "coordinated smear campaign" against him [see 26 Aug 03] and is seeking the identities of FBI and Justice Department officials [see 17 Dec 04 and 16 Sep 05] who disclosed disparaging information about him to the media [see 12 Dec 02]. Speaking at the beginning of the ongoing federal court hearing [see 13 Aug 07], Mark A. Grannis says: "We have identified three of the leakers who were previously anonymous... Some of the most damaging information leaked in this case [came] straight out of the US attorney's office."

12 January South Korea has no immediate plan to participate in the US-led Proliferation Security Initiative (PSI), according to a spokesman for President-elect Lee

Myung-bak. Speaking at a press conference, Lee Dong-kwan says: "It's something we can think about over the long term, but it's not an issue that needs immediate discussion."

15 January Zambia deposits its instrument of accession to the BWC in New York, thereby making it the 160th [see 17 Aug 07] party to the Convention.

17 January In Tokyo, two Chinese youths who suffered injuries four years ago after unearthing a mustard gas shell abandoned by the Japanese Imperial Army in Dunhua, China [see 23 Jul 04], file a claim against the Japanese government for more than \$600,000 at the District Court. Sho Dong and Lui Hao claim that they began suffering from chronic respiratory ailments and deteriorating eyesight after they became exposed to the munition. Speaking to reporters after filing the claim, the lawyer representing the two, Katsuhiko Yamada, says that at the time the boys suffered blistering and severe pain, and were eventually hospitalized for more than two months. [See also 13 Mar].

18 January *The (London) Times* reports that lawyers for the Ministry of Defence (MoD) are in the latter stages of preparing an out-of-court settlement whereby it will issue a formal apology and £8,300 in compensation to each of the 369 former servicemen who volunteered to participate in chemical and biological research experiments at Porton Down in the 1950s and 1960s. The servicemen launched a group action against the MoD last year claiming that at the time they were not informed of the risks involved to their health. *The Times* quotes Ken Earl, who runs the 536-member Porton Down Veterans' Support Group, as saying: "The most important thing is that we are going to get an apology. That's what we want, an apology for what they did to us." [See also 12 Jun 06 and 14 Jul 06]

20 January *The Sydney Morning Herald* reports that thousands of barrels containing chemical weapons, including mustard gas, were stored in a tunnel at Glenbrook and other sites around Australia during the Second World War for possible use against Japanese troops. The report is based on the accounts of two veterans of the Australian Air Force, Geoff Burn and Arthur Lewis, who were members of a secret unit formed to keep watch over the stockpile. The *Herald* reports that after decades of denying the existence of the unit the Department of Defence will next month publish a book – *Chemical Warfare in Australia* by Geoff Plunkett – which, amongst other things, details how 'live trials' of chemical weapons were carried out on members of the unit. The book, which contains over 300 photographs, reveals details of the chemical warfare agents themselves, Australia's retaliatory plans, the involvement of the USA, the training of the weapons' handlers, and ultimately the chemdemil of the weapons.

20 January India has destroyed more than 90 per cent of its stockpile of chemical weapons and plans the chemdemil of the remainder by April 2009, so reports the Press Trust of India, which also refers to the most recent survey by the Indian Defence Research and Development Organization as showing that India has to date has destroyed 93 per cent of its Category 1 chemical weapons.

22 January In the USA, a team of researchers from the University of Wisconsin-Madison School of Veterinary Medicine have discovered how to genetically alter the Ebola virus so as to confine it to a set of specialized cells, thereby leading to the possibility of studying the virus outside of BSL-4 laboratories, so reports the *Proceedings of the Na-*

tional Academy of Sciences. Yoshihiro Kawaoka, professor of pathobiological sciences at the university and lead author of the study, states that containing the virus depends on a single gene known as VP30, which makes a protein that enables it to replicate in host cells. Without the protein, he says, the virus cannot grow.

23 January The Iranian negotiator on nuclear issues Saeed Jalili says, in a speech to the European Parliament, that chemical weapons “have no place in [Iranian] defence doctrine”, so reports IRNA news agency.

23 January From The Hague, in an update on the status as of this date of implementation of the CWC [see 23 May 07], the OPCW Technical Secretariat states that, of the 183 CWC parties, 176, or 96 per cent, have now designated national authorities; 124, or 68 per cent, have made Article VII(5) submissions; 78, or 43 per cent, now have legislation covering all key areas; 107, or 58 per cent, have provided text of measures adopted; and 59, or 32 per cent, have made confirmations regarding Article XI(2e) Review.

23 January US President George Bush and his top officials delivered several hundred false statements about Iraq’s WMD capabilities and ties to al-Qaeda in the two years after the terrorist attacks on 11 September 2001, which “were part of an orchestrated campaign that effectively galvanized public opinion and, in the process, led the nation to war under decidedly false pretences”, according to a report by the Center for Public Integrity. The report states that on more than 500 separate occasions top officials made assertions that “stated unequivocally that Iraq had weapons of mass destruction (or was trying to produce or obtain them), links to al-Qaeda, or both”. “This concerted effort”, the report says, “was the underpinning of the Bush administration’s case for war.” Bush himself made more inaccurate statements than any other, with 232 about Iraq’s WMD capabilities and 28 linking the Iraqi government to al-Qaeda, the study found. The report concludes: “The cumulative effect of these false statements – amplified by thousands of news stories and broadcasts – was massive, with the media coverage creating an almost impenetrable din for several critical months in the run-up to war.” The Center describes itself as “a nonprofit, nonpartisan, non-advocacy, independent journalism organization based in Washington, D.C.”.

23 January In Oregon, the Umatilla chemdemil facility destroys the last of its stockpile of 14,519 M55 VX nerve agent rockets and warheads. In a press release, the Chemical Materials Agency states that the VX rockets were the last of a total of 105,961 VX-filled and sarin-filled rockets destroyed in Oregon, and the last self-propelled chemical munitions stored at the facility. The VX rocket disposal campaign began three months ago [see 29 Oct 07]. According to the Agency, the facility’s current stockpile includes VX artillery projectiles, VX land mines, and mustard agent ‘ton’ containers. The facility will now perform a ‘changeover’ so as to begin the process of destroying its 155mm VX artillery projectiles.

24 January The Bulgarian Council of Ministers has approved a draft six-year agreement between Bulgaria and the USA on cooperation in the prevention of the proliferation of WMD and related technologies, materials and experience to and from the territory of Bulgaria, so reports BTA news agency. According to BTA, the signing of the agreement will create a legal framework for Bulgaria to be included in the Second Line of Defence programme of the US Department of Energy.

24 January At OPCW headquarters, the first in a new series of lectures by outside speakers takes place. The series, which is sponsored by the UK government, aims to stimulate debate and illustrate alternative perspectives. Speaking on this occasion is Richard Guthrie, formerly of the Harvard Sussex Program and the Stockholm International Peace Research Institute, on *Tackling Ambiguities: Lessons for the Review Conference from the Chemical Weapons Convention Negotiations*.

24 January In Springfield, Massachusetts, a seven-count indictment is unsealed in US District Court charging Michael A Crooker with possession of toxins for use as a weapon, with threat to use a weapon of mass destruction, and with related charges. The toxins are ricin and abrin in the form, respectively, of castor beans and rosary peas, in which the toxins occur naturally.

24 January In the USA, the American Academy for the Advancement of Science (AAAS) holds a workshop on *Microbial Forensics: The Nexus between Law Enforcement and Public Health*. A presentation on *History, Strategy and Future of Microbial Forensics* is made by Randall S Murch of the Center for Technology, Security and Policy at Virginia Tech. The event is jointly organized by Virginia Tech and King’s College London.

24 January The US Department of the Army releases *Chemical, Biological, Radiological, Nuclear, and High Yield Explosives Operational Headquarters*. The purpose of the interim field manual is to facilitate the operations and training requirements of the CBRNE operational headquarters as it organizes, prepares for, and conducts operations. It is intended that the manual will evolve into an official field manual once lessons learned from training and operational experiences are incorporated therein. The manual examines the operational environment that apply to the CBRNE operational headquarters; provides a description of the CBRNE operational headquarters, its subordinate elements and key augmentation that will typically support the headquarters; lays the foundations and framework combating WMD across the spectrum of conflict and in support of full spectrum operations; discusses WMD elimination operations that are the focus for the CBRNE operational headquarters; provides the basic construct of command, control, and support relationships as they are likely to impact on the CBRNE operational headquarters, its subordinate elements, and other potential augmentation as the CBRNE headquarters and its elements conduct operational missions; and discusses sustaining the CBRNE operational headquarters and its subordinate elements.

25 January The Russian FSB security service releases a statement stating that Russian agents “have uncovered spying attempts by Western and Asian spy agencies in enterprises specialising in nuclear energy, biology and nanotechnology work” in Novosibirsk, Siberia in 2007. Interfax news agency quotes local head of the Russian Federal Security Service (FSB) Sergei Savchenkov as saying that several foreign nationals including a Chinese citizen have been deported for trying to obtain information on technology for making weapons of mass destruction. “They were interested in the developments made by the Siberian branch of the Russian Academy of Sciences,” says Savchenkov. “We discovered that foreign intelligence agencies from the West and Asia were interested in nuclear energy, biological information and cutting-edge scientific developments in the field of nano-technology.”

27 January In the USA, in an interview on CBS Television's *60 Minutes*, an agent with the Federal Bureau of Investigations who interviewed former Iraqi leader Saddam Hussein for seven months following his capture [see 13 Dec 03], says that Hussein refused to reject claims that Iraq possessed WMD because he wanted to deter an Iranian attack and did not believe that not doing so would trigger a US invasion. George Piro says: "He told me he initially miscalculated ... President [George] Bush's intentions... He thought the United States would retaliate with the same type of attack as we did in 1998 ... a four-day aerial attack... For him, it was critical that he was seen as still the strong and defiant Saddam ... He thought that [claiming he had such weapons when he did not] would prevent the Iranians from reinvading Iraq... [He] still had the engineers. The folks that he needed to reconstitute his program are still there... He wanted to pursue all of WMD ... to reconstitute his entire WMD program."

29 January The UK Ministry of Defence announces that it has awarded a \$13.1-million contract for 44,000 suits – designed to fit over standard military uniforms and incorporate sealed respirators – to protect military personnel responding to a CBRN attack. In a press statement, Under Secretary of State and Defence Equipment and Support Minister Baroness Ann Taylor says: "Individual protection is of the highest priority and these suits will allow our troops to maintain the tempo of operations should there be a chemical, nuclear or biological incident... This order [...] will build on improvements we have already made to the protection of our forces against nuclear, biological and chemical threats." The Ministry says that it has also purchased truck-mounted biological detection equipment, portable chemical agent sensors, and tactical radiation detection and monitoring equipment in preparation for a possible WMD attack.

30 January The Indonesian National Police is to establish an "agency for anticipating acts of bioterrorism" says its Head of Interpol International Cooperation, Senior Commissioner Desman Sinaga, in Jakarta. The agency is to be a "model project for southeast Asian countries" and is to involve several existing institutions: Special Anti-Terror Detachment 88; the Police Medicine and Health Centre; the Police Forensic Laboratory Centre; the Indonesian Army Nuclear and Biochemical Company; the Nuclear and Biochemical Directorate of the State Intelligence Agency; the Department of Health; and the Department of Agriculture. It is to meet for the first time next month.

30 January In Brussels, the North Atlantic Treaty Organization (NATO) has joined the Global Public Health Intelligence Network (GPHIN) on a trial basis with a system that monitors the international media for indications of disease outbreaks, so reports United Press International. Richard Lemay, a senior surveillance officer for the Canadian based GPHIN, describes the network as an "early warning system using the media to detect public health Events". He says: "[NATO is] piloting the GPHIN system to see whether it can fulfill some of their public health surveillance needs... If we have a request (to join), we will assess [...] whether it fits the GPHIN mandate."

30 January In Chantilly, Virginia, there is a conference on *Defense in Depth Against WMD Threats: Preparedness at Home and Abroad*, which is sponsored by the Defense Threat Reduction Agency, the US Air Force and the

US Air Force Counter-proliferation Center. Among those speaking is US Senator Richard Lugar [see also 16 Jan].

31 January The UK Defence Ministry announces that it has reached an amicable settlement with the Porton Down Veterans' Group that has long been seeking compensation [see 5 Sep 06] for illnesses believed to be associated with participation in volunteer trials at the Chemical Defence Establishment during the cold war [see 18 Jan]. The settlement is without admission of liability by the Ministry, but involves payment of £8,300 to each of 369 veterans. The following apology is also issued:

"The Government have in the past made clear the debt owed by the nation to those who took part in the trials at Porton Down designed to ensure that the United Kingdom had the defensive and deterrent capabilities to counter the real and horrific threat that chemical weapons would be used against our armed forces or civilian population, as they had against others; the security of the country rested on these trials and the contribution of those who took part in them.

"The trials were in many cases conducted under considerable pressures of time as new threats emerged. The Government accept that there were aspects of the trials where there may have been shortcomings and where, in particular, the life or health of participants may have been put at risk. The Government sincerely apologise to those who may have been affected."

31 January In the USA, the Commission on the National Guard and Reserves releases a report which concludes, amongst other things, that the USA "does not have sufficient trained, ready forces available" to respond to an incident involving WMD, and that there exists "an appalling gap that places the nation and its citizens at greater risk". In total, the 400-page report sets out nearly a hundred recommendations, including that state governors should be given the authority to direct active-duty troops to respond to emergencies in their states. The Commission, chaired by Marine Corps Major General Arnold Punaro, is charged by Congress to recommend changes in law and policy concerning the Guard and Reserves.

The next day, Assistant Secretary for Homeland Defense Paul McHale rejects the conclusions of the report thus: "We are prepared to respond... We are not prepared to respond with the speed, the efficiency and the effectiveness that we intend to achieve."

Two weeks later, Senate Homeland Security and Governmental Affairs Committee Chairman Joseph Lieberman conducts a hearing on the report. He says: "The challenges of response to a nuclear or biological attack where only the Department of Defense has the medical assets, the logistical capability, and the sheer manpower needed to respond would be immense... The key players – the National Guard Bureau, Northern Command, the Department of Homeland Security, other federal agencies, and the States and localities – must be integrated seamlessly in order to be ready to respond effectively... Are we as ready as we should be? The Commission says no, and I find its answer to be convincing... That gives us the responsibility together to fix that." [See also 19 Jan 07]

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

Forthcoming Events

17-22 August 2008

Big Sky, Montana, USA
Gordon Research Conference on Science and Technology Policy
Governing Emerging Technologies
Details: www.grc.org

18-22 August 2008

Geneva, Switzerland
BWC Meeting of Experts, 2008
Details: www.unog.ch/bwc

18-19 September 2008

University of Bath, UK
Workshop on *Towards a Framework Convention on Bio-chemical Controls: Addressing Conceptual and Practical Issues*
By invitation only

26-28 September 2008

Wiston House, Sussex, UK
Wilton Park Conference on
Counterproliferation of Biological Threat Agents
Details: www.wiltonpark.org.uk

14-17 October 2008

OPCW Headquarters, The Hague
54th Session of the OPCW Executive Council
Details: www.opcw.org

24-25 October 2008

Como, Italy
IWG-LNCV Workshop and Round Table on
Global WMD Knowledge Proliferation Prevention and Human Engagement Programs Worldwide
By invitation only

13-16 November 2008

Zagreb, Croatia
NATO Advanced Research Workshop on
The Role of Independent Scientists in Assessing the Threat of Weapons of Mass Destruction
By invitation only

29-30 November 2008

Geneva, Switzerland
29th Workshop of the Pugwash Study Group on Implementation of the CBW Conventions
By invitation only

1-5 December 2008

Geneva, Switzerland
2008 Meeting of BWC States Parties
Details: www.unog.ch/bwc

2-5 December 2008

OPCW Headquarters, The Hague
13th Session of the OPCW Conference of the States Parties
Details: www.opcw.org

Recent Publications

Al-Rodhan, Nayef R F, Lyubov Nazaruk, Marc Finaud and Jenifer Mackby. *Global Biosecurity: Towards a New Governance Paradigm*, Geneva: Éditions Slatkine, 2008, 247 pp.

Arms Control Association. *An Arms Control Today Reader*, "The 2008 Chemical Weapons Convention Review Conference: A collection of articles, essays, and interviews on tackling the threats posed by chemical weapons, Washington, DC: Arms Control Association, April 2008, 54 pp.

Atlas, Ronald M. "Toward global harmonization for control of dual-use biothreat agents", *Science and Public Policy* vol 35 no 1 (February 2008) pp 21-27.

Avenhaus, Rudolf, Nicholas Kyriakopoulos, Michel Richard and Gotthard Stein. Editors, *Verifying Treaty Compliance: Limiting Weapons of Mass Destruction and Monitoring Kyoto Protocol Provisions*, Berlin & Heidelberg, 2006, 14 + 629 pp.

Balmer, Andrew, and Paul Martin. *Synthetic Biology: Social and Ethical Challenges*, University of Nottingham: Institute for Science and Society, May 2008, 36 pp.

Barak, Eitan. "Forever stuck in the mud? Implementation of the Chemical Weapons Convention in the Middle East – the tenth anniversary of its entry into force", in Ralf Trapp, editor, *OPCW Academic Forum Conference Proceedings*, The Hague: Netherlands Institute of International Relations (2008), pp 69-79.

Binder, Markus K. "Sea-dumped chemical weapons: an old problem resurfaces", *WMD Insights*, March 2008.

Black, Robin M. "An overview of biological markers of exposure to chemical warfare agents", *Journal of Analytical Toxicology*, vol 32 no 1 (January/February 2008) pp 2-9.

Brandt, Aric W, Michael W Sanderson, Brad D DeGroot, Dan U Thomson and Larry C Hollis. "Biocontainment, biosecurity, and security practices in beef feedyards", *Journal of the American Veterinary Medical Association* vol 232 no 2 (15 January 2008) pp 262-69.

Brewer, Peter G, and Noriko Nakayama. "What lies beneath: a plea for complete information [about CW sea-burial sites]", *Environmental Science & Technology* vol 42 no 5 (1 March 2008) pp 1394-99.

Byman, Daniel. "Iran, terrorism, and weapons of mass destruction", *Studies in Conflict & Terrorism* vol 31 (2008) no 3, pp 169-81.

Coupland, Robin. "Security, insecurity and health", *Bulletin of the World Health Organization* vol 85 no 3 (March 2007) pp 181-84.

Daschle, Tom, with Tara O'Toole. "Biodefence in the 21st Century", a submission to the IPPR Commission on National Security for the 21st Century, June 2008, 8 pp.

Daoudi, Mohamed, and Ralf Trapp. "Verification under the Chemical Weapons Convention", in Rudolf Avenhaus *et al*, editors, *Verifying Treaty Compliance: Limiting Weapons of Mass Destruction and Monitoring Kyoto Protocol Provisions*, Berlin & Heidelberg, 2006, pp 77-106.

- Davies, Sara E. "Securitizing infectious disease", *International Affairs* (London), vol 84 no 2, pp 295-313, March 2008.
- Edwards, Philippa, and Robert L Maynard. "An A-Z of compounds of interest in relation to chemical warfare and other malevolent uses of poisons", in Timothy C Marrs, Robert L Maynard and Frederick R Sidell, editors, *Chemical Warfare Agents: Toxicology and Treatment*, second edition, Chichester, UK: John Wiley, 2007, pp 663-708.
- Emanuel, Peter A, and Isaac R Fruchey. *Biological Detectors: Market Survey, 2007 Edition*, US Army Edgewood Chemical Biological Center, 2007, 334 pp.
- Enemark, Christian. "'Non-lethal' weapons and the occupation of Iraq: technology, ethics and law", *Cambridge Review of International Affairs* vol 21 no 2, pp199-215, June 2008.
- Engel, Charles C, Steven Locke, Dori B Reissman, Robert DeMartino, Ilan Kutz, Michael McDonald and Arthur J Barsky. "Terrorism, trauma, and mass casualty triage: how might we solve the latest mind-body problem?", *Biosecurity and Bioterrorism* vol 5 (2007) no 2 pp 155-63.
- Epstein, Gerald L. "The challenges of developing synthetic pathogens", *Bulletin of the Atomic Scientists* web edition, 19 May 2008.
- Feakes, Daniel. "The in-depth implementation of the Chemical Weapons Convention and the Second Review Conference", in Ralf Trapp, editor, *OPCW Academic Forum Conference Proceedings*, The Hague: Netherlands Institute of International Relations (2008), pp 99-118.
- Feakes, Daniel. "Getting down to the hard cases: prospects for CWC universality", *Arms Control Today* vol 38 no 2 (March 2008) pp 12-17.
- Feakes, Daniel, and Caitriona McLeish. *Resource Guide for the Second CWC Review Conference 2008*, Harvard Sussex Program, in cooperation with TMC Asser Press, March 2008, 432 pp.
- Fehl, Caroline. "Living with a reluctant hegemon: the transatlantic conflict over multilateral arms control", *European Journal of International Relations* vol 14 (2008) no 2, pp 259-87.
- Fidler, David P, and Lawrence O Gostin. *Biosecurity in the Global Age: Biological Weapons, Public Health, and the Rule of Law*, Stanford University Press, 2008, 306 pp.
- Finley, Patrick, James Ramsey, Brad Melton and Sean A McKenna. "Using GIS technology to manage information following a bioterrorism attack", *Journal of Map & Geography Libraries* vol 4 (2007) no 1 pp 207-20.
- Gibson, Stacey, Louise Lemyre, Mélanie Clément, Marie-Pierre L Markon and Jennifer E C Lee. "Terrorism threats and preparedness in Canada: the perspective of the Canadian public", *Biosecurity and Bioterrorism* vol 5 (2007) no 2 pp 134-44.
- Girard, Marion. "Political decisions and Britain's chemical warfare challenge in World War I: descend to atrocities?", *Defence Studies* vol 8 no 1 (March 2008) pp 105-32.
- Hardacre, Helen. "Aum Shinrikyo and the Japanese media: the Pied Piper meets the Lamb of God", *History of Religions*, vol 47 no 2 (November 2007) pp 171-204.
- Hart, John. "The continuing legacy of old and abandoned chemical weapons", *Arms Control Today*, vol 38 no 2 (March 2008) pp 55-59.
- Hasegawa, Guy R. "Proposals for chemical weapons during the American Civil War", *Military Medicine* vol 173 no 5 (May 2008) pp 499-506.
- Henderson, Ian. "Has ten years of performing routine inspections helped prepare the OPCW Technical Secretariat for the event of a challenge inspection? ", in Ralf Trapp, editor, *OPCW Academic Forum Conference Proceedings*, The Hague: Netherlands Institute of International Relations (2008), pp 123-34.
- Heupel, Monika. "The Proliferation Security Initiative: advancing commitment and capacity for WMD interdictions", *Disarmament Forum* [UNIDIR], 2007 no 4, pp 57-66.
- Heupel, Monika. "Combining hierarchical and soft modes of governance: the UN Security Council's approach to terrorism and weapons of mass destruction proliferation after 9/11", *Cooperation and Conflict: Journal of the Nordic International Studies Association* vol 43 (2008) no 1, pp 7-29.
- Heupel, Monika. "Surmounting the obstacles to implementing UN Security Council resolution 1540", *The Nonproliferation Review*, vol 15 no 1, pp 95-102, March 2008.
- Johnson, Larry D. "Protecting the world from weapons of mass destruction: reflections on the *High-level Panel Report on Threats, Challenges and Change* [to the UN Secretary-General]", *California Western International Law Journal* vol 38 (2007) pp 64-74.
- Kaliadin, Aleksandr, translated from the Russian by Larisa Galperin. "In search of an effective coercive strategy to deter use of weapons of mass destruction", *Russian Social Science Review* vol 49 no 2 (March-April 2008) pp 77-93.
- Kassenova, Togzhan. "Central Asia: regional security and WMD proliferation threats", *Disarmament Forum* [UNIDIR], 2007 no 4, pp 13-23.
- Kerr, Paul K. "Nuclear, biological, and chemical weapons and missiles: status and trends", *CRS Report for Congress* RL30699, 20 February 2008, 28 pp.
- Krutzsch, Walter, and Adolf von Wagner. "CWC implementation and new developments: how to adapt CWC implementation to the new security environment and to the changes in chemical science and technology? ", in Ralf Trapp, editor, *OPCW Academic Forum Conference Proceedings*, The Hague: Netherlands Institute of International Relations (2008), pp 163-83.
- Laughton, Adam H. "Somewhere to run, somewhere to hide?: International regulation of human subject experimentation", *Duke Journal of Comparative and International Law* vol 18 no 1 (Fall 2007) pp 181-212.
- Lentzos, Filippa. "Countering misuse of life sciences through regulatory multiplicity", *Science and Public Policy* vol 35 no 1 (February 2008) pp 55-64.
- Littlewood, Jez. "Managing biological disarmament: the UK experience", *Science and Public Policy* vol 35 no 1 (February 2008) pp 13-20.
- Lutes, Colonel Charles D, USAF. "Combating WMD threats", in Stephen J Flanagan and James A Schear (editors), *Strategic Challenges: America's Global Strategic Agenda*, Washington, DC: National Defense University Press and Potomac Books, Inc, released January 2008, pp 61-85 and 352-55.
- Mayor, Shane D, Paul Benda, Christina E Murata and Richard J

- Danzig. "LIDARs: a key component of urban biodefense", *Biosecurity and Bioterrorism* vol 6 (2008) no 1 pp 45-56.
- McCleskey, Edward, Diana McCord, Jennifer Leetz and John Markey. *Underlying reasons for success and failure of terrorist attacks: selected case studies*, Arlington, VA: Homeland Security Institute, 4 June 2007, 166 pp.
- McLeish, Caitriona. "From disarmament to technology governance: the changing function of the Chemical Weapons Convention", in Ralf Trapp, editor, *OPCW Academic Forum Conference Proceedings*, The Hague: Netherlands Institute of International Relations (2008), pp 285-300.
- McLeish, Caitriona, and Daniel Feakes. "Biosecurity and stakeholders: the rise of networks and non-state actors", *Science and Public Policy* vol 35 no 1 (February 2008) pp 5-12.
- Marrs, Timothy C. "Toxicology of organophosphate nerve agents", in Timothy C Marrs, Robert L Maynard and Frederick R Sidell, editors, *Chemical Warfare Agents: Toxicology and Treatment*, second edition, Chichester, UK: John Wiley, 2007, pp 191-221.
- Marrs, Timothy C, Robert L Maynard and Frederick R Sidell. Editors, *Chemical Warfare Agents: Toxicology and Treatment*, second edition, Chichester, UK: John Wiley, 2007, 738 pp.
- Mauroni, Albert J. *Where are the WMDs? The Reality of Chem-Bio Threats on the Home Front and the Battlefield*. Annapolis, MD: Naval Institute Press [an Association of the US Army Book], 2006, 333 pp.
- Maynard, Robert L. "Opinions of chemical warfare", in Timothy C Marrs, Robert L Maynard and Frederick R Sidell, editors, *Chemical Warfare Agents: Toxicology and Treatment*, second edition, Chichester, UK: John Wiley, 2007, pp 1-20.
- Meyer, N, J McMenamin, C Robertson, M Donaghy, G Allardice and D Cooper. "A multi-data source surveillance system to detect a bioterrorism attack during the G8 Summit in Scotland", *Epidemiology and Infection* vol 136 (2008) pp 876-85.
- Miller, Richard B. "Justifications of the Iraq War examined", *Ethics & International Affairs* vol 22 no 1 (Spring 2008) pp 43-67.
- Miller, Seumas, and Michael J Selgelid. "Ethical and philosophical consideration of the dual-use dilemma in the biological sciences", *Science and Engineering Ethics* vol 13 no 4 (December 2007) pp 523-80.
- Momtaz, Djamchid. "Non proliferation of chemical weapons through export control", in Ralf Trapp, editor, *OPCW Academic Forum Conference Proceedings*, The Hague: Netherlands Institute of International Relations (2008), pp 135-38.
- Moodie, Michael and Robert E Armstrong with Tyler Merkeley. "Responding in the homeland: a snapshot of NATO's readiness for CBRN attacks", *Defense Horizon* [National Defense University: Center for Technology and National Security Policy] no 56 (June 2007) pp 1-6.
- Nayan, Rajiv. "US policy on dual-use technology transfers to China", *Strategic Analysis* vol 31 no 4 (July 2007) pp 553-81.
- Neill, Donald A. "Riot control and incapacitating agents: 'a very awkward situation'", in Ralf Trapp, editor, *OPCW Academic Forum Conference Proceedings*, The Hague: Netherlands Institute of International Relations (2008), pp 197-208.
- Nixdorff, Kathryn. "Biological Weapons Convention", in Rudolf Avenhaus *et al*, editors, *Verifying Treaty Compliance: Limiting Weapons of Mass Destruction and Monitoring Kyoto Protocol Provisions*, Berlin & Heidelberg, 2006, pp 107-34.
- Pearson, Alan, Jonathan B Tucker, Pal Aas and Ralf Trapp. "Roundtable: The expanding range of biowarfare threats", *Bulletin of the Atomic Scientists*, web edition, www.thebulletin.org/web-edition/roundtables/the-expanding-range-of-biowarfare-threats, accessed 31 May 2008.
- Phillips, A P, and J P P Robinson, "The CWC and chemicals of biological origin", in Ralf Trapp, editor, *OPCW Academic Forum Conference Proceedings*, The Hague: Netherlands Institute of International Relations (2008), pp 209-19.
- Pica-Branco, Denise, and Ronald P Hudak. "US military service members' perceptions of the Anthrax Vaccine Immunization Program", *Military Medicine* vol 173 no 5 (May 2008) pp 429-33.
- Plunkett, Geoff. *Chemical Warfare in Australia: Australia's Involvement in Chemical Warfare 1914-1945*, Loftus: Australian Military History Publications, 2007, 733 pp.
- Race, Margaret S, and Edward Hammond. "An evaluation of the role and effectiveness of Institutional Biosafety Committees in providing oversight and security at biocontainment laboratories", *Biosecurity and Bioterrorism* vol 6 (2008) no 1 pp 19-35.
- Rappert, Brian. "The benefits, risks, and threats of biotechnology", *Science and Public Policy* vol 35 no 1 (February 2008) pp 37-43.
- Rappert, Brian. "Codes of conduct and biological weapons: an in-process assessment", *Biosecurity and Bioterrorism* vol 5 (2007) no 2 pp 145-54.
- Revill, James, and Malcolm Dando. "Life scientists and the need for a culture of responsibility: after education ... what?", *Science and Public Policy* vol 35 no 1 (February 2008) pp 29-35.
- Robinson, J P Perry. "Difficulties facing the Chemical Weapons Convention", *International Affairs* (London), vol 84 no 2, pp 223-39, March 2008.
- Robinson, J P Perry. "Non lethal warfare and the Chemical Weapons Convention", submission to the OPCW Open-Ended Working Group on Preparations for the Second CWC Review Conference", 24 October 2007, 37 pp, www.sussex.ac.uk/Units/spru/hsp/Papers/421rev3.pdf.
- Roffey, Roger. *EU-Russian partnership to reduce bio-threats and fight disease outbreaks*, Stockholm: FOI [Swedish Defence Research Agency], Division of Defence Analysis, report no FOI-R-2493-SE, March 2008, 102 pp.
- Rosner, David, and Gerald Markowitz. *Are We Ready? Public Health Since 9/11*, University of California Press, 2006, 193 pp.
- Shoul, Simeon. "British tear gas doctrine between the world wars", *War in History* vol 15 no 2 (April 2008) pp 168-90.
- Shuster, Richard J. "The Iraq Survey Group: from weapons of mass destruction to counterinsurgency", *The Journal of Strategic Studies* vol 31 no 2 (April 2008) pp 229-56.
- Sidell, Frederick R. "A history of human studies with nerve agents by the UK and USA", in Timothy C Marrs, Robert L Maynard and Frederick R Sidell, editors, *Chemical Warfare*

- Agents: Toxicology and Treatment*, second edition, Chichester, UK: John Wiley, 2007, pp 223-39.
- Singh, Jerome Amir. "Project Coast: eugenics in apartheid South Africa", *Endeavour* vol 32 (2008) no 1 pp 5-9.
- Stock, Thomas. "Old and Abandoned Chemical Weapons under the CWC – challenges and realities", in Ralf Trapp, editor, *OPCW Academic Forum Conference Proceedings*, The Hague: Netherlands Institute of International Relations (2008), pp 25-46.
- Thompson, Benjamin P, and Lawrence C Bank. "Survey of bioterrorism risk in buildings", *Journal of Architectural Engineering* vol 14 no 1 (March 2008) pp 7-17.
- Trapp, Ralf. Editor, *OPCW Academic Forum Conference Proceedings*, The Hague: Netherlands Institute of International Relations (2008), 311 pp.
- Trapp, Ralf. "Advances in science and technology and the Chemical Weapons Convention", *Arms Control Today* vol 38 no 2 (March 2008) pp 18-22.
- Tucker, Jonathan B. "The body's own bioweapons", *Bulletin of the Atomic Scientists*, vol 64 no 1 (March/April 2008) pp 16-22 and 56-57.
- USA, National Research Council, Board on Mathematical Sciences and Their Applications. *Interim Report on Methodological Improvements to the Department of Homeland Security's Biological Agent Risk Analysis*, Washington, DC: The National Academies Press, 2007, 24 pp.
- Vogel, Kathleen M. "Framing biosecurity: an alternative to the biotech revolution model? ", *Science and Public Policy* vol 35 no 1 (February 2008) pp 45-54.
- Walker, Paul F. "Facilitating safe and sound elimination of chemical weapons in the US and RF", in Ralf Trapp, editor, *OPCW Academic Forum Conference Proceedings*, The Hague: Netherlands Institute of International Relations (2008), pp 47-57.
- Wanjura, Tyson. "International standards for managing emerging and re-emerging zoonoses of public health significance: a call for horizontal collaboration between intergovernmental organizations", *The International Lawyer* vol 41 no 3 (Fall 2007) pp 975-99.
- Wessely, Simon. "Commentary on 'Terrorism, trauma, and mass casualty triage [Charles C Engel *et al*, 2007]", *Biosecurity and Bioterrorism* vol 5 (2007) no 2 pp 164-67.
- Wijngaard, Cees van den, Liselotte van Asten, Wilfrid van Pelt, Nico J D Nagelkerke, Robert Verheij, Albert J de Neeling, Arnold Dekkers, Marianne A B van der Sande, Hans van Vliet and Marion P G Koopmans. "Validation of syndromic surveillance for respiratory pathogen activity", *Emerging Infectious Diseases* vol 14 no 6 (June 2008) pp 917-25.
- Wilson, Kumanan, Christopher McDougall, David P Fidler and Harvey Lazar. "Strategies for implementing the new International Health Regulations in federal countries", *Bulletin of the World Health Organization* vol 86 no 3 (March 2008) pp 215-20.
- Zakharchenko, Anna I. *The EU and US strategies against terrorism and proliferation of WMD: a comparative study*, Garmisch-Partenkirchen: The George C Marshall European Center for Security Studies, Occasional Paper Series no 6, January 2007, 41 pp.

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