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THE OPCW: REFLECTING ON THE MODEL

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As the Organization for the Prohibition of Chemical Weapons (OPCW) begins serious deliberations for the selection of its third Director General of the Technical Secretariat, some reflections on its history and possible future may be in order. The politics of the Cold War and the 20th Century were crucial elements in forging both the Chemical Weapons Convention (CWC) that spawned the OPCW and the structures, both technical and political, that comprise it. Remembering the rationales that created its institutions and procedures may help think about how to maintain effectiveness, efficiency, and relevance in the altered international security environment now and for the next decades.

The CWC generated international agreement because it was the only disarmament treaty effort effectively addressing the chemical weapons threat. The Non-Proliferation Treaty (NPT), to at least contain the nuclear genie, and the Biological Weapons Convention (BWC), to prohibit biological weapons, were already in place with widespread (although not universal) adherence. But the weapon of mass destruction that had been employed the most widely and most recently was still considered a legitimate national capability, weakly and inconclusively restrained by the 1925 Geneva Protocol. The two principal Cold War antagonists maintained sizable, militarily relevant stockpiles, were engaged in active research for improved agents, and routinely exercised CW defensive measures as a “normal” part of preparedness drills. The number of countries believed to be developing CW stockpiles was growing throughout the 1970’s, as the technology became more available and countries incapable of pursuing a nuclear weapons capability began to perceive CW as an alternative - used for threat, for deterrence, and for prestige.

This situation generated enough concern to create the political capability to empower the Committee of the Conference on Disarmament (CCD) and its successor, the Conference on Disarmament (CD) to embark, in 1974, upon exploratory discussion and, later, actual negotiation of chemical disarmament. These negotiations, however, were desultory for the next decade, until the United States, in the person of Vice-President George H W Bush, tabled in April of 1984 a draft (document CD 500) containing both the elements of a Convention banning all chemical weapons, demanding the destruction of all existing stockpiles, and, most importantly, providing for verification by international

inspection that countries were not cheating by clandestinely continuing chemical weapons programs.

The resulting Chemical Weapons Convention, opened for signature in 1993 and entering into force on 29 April 1997, emerged as arguably the most successful multilateral arms control agreement of all time. It surprised many expert observers by the number of countries who declared chemical weapons inventories, the accuracy of the declarations by the Russian Federation, and its relatively rapid spread to near-universal adherence. The just-ended US Administration favored the term “effective multilateralism,” to differentiate those places where multilateral diplomacy and action can act as multipliers of national effort, as opposed to those where they weaken and confuse national objectives. The CWC certainly stands as an example of such “effective multilateralism.”

The Reagan Administration, however, was in reality more interested in producing binary chemical weapons to replace the obsolescent US stockpile than they were in agreeing to a Chemical Weapons Convention. But active negotiation was one of the requirements (along with destruction of the unitary stockpile) imposed by a Democrat-controlled US Congress for providing funds for binary production. So one element of the draft treaty was the concept of “anytime, anywhere, without right of refusal” challenge inspections, which senior elements of the Administration were certain would be unacceptable to the Soviet Union. When the Soviets

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unexpectedly agreed to negotiate the concept, the thorniest problem of the negotiations throughout the administration of George H W Bush was how now to reconcile the principle of challenge inspections with requirements of inviolable national security, including both nuclear stockpiles and intelligence activities.

Managed access, including a hard-fought timeline for arrival of inspectors at the challenged site, eventually became acceptable to all the parties in the CD. (Of note, the CD during the end game of the CWC negotiations comprised only 39 states. It is arguable that the current expanded size of the CD would have made it much more difficult, if possible at all, to achieve the CWC today under CD rules of procedure.) This complex procedure, especially with the immense political baggage attached to it both during negotiations and subsequent ratification hearings in the US, became a focal point for the operations of the OPCW, both within the Technical Secretariat (500 people) and the Executive Council (rotating amongst 41 States Parties). In the twelve years the CWC has been in force, there has never been a challenge inspection requested, let alone conducted. But despite the subsequent end of the Cold War, immense progress in destruction of declared chemical weapons stockpiles, increased confidence in the accuracy of the inventory of remaining stockpiles in both Russia and the US, and a major shift in the CW threat from clandestine national stockpiles to terrorist acquisition, there seems to be a continuing fear of both the potential exposure of “other national security secrets” during the conduct of a challenge inspection and significant damage to the OPCW if a challenge inspection did not discover a “smoking gun” of a significant violation of the CWC. A corollary political difficulty with a challenge inspection is that most of the countries of potential chemical concern are also states with a number of other international issues, almost guaranteeing that any challenge inspection in those countries would carry significant non-chemical-related political baggage to obfuscate both the debate about approving the inspection and any conclusions reached by the inspectors.

The challenge for the OPCW (most especially the Executive Council) is to find a way to modify the political impact of a challenge inspection, or even to find an alternative mechanism to resolve CWC “issues”. If a challenge inspection can become something with a lower profile, where it does not absolutely challenge on the one hand the fundamental compliance of the challenged party, and on the other hand undermine the very credibility of the entire Convention if it fails to discover incontrovertible evidence of CW, it may become a useful instrument of confidence-building. If not, then it will soon be time for the OPCW to recognize it is not a real instrument. Lowering the challenge inspection profile could also permit entertaining the concept of debate in the Executive Council about the parameters of a challenge, which could go a long way to alleviating fears, especially among some of the countries not yet party to the CWC, that a challenge inspection would be a way deliberately to attempt to penetrate non-chemical critical security functions.

One success story in the OPCW is its ability, over the twelve years of its existence, to remain a (relatively) small international organization, where hiring has focused on the “technical” of Technical Secretariat and the competence of the inspectorate has been commendable. Widespread concerns

at inception of the organization about how inspections could draw credible conclusions about compliance without putting proprietary information at risk have proven largely groundless. Rogelio Pflirter as the Director-General, along with John Gee and John Freeman in the role of Deputy Director-General and Ron Manley and Horst Reeps as Directors of Verification can take deserved credit for cultivating a high level of competence at low manpower levels.

But the OPCW faces a coming issue of reforming itself if it is to continue to be successful, command international respect, and maintain the interest and energy of the participating states. To date, the CWC has been a disarmament treaty – aimed first at eliminating an existing WMD threat, significant national CW stockpiles. Whether or not Russia and the US complete destruction of their stockpiles by 28 April 2012 (more on this question later), the declared national stockpiles of parties to the CWC are a diminishing concern to international security. That means the CWC and the OPCW are fast becoming principally nonproliferation instruments, not disarmament instruments.

Nonproliferation in this context is a broad concern. It encompasses not only the possibility of states deciding that a CW breakout capability is a national requirement (given advances in technology, it becomes increasingly irrelevant to produce and store stockpiles of CW for even national requirements less than large-scale warfare) but also the threat of sub-national actors creating a CW capability for either domestic or international terrorism. Any of those activities are unlikely to call for separate, dedicated facilities for production, and even weaponization could easily be dual-purpose (and done in a short time). To remain the international focus of CW issues, the CWC and the OPCW must become the “weapon of choice” against these changed and emerging threats.

A great deal of the inspection activity by the OPCW right now is connected to CW destruction. That requires a specific skill set, different in many ways from the skill set required to examine commercial activities and determine the possibility those facilities might be converted on short notice to CW production or may even be carrying on CW production clandestinely. Looking for proliferation possibilities also means a much wider range of commercial facilities must at least have a credible deterrent concern about being subject to inspection. There is also a question whether the schedules of chemicals, which are one factor in determining which facilities might be subject to inspection, need to be modified to reflect both changes in technology and the point that the kinds of terrorist and rogue state threats which are emerging can satisfy their requirements with agents that are less effective, either because they are more poorly made or even comprise chemicals with less lethality.

All of this poses for the next DG and the organization a real challenge. How do you get the inspectorate skilled in a different inspection focus, while simultaneously finding ways to inspect more facilities in less time? What new techniques or technologies will need incorporation to ensure that looking at a wider range of activity is both competently done and still non-invasive enough to retain assurances of the safety of legitimate proprietary information? And, to add to the equation, how do you achieve all that in a relatively short time and with the small staffing levels of the OPCW?

Separately, if the schedules need adjustment, how do you achieve this quickly, comprehensively enough not to need to repeat the process in two or three more years, and in a fashion that commands from a wide range of parties recognition that the effort is aimed at an emerging threat rather than just expanding the number of facilities subject to inspection?

While those questions raise a number of concerns for the OPCW as a whole, they also virtually demand that the next DG possess a number of qualifications in addition to the usual need for multilateral diplomatic skills. He or she will need to come from a country with a significant chemical industry, to instill a confidence level with major chemical producers at the outset. Familiarity with national bureaucratic struggles with international organization budget contributions will help make the presentations necessary to ensure continuing support around the globe. And skill to persuade some of the countries who heretofore have been “underrepresented” in the inspection numbers of the real security value of adjusting inspection distribution will also help considerably to keep the OPCW in its dominant global role with regard to the chemical threat.

Like all international organizations, the OPCW is forced to keep one eye on politics while trying to focus on the technical requirements of fulfilling its mandate. As noted earlier, to date it has been among the top organizations around the globe in doing so, in large part due to extraordinary efforts by key senior members of the Technical Secretariat (TS). Maintaining the current level of capability and reputation is going to require even more Herculean efforts in the future. Not only will doing so absorb large amounts of the energy of the TS leadership, but there must be an extraordinary contribution of cooperation by the States Parties, including recognition that “business as usual” (otherwise known as political pressure) in appointments simply will not work.

The TS already faces very difficult circumstances in ensuring the technical competence of the inspectorate is sufficient to create the necessary confidence in inspection results and proprietary security. This is compounded by (or alleviated by, depending on the individual circumstance) the tenure limitations on inspectors. It is going to become even more difficult as the bulk of effort in the inspectorate shifts from disarmament (CW stocks) to non-proliferation (industrial inspection), and the industrial inspections will need to absorb an ever-accelerating rate of technical change if they are not to become obsolete. An outstanding inspector, because he has a finely honed set of technical skills, puts himself at a significant career disadvantage to his contemporaries when he takes seven (or ten) years out of his career to be an inspector, but then does not have the option of continuing as an inspector for a full career.

Combining all these elements creates what is close to the “perfect storm” of selection and retention difficulties for the TS. As the requirements for inspectors slide closer and closer to “cutting edge” technological competence, the pool of potential inspectors, and the country of origin (or at least of training) of the potential inspectors shrinks. Maintaining an absolute requirement for “equal geographic distribution” in the staff becomes self-defeating. Competing for qualified personnel against an exploding global chemical industry (even in current economic situations) becomes a losing battle. And, like mid-level officers in a military establishment, even if there were more money, it is impossible simply to hire senior

inspectors off the street. They must be “grown,” with experience in the inspecting business.

All of that suggests there will need to be new approaches to manning the TS, especially if the overall number of inspections needs to go up, while the tolerance for states to pay budget increases does not. There may be a previously-untapped opportunity for creating training institutes in states with advanced chemical industry, either by governments or in cooperation with chemical industry (after all, a more competent inspector is going to recognize the importance of non-interference in commercial activity better), where the TS could place candidate inspectors. (This would also increase the breadth of the geographic base of potential inspectors.) There may be room for creating a type of “intern” in the TS, where the training period, either at such an institute or even within the TS, would not count against the tenure restrictions of TS employment. The point, however, is that there is a watershed looming in the balance of the activity of the OPCW TS, and OPCW leadership, both in the TS and among the States’ Parties, needs to address it before it becomes a crisis that endangers the reputation and credibility of the Convention.

There is little chance either the United States or the Russian Federation will complete destruction of their chemical weapons stockpiles prior to 29 April 2012, the date where the CWC demands that all remaining stocks be destroyed. Looking at the other half of the glass, however, it is also highly likely both major possessors will have processed 80-90 per cent of their stockpiles prior to that “deadline” date. Both countries also have made commitments to continue destruction as required after that date until total destruction is completed as soon as safely and ecologically possible. Whether more attention to destruction and more concentration on proven methodologies (and more money earlier) could have advanced the date of complete destruction is now moot.

The close focus of the OPCW on this destruction issue has moved the “other” significant destruction issue – treatment of the stocks in China abandoned by the Japanese in 1945 – almost completely out of the spotlight. (Even though these latter are in a different category under the Convention, they still constitute a significant toxic hazard, technical and safety challenge, and expense – and destruction has not, at this writing, physically commenced yet, so there is also some probability the full extent of the challenge is not yet known.)

Thus, progress toward the disarmament objective of the CWC has been exemplary. (Consider, for comparison, what different agenda the Non Proliferation Treaty Review Conference next spring would have if global nuclear disarmament were nearly ninety per cent completed and the remaining weapons-holders had pledged to achieve zero within a few years.) The CWC has a real success story in achieving total destruction of CW stockpiles in a number of possessor states, including India, Albania, and Libya. The issue for the CWC as it approaches 2012 is, instead, how to recognize that, having no means to extend the deadline for destruction further, there will technically be a legal lapse of compliance neither covert nor unknown, but without danger to the object and purpose of the Convention. That is, unless the Conference of States Parties manages to create a problem with the object and purpose of the Convention.

If a few of the more aggressive states decide to pursue a punitive and confrontational policy, they easily could undermine

the entire foundation of the Convention. Conversely, nobody (including the US and Russia) want the provisions of the Convention to become meaningless. But if the inability to reach the end point by the date in the text, despite enormous effort and expenditure, receives immediate and automatic maximum punitive action by the Conference (a reaction, fortunately, no more than one or two of the most radical CWC parties are even suggesting), then there could be a real danger that the remaining destruction effort, even though comparatively small, might suffer in competition for scarce resources and drag out much longer than would be necessary.

The situation could also be improved by a greater display of objective transparency on the part of the Russian Federation. Whether their current posture is driven by residual paranoia, an unrealistic belief that by holding out on declaring a later date they will miraculously gain leverage in the perennial debate about the end point of destruction, or simply believing that “a miracle will occur” actually permitting them to complete destruction by 2012, is unknown. What is evident, however, is that public admission of the conditions already recognized by almost every observer would facilitate more open and detailed discussions within the OPCW well before 2012 arrives about what to do then. Options are already floating “in the ether” of informal and unofficial discussions. But the ability to confront the impending situation more officially and more formally would allow the next DG to formulate and obtain unofficial approval for a rational solution that will keep the regime intact, the participation of the two major possessors active, and the priority for destroying the residual stockpiles high. No state should lose sight of the fact that the ultimate priority of the CWC remains the earliest possible safe elimination of all CW stockpiles.

The OPCW has had its share of growing pains. When the CWC was opened for signature on 13 January 1993 in Paris, the “general belief” was that the Preparatory Commission

(the body to “clean up details” before actual entry into force) would have only about six months to a year to hammer out the remaining details of administering the Convention before it entered into force and inspections would begin. In fact, over four years elapsed before Entry Into Force. The PrepCom worked diligently for that entire period, and though there is always an argument that solution searches expand to fill the time available to them, there is enough record of steady progress throughout the PrepCom to suggest the time was, if not needed, at least useful.

There have been disagreements, most of a more bureaucratic than philosophical nature, that have threatened to bring the organization to a halt, but application of sufficient multilateral diplomacy has, at least thus far, always managed to avoid disaster. There has been only one decision in the history of the organization taken by vote rather than by consensus. That, considering the amount of sensitive achievement recorded over the history of the organization, is a remarkable record. There were a few initial surprises, both in the number of chemical stockpiles declared, and, subsequently, in the accuracy of declarations.

The real challenge for the CWC and the OPCW at this point is not to “prove itself” in the international community as a viable ban on chemical weapons. That goal, along with making chemical weapons an aberrance to military planning, has been achieved. But now, with achievement of virtual destruction of chemical weapons stocks, the Convention and its supporting organization must demonstrate the flexibility to become not only relevant but central to containing a different threat: the non-state actor, who never signed the Convention in the first place, and the standby capability of a rogue state who wants an option in future contingencies. To do that will require maintaining skilled and imaginative leadership in the TS and vigorous, committed participation by the member states of the CWC.

Ambassador (retired) Donald A. Mahley is currently serving as Special Negotiator for Nonproliferation, on an as needed basis. Prior to his April 2008 retirement, Ambassador Mahley served as Deputy Assistant Secretary for Threat Reduction, Export Controls, and Negotiations. As such, he had the responsibility for chemical and biological weapons threat reduction, missile threat reduction, conventional weapons threat reduction, and export controls.

Before that, Ambassador Mahley was the Deputy Assistant Secretary for Arms Control Implementation in the Arms Control Bureau of the Department of State. He served as the Special Negotiator for Chemical and Biological Arms Control issues from April 1999 to September 2002. Ambassador Mahley headed the United States Delegation to Biological Weapons Convention activities and was the Managing Director of the United States National Authority for implementation of the Chemical Weapons Convention. From 1993 until 1999, Ambassador Mahley served as Deputy Assistant Director and Acting Assistant Director of the Multilateral Affairs Bureau of

the Arms Control and Disarmament Agency. While still in military service, from 1990-1992, he served as Associate Assistant Director of the Multilateral Affairs Bureau and led U.S. efforts to conclude the Chemical Weapons Convention. Prior to his term in ACDA, Ambassador Mahley served six years (1984-1990) as Director of Defense Policy and Arms Control on the National Security Council staff. He arrived at the NSC after four years in the U.S. Mission to NATO, having served as Deputy Director of the Defense Plans Division for the U.S. Ambassador to NATO.

Ambassador Mahley is a retired United States Army officer, Ordnance, in the rank of Colonel. He served overseas in Viet Nam, Turkey, and Belgium during his active duty with the United States Army, and successfully held three command positions during his military career. He also served as an Assistant Professor of Social Sciences at the United States Military Academy and an Associate Professor of Military Strategy at the National War College.

THE REGIME FOR OTHER CHEMICAL PRODUCTION FACILITIES: A TECHNICAL PERSPECTIVE

Robert J Mathews¹

It is now seventeen years since the 'End-game' process in the Conference on Disarmament (CD) in Geneva which resulted in the final agreed provisions contained in the Chemical Weapons Convention (CWC),² and just over twelve years since entry into force of the CWC. One of the more contentious issues in the CWC 'End-game' was the shape of the routine verification regime for 'CW-capable' facilities, that is, those facilities that do not produce, process or consume any of the chemicals in Schedule 1, 2 or 3, but which may be capable of producing these chemicals. The negotiators in Geneva eventually agreed on the term 'Other Chemical Production Facilities' as a politically acceptable descriptor for 'CW-capable' facilities.

And seventeen years on, the regime for OCPFs is recognized as a very important element in the CWC verification system. However, there are still certain aspects of the regime for OCPFs which are causing protracted discussions in the OPCW, including: the amount of information to be provided in annual declarations; the degree of risk to the object and purpose of the Convention posed by OCPFs compared to Schedule 1, 2 and 3 facilities; and the selection methodology for OCPF inspections.

This article discusses the negotiation of the regime for OCPFs from an historical and technical perspective, then briefly considers the early implementation of the OCPF regime and what still needs to be done if the maximum benefits from the OCPF regime are to be realised. It is hoped that the article will assist the diplomats and advisers with responsibilities for decision-making in the OPCW in obtaining a better understanding of the negotiating history and the technical complexities of the regime for OCPFs.

Raison d'être for the Regime for Other Chemical Production Facilities

Historically, parts of the chemical industry have played a major role in CW production programs, for example, the use of industrial dye production factories for the supply of chlorine, phosgene and mustard agents during WWI. Indeed, it was only because of the rapid growth of the chemical industry in Europe in the latter part of the 19th century and early 20th century that chemical weapons were able to be used on such a massive scale during WWI. And industry involvement did not stop then. Even as the negotiators in the CD in Geneva began grappling with the issue of industry verification in the mid-1980s, parts of chemical industry were supplying key precursors (in some cases inadvertently) for the production of CW agents in the USA, the former USSR and Iraq.

The importance of the routine verification of chemical industry, including of OCPFs, is illustrated by the information in Table 1 (overleaf) which indicates how the same chemical reactions required for the production of many classes of commercial chemicals can also be used in the production of CW agents. Unfortunately from the viewpoint of industry verification, the types of production equipment suitable for these chemical processes are similar for the production of either CW agents or commercial chemicals, particularly with multipurpose plants.³

The intention of the Article VI regime was to monitor the relevant parts of chemical industry,⁴ through annual declarations and on-site inspection, in order to:

- deter the production, in chemical industry, of chemicals which are intended for CW purposes; and
- provide the necessary confidence that States Parties to the CWC are complying with their obligations under the CWC, and in particular, are not using their commercial chemical industry for the production of CW agents.

It was recognised that in order to achieve these objectives, the verification regime would need to monitor the relevant parts of chemical industry, including OCPFs, with a broad geographic distribution of inspections, have an acceptably low impact on the operations of the chemical industry, and be flexible and readily adaptable to take into account the early experiences in the implementation of the regime, and changing chemical technology.

Negotiation of the provisions for routine verification of chemical industry

The early efforts to develop procedures for the routine verification of chemical industry, which took place in the CD in 1985 and 1986, focussed on those facilities which produced, processed or consumed Schedule 2 chemicals. The proposed provisions were based on a quantitative / materials balance approach to verify the non-diversion of Schedule 2 chemicals, similar to the International Atomic Energy Agency approach for the monitoring of nuclear materials under the Nuclear Non Proliferation Treaty. This approach was driven by East/West mistrust, and was related to the methods of production of CW agents (and in particular, nerve agents) in the USA and the former Soviet Union⁵ rather than the methods that might be used by a CW-proliferator with a less developed chemical industry.⁶

At that time, most Geneva negotiators apparently

PRODUCTION PROCESSES	CW AGENTS	TYPICAL COMMERCIAL PRODUCTS
Chlorination	Sulphur-mustard Nitrogen-mustard Lewisite Sarin VX	Insecticides Herbicides Polymers, Dyes Pharmaceuticals Solvents
Fluorination	Sarin Soman	Polymers, Solvents Pharmaceuticals Pesticides, Herbicides Refrigerant Gases Anaesthetic Gases
Esterification	Sarin Tabun BZ	Insecticides Solvents Flavours Pharmaceuticals
Phosphorylation	Sarin Tabun VX	Insecticides Flame Retardants Oil Additives
Alkylation	Sarin Soman VX	Flame Retardants Oil Additives Petrochemicals

Table 1

considered that it would be sufficient to limit routine on-site inspections under Article VI to Schedule 1 and Schedule 2 facilities. In Australia's view, such an approach may have been sufficient for an agreement between NATO countries and the former Warsaw Pact countries, but would have provided little, if any, assurance to other States Parties (including developing countries) that their neighbours were taking their CWC obligations seriously, and in particular, not using their chemical industry facilities to develop a CW production capability.⁷

Several developments occurred in the latter part of the 1980s, including surveys of chemical industry and production processes, experience with national trial inspections (NTIs), discussions with industry personnel, and the lessons learnt from recent CW proliferation programs. These outcomes gradually led to an appreciation by the Geneva negotiators that to restrict the coverage of on-site verification activity only to facilities producing Schedule 1 and 2 chemicals, while ignoring Schedule 3 facilities,⁸ and other facilities which could be readily adaptable to chemical weapons production, would be to build a serious deficiency into the Convention (the 'Verification Gap').⁹ It became clear that if the Convention was to be effective it had to allow for routine inspection of Schedule 3 and 'CW capable' facilities.

Discussions on the extension of routine inspections of industry facilities beyond Schedule 2 remained on the back-burner until January 1988, when the Federal Republic of Germany (FRG) introduced the concept of 'Ad Hoc Check'¹⁰ a non-intrusive, short duration inspection of a chemical facility with the objective of checking for the absence of undeclared scheduled chemicals, and the absence of other indicators of

CW-related activities, but without access to records for materials accountancy purposes (that is, a qualitative inspection). In September of 1988, the FRG further developed this approach by proposing that each State Party would prepare a National Register of its chemical industry, from which the Technical Secretariat would choose facilities for inspection by random selection with a weighting factor.¹¹ The FRG subsequently informed the CD that it had conducted a successful practice Ad Hoc Check.¹² Unfortunately, the Ad Hoc Check approach failed to win widespread support at that time, at least in part because some delegations considered that the compilation of the National Register would be too difficult, particularly for a State Party with a very large chemical industry. Some countries had concerns that such an extension of verification activity would overwhelm the Technical Secretariat, industry and national governments.

In March 1989, the UK proposed Ad Hoc Inspections, which would be applicable to both civil and military facilities and would be initiated by a nomination from a State Party.¹³ The UK proposed a quota system whereby each State Party would be obliged to receive a certain number of inspections each year. This approach, while not suffering from the perceived problem of compilation of National Registers, was seen by some delegations as a 'Challenge Inspection in disguise' and also failed to win widespread support. At that time, some delegations maintained that sufficient assurance of compliance would be obtained by on-site inspections of Schedule 2 and data reporting on Schedule 3 chemicals (with any concerns about compliance at industry sites beyond Schedule 2 to be addressed through challenge inspections), while other delegations maintained that it would be premature

to discuss this issue until the provisions of Challenge Inspections had been fully developed.

In April 1990, Australia presented a discussion paper titled 'Ad Hoc Verification'¹⁴ which combined various elements of the FRG and UK approaches in an attempt to promote further development of this regime. In early 1991, Sweden proposed a fourth Schedule of production processes (including those processes listed in Table 1)¹⁵ and a group of eight nations (Egypt, Ethiopia, Indonesia, Iran, Kenya, Nigeria, Pakistan, and Yugoslavia) submitted a working paper accepting the principle of extending controls to civil factories capable of producing scheduled chemicals and offering suggestions on the possible form of on-site inspections for Schedule 3 and 'Other Relevant' facilities.¹⁶

While these discussions were taking place in Geneva, there was also progress away from Geneva as several countries performed NTIs based on the short duration qualitative inspection procedures. One of the most notable early inspections was conducted by the Netherlands, which had initially conducted a practice Schedule 2 inspection at a declarable Schedule 2 production plant which was located within a large plant site, and then conducted a short duration qualitative inspection of other parts of the plant site which included production plants identical to the declared plant.¹⁷ Several other countries also conducted similar short duration qualitative inspections. For example, Australia conducted such an inspection as part of a Regional Workshop on the CWC, with 19 chemists from the South-East Asia and South Pacific regions acting as observers.¹⁸

Industry representatives from the major chemical industry organisations (including the USA, European, Canadian, Japanese and Australian industry associations) were also considering the scope of Article VI. Although the industry representatives were initially sceptical of the concept of a broad scope for industry verification,¹⁹ at the Chemical Industry representatives meeting in Geneva in June 1991 they strongly supported the broad scope for the regime for OCPFs, based on a qualitative short-duration relatively non-intrusive inspection.²⁰

By September 1991, the majority of delegations had come to the view that to restrict the coverage of on-site verification activity only to Schedule 1 and Schedule 2 facilities, while ignoring Schedule 3 facilities and OCPFs which could be readily adapted for chemical weapons production, would be to build a grave deficiency into the CWC. These delegations agreed that, for the CWC to be effective, it must allow for inspection of Schedule 3 facilities and other relevant parts of the chemical industry. However, there were still a range of views on the details,²¹ including the scope of the regime for OCPFs, the nature of the inspections, and the inspection selection methodology. This situation was reflected in the short report in Appendix 2 of the 1991 Report of the Chair of the Ad Hoc Committee on Chemical Weapons.²²

The CWC 'end game' and the OCPF package deal

By late 1991, the negotiation of the CWC had taken the best part of 20 years, and there was growing impatience by the international community to conclude the negotiation of the CWC. This resulted in requests, including from US President George H W Bush,²³ to complete the Convention without delay. In addition to the concerns about the possibility of increased CW-proliferation following the widespread use of

chemical weapons in the 1980s, there were also concerns that the window of opportunity to conclude international agreements presented by the end of the Cold War may not last indefinitely.²⁴ These concerns led to the commencement of the CWC 'End-game' process, initiated by the tabling of the Australian compromise text,²⁵ and then the subsequent 'End-game' process pursued by the Chair of the Ad Hoc Committee on Chemical Weapons in 1992 (Ambassador von Wagner of Germany).²⁶

The commencement of the 'End-game' caused problems for the negotiators responsible for developing the final 'OCPF package'. In particular, based on the time taken to reach agreement on the Schedule 1 and 2 verification provisions, it was realised that the unresolved OCPF issues would possibly have taken another two years or longer to resolve through the 'normal' negotiation process.²⁷ So the approach taken with OCPFs in the 'CWC End-game' was to adopt a very flexible package of provisions based on the unresolved OCPF proposals,²⁸ and leave it to the Preparatory Commission, and subsequently the Technical Secretariat and Conference of the States Parties to make the operational decisions necessary for the effective implementation of the regime for OCPFs, based on the early experiences in the implementation of the industry verification regime.²⁹

Scope of the Regime for OCPFs

Agreement could not be reached as to whether the regime for OCPFs should cover all facilities producing organic chemicals above an agreed threshold, or only those facilities producing organic chemicals containing the elements of phosphorus, sulphur or fluorine (PSF facilities). So, as a compromise, both categories were included,³⁰ with the distribution of verification resources between the two categories to be decided by the Conference of the States Parties or the Technical Secretariat.³¹

Agreement could not be obtained on whether production should be limited to chemical synthesis or to also include biochemical reaction processes.³² Thus the term 'production by synthesis' was devised because it could be interpreted either way.³³

To allay the concerns of some negotiators that the regime for OCPFs would overwhelm the Technical Secretariat, industry and national governments,³⁴ it was agreed that there would be declaration and inspection thresholds of 200 tonnes per annum for OCPFs. Some negotiators had also been pressing for exemptions of certain categories of facilities, based on arguments that they were of lesser relevance to CW-related activities, and to try to keep the number of OCPFs at a manageable number. As part of the OCPF package deal, it was eventually agreed to exclude those facilities that exclusively produce hydrocarbons or explosives.³⁵

Declaration requirements

To reduce the burden on States Parties, it was agreed that the declarations of chemical production would be in production ranges, and States Parties could request assistance from the Technical Secretariat in compiling their lists of OCPFs. And rather than get into detailed negotiations on how much information should be included in the declaration, the negotiators agreed that the 'main activities' were to be declared,³⁶ with what actually constituted the 'main activities' to be determined by the Preparatory Commission.

Inspection aims

Some of the proposals being considered for the aims for OCPF inspections were: consistency with the declaration; absence of undeclared scheduled chemicals above the relevant declaration thresholds; and absence of indication of production of chemical weapons. As part of the compromise package, the inspections aims were limited to consistency with the declaration and the absence of undeclared Schedule 1 chemicals above the declaration threshold.³⁷

Selection of OCPFs for inspection

The issue of methodology for the selection of OCPF plant sites for inspection could not be resolved, so eventually the 'equitable geographical distribution', 'technical characteristics of the plant site/activities', and 'proposals by States Parties', were all included, with the sites chosen for inspection to be randomly selected through 'specially designed software' and weighting factors.³⁸

And to further allay the concerns of some negotiators that the OCPF regime would overwhelm the Technical Secretariat, industry and national governments, it was stipulated that no OCPF could be inspected more than twice in one year, and the combined number of Schedule 3 and OCPF inspection that could be received by any State Party in any calendar year would not exceed 20. And inspections of OCPFs would only commence at the beginning of the fourth year after entry into force, and only then provided the Conference of States Parties did not decide otherwise.³⁹

Conduct of OCPF Inspections

It was agreed that the focus of the inspection would be the declared chemical production plant(s). The inspection team will have managed access to these plants according to the provisions of Article IX. If the inspection team requests access to other parts of the plant site to clarify ambiguities, the extent of access will be agreed between the inspection team and the inspected State Party. Access to records may be provided only with the agreement of the inspected State Party. Sampling and on-site analysis may be undertaken to check for the absence of undeclared scheduled chemicals.⁴⁰

OCPF as a transparency measure

As discussed above, on the basis of industry surveys, it was estimated that several thousand facilities may be declared under the OCPF regime. However, it was recognised that the declaration of OCPFs would be a transparency / confidence building measure, and that it would not be necessary to inspect every individual declared OCPF for the regime to be effective. Rather, the inspection of a representative number of OCPFs from among all States Parties possessing OCPFs would be an effective compliance monitoring activity which - over a number of years - would provide an increasing level of assurance that 'CW-capable' facilities were not being used for CW-purposes.

Risk assessment of OCPFs

In the latter stages of the negotiations, there was preliminary inconclusive discussion on the relative risk posed to the object and purpose of the Convention by the facilities declared as Schedule 1, 2, 3 and OCPFs.⁴¹ The negotiators eventually decided to leave such risk assessments and the allocation of

resources to be devoted to inspections of the various types of declared industry facilities to the Technical Secretariat and Conference of the States Parties, respectively. Note that this is in contrast to the risk posed by the actual chemicals, as the Convention clearly specifies that Schedule 1 chemicals pose a 'high risk', Schedule 2 chemicals pose a 'significant risk' and Schedule 3 chemicals pose a 'risk' to the object and purpose of the Convention.⁴²

Key features of OCPF inspections

Broad geographic distribution of OCPF inspections

As discussed above, in order to provide assurance to States Parties that their neighbours were taking their CWC obligations seriously, it was recognised that important benefits would derive from the inclusion of 'equitable geographic distribution' as a criterion for the selection of OCPFs for inspection. A significant number of OCPF inspections in a wide range of States Parties would deter the use of such facilities for CW-related production activities. In addition, it would provide States Parties with a greater incentive to fulfil their CWC national implementation obligations. It was considered that if each State Party that possesses OCPFs has a high probability of receiving at least one routine inspection a year, then States Parties would be more likely to establish an effective National Authority, to prepare accurate declarations, to conduct outreach to inspectable facilities and to have the necessary procedures for receiving inspections in place, including designating Points of Entry and identifying personnel to act as escorts.

These potential benefits were recognised as depending in large measure upon the development of a methodology for selection of OCPFs for inspection which results in 'equitable geographical distribution', as well as the development of a selection process based on 'State Party nominations'. However, as discussed above, the negotiators considered that it would be better for such details to be considered later, rather than risk delaying the conclusion of the negotiations in Geneva.

Acceptably low impact on the operations of the chemical industry

It was recognised from the outset that in order to be acceptable to States possessing a large chemical industry, the regime for monitoring chemical industry under the CWC would have to have an acceptably low impact on the operations of the chemical industry, and that the best approach to achieve this objective was to involve industry representatives. For example, Australian officials initiated consultations with chemical industry representatives (from industry associations and individual companies) as early as 1985. These early consultations demonstrated the benefit of cooperation with industry, and for the remainder of the negotiation of the CWC one of Australia's key objectives was to encourage input from industry representatives as the various industry verification provisions were being developed. Australia supported the annual formal meetings of chemical industry representatives with the negotiators in the CD which commenced in June 1987, and hosted the Government-Industry Conference against Chemical Weapons (GICCW), better known as the 'Canberra Conference' in September 1989.⁴³

The interaction of chemical industry representatives and

the Geneva negotiators was one of the most important factors in the development of the provisions for the routine monitoring of the chemical industry. In particular, the representatives were able to provide useful proposals which would enable the achievement of the verification objectives in a way that would result in an acceptably small impact on the operations of the chemical industry, through participation in workshops and NTIs. As discussed above, they strongly supported the broad scope of Article VI, based on a short-duration relatively non-intrusive inspection, which was a major factor in the shaping of the final OCPF package. Their contribution also included developing appropriate 'managed access' procedures to provide access to records in a way which did not compromise confidential business information. Discussions with industry personnel also prompted the development of rapid screening methods suitable for on-site analysis to indicate the presence or absence of chemicals listed in CWC Schedules (including family members of the weaponized nerve agents) without providing information on other chemicals present in the sample (so called 'negative proof' methods).⁴⁴

A flexible and readily adaptable regime

It became apparent that because of the uncertainty about the number of facilities that would be declared under Schedules 1, 2, 3 and as OCPFs, as well as their relative risk to the object and purpose of the CWC, it would be impractical to attempt to develop rigid solutions in the Convention text, as the nature of the practical problems would become apparent only in the course of implementation of the CWC. Accordingly, there was an effort to ensure that Article VI, in particular the OCPF regime, was not overburdened with excessive detail. This would then enable the Technical Secretariat to implement the monitoring of industry in the most practically effective and cost-effective manner, including the flexibility to focus its inspection effort on those Schedule 1, 2, and 3 facilities and OCPFs which, in its assessment, posed the greatest risk to the object and purpose of the Convention.

The flexibility and adaptability of Article VI is reflected in the phased implementation of inspections. For Schedule 1 facilities, the initial inspections are to be conducted within 180 days of entry into force; for Schedule 2 facilities, the initial inspections are to be conducted within 3 years of entry into force; there is no timeline specified for the conduct of initial inspections of Schedule 3 facilities; and OCPF inspections will not occur before the beginning of the fourth year after entry into force. However, beyond the initial inspections of Schedule 1 and 2 facilities, the allocation of inspections between Schedule 1, 2 and 3 facilities and OCPFs is designed to be open to future adjustments in the light of practical experiences and developments in industry, based on the risk assessments conducted by the Technical Secretariat and allocation of resources for Article VI inspections by the Conference of States Parties.

Part of the flexible package included a simplified technical change procedure under Article XV to allow changes to certain parts of the Verification Annex (including Part IX) containing detailed verification procedures which had yet to be tested in practice. The simplified technical change procedure under Article XV was also intended for application to certain parts of the Verification Annex in the light of future developments in chemistry and the operation of chemical

industry that could affect the risk to the CWC. For example, many chemical companies are turning increasingly to production of chemicals through biotechnological processes, ranging from use of biomass as feedstock to the use of enzymes as catalysts. Another trend which could impact on industry verification is the development of greater flexibility in chemical production equipment, including greater use of 'multi-purpose' production plants.

Implementation experience so far

Since entry into force, a total of more than 4,700 OCPFs have been declared by more than 70 States Parties.⁴⁵ During the first few years after entry into force, there was an obvious focus on the verification of Schedule 1 and 2 facilities, to meet specific Convention timelines for their initial inspections. However, following completion of these initial inspections, and since the commencement of OCPF inspections in May 2000, an increasing proportion of the available resources have been allocated for OCPF inspections, with more than 700 OCPF inspections having now been conducted.⁴⁶

The inspection of OCPFs clearly posed new challenges to the OPCW Inspectorate. For example, OCPFs which are subject to routine inspection range from relatively small plant sites producing 200 tonnes of organic chemicals per year (perhaps producing only one discrete organic chemical in one reaction vessel) to very large plant sites containing more than one hundred multipurpose production plants. Furthermore, routine inspections of OCPFs are typically more of a 'consistency check' rather than the more accurate quantitative verification associated with other OPCW routine industry inspections (in particular, inspections of Schedule 1 and Schedule 2 facilities). However, the OPCW Inspectorate has succeeded in adjusting its inspection procedures to OCPF inspections. Overall, there has been a high degree of satisfaction by the OPCW, States Parties and industry facility personnel in the way that inspections of OCPFs have been conducted.⁴⁷

The importance and relevance of the OCPF regime have been recognised by the Technical Secretariat based on its early experiences. For example, in his statement to the First Review Conference, the Director-General concluded that these inspections have shown that some of the OCPFs 'are highly relevant to the object and purpose of the Convention. These facilities produce chemicals that are structurally related to Schedule 1 chemicals. Of particular relevance to the Convention are facilities that combine this kind of chemistry with production equipment and other hardware designed to provide flexibility and containment.'⁴⁸ And the OPCW Scientific Advisory Board, in its study of developments in the production of CWC-relevant chemicals, concluded that OCPFs is the area where the impact of recent technological developments was most relevant, and recommended that it would be prudent to increase the number of inspections of such facilities.⁴⁹

That said, based on the early experiences gained in the implementation of the regime for OCPFs, there are aspects of this regime that require further consideration in order to improve its overall effectiveness, including adjusting and fine-tuning some of the procedures and practices which have been adopted by the Technical Secretariat and States Parties. Some of these aspects were highlighted in the report of the Technical

Secretariat to the Second Review Conference, including the need to improve the geographical distribution and by improving targeting to select more-relevant plant sites.⁵⁰

With respect to the declaration of OCPFs, a number of National Authority representatives have expressed the view that they may not have identified all of their declarable OCPFs, and have sought guidance to assist them in this task, which has been provided by the OPCW,⁵¹ as well as other States Parties.⁵² There are also issues about the level of detail provided in the OCPF declarations, including the 'main activities'. A particular problem is that the declaration format developed by the Preparatory Commission limited the information on 'main activities' to the 'Standard International Trade Classification (SITC) codes' relating to the ultimate product(s) manufactured at the declared site, which is causing problems for the Technical Secretariat as it attempts to refine its algorithm to select the most relevant OCPF sites for inspection.⁵³

Indeed, as recently explained by the Technical Secretariat, if States Parties were to use additional sub-codes for certain high-volume bulk chemicals that are considered less relevant to the Convention, and were to provide the codes for the declarable activities (which are not necessarily the same as the ultimate product), then this would greatly assist the Technical Secretariat in selecting more relevant OCPFs for inspection based on the use of the codes as weighting factors in the selection algorithm (A-14) developed by the Technical Secretariat.⁵⁴ More recently, the Technical Secretariat has been attempting to further improve the selection process through a proposal that States Parties provide information related to the types of production equipment used at the OCPF.⁵⁵ Clearly the Technical Secretariat requires this type of information on the main activities if it is to develop accurate weighting factors related to the characteristics of the plant site and the activities carried out there, as required in the site selection methodology specified in Part IX Paragraph 11(b).⁵⁶

There are also concerns about the other aspects of Article VI inspections, including the relative proportion of inspections of Schedule 1, 2, 3 facilities and OCPFs, with a number of delegates appearing reluctant to agree to an increase in the number of OCPF inspections, despite the Technical Secretariat's assessment provided to the Second Review Conference that the level of OCPF inspections still does not provide adequate non-proliferation assurances.⁵⁷ This reluctance appears to be based, at least in part, on the misunderstanding among some delegates that because there is a clearly defined risk hierarchy for the scheduled chemicals, that the facilities producing those chemicals must automatically follow the same risk hierarchy (as discussed above, there is no simple correlation between the risk posed by the chemical and the risk posed by the facility).

Concluding comments – the way ahead

It is interesting to reflect, 17 years after the conclusion of the negotiation of the CWC in Geneva and just over 12 years after entry into force, that the CWC is achieving a set of objectives, including the monitoring of the chemical industry for 'non-production' of chemical weapons, which were deemed not possible in the early 1920s,⁵⁸ and as far as the monitoring of OCPFs is concerned, which some negotiators considered might be too difficult even as the negotiation of

the Convention was being concluded. The CWC is both complex and ambitious in its objectives, and the OPCW has performed remarkably well on its steep learning curve. Indeed, it is noteworthy how rapidly the OPCW Inspectorate has managed to develop into a credible and professional body, and how the large majority of affected facilities have accepted industry inspections.

Despite the difficult compromises necessary during the construction of the OCPF package in the 'end-game' process, there is now general recognition that the concerns of the Geneva negotiators about 'CW-capable' facilities were justified, and the OCPF regime is becoming an increasingly important part of the industry verification under Article VI. However, there is a lot more that needs to be done if the maximum benefits are to be obtained from the OCPF regime. As discussed above, there has been some very useful work undertaken by the Technical Secretariat in developing a range of very practical solutions to the various declaration and inspection issues facing the OCPF regime. But practical proposals by the Technical Secretariat will not be enough. Successful resolution of these issues and the optimisation of the OCPF regime will also require a spirit of goodwill, cooperation and common purpose by all States Parties if the maximum benefits from the OCPF regime are to be realised.

Notes

- ¹ Robert J Mathews is Head of the NBC Arms Control Unit at the Australian Defence Science and Technology Organisation, and Associate Professor in the Faculty of Law at the University of Melbourne. The author was scientific adviser to the Australian delegation to the Conference on Disarmament in Geneva from 1985 to 1992, and since then has been scientific adviser to the Australian delegation of the OPCW in The Hague. The views expressed in this article are those of the author and do not necessarily reflect the position of the Australian Government. Some of the background material provided in this article has been previously published in R.J. Mathews, 'Intention of Article VI: An Australian Drafter's Perspective', in *OPCW Synthesis*, November 2000.
- ² See for example, M Letts, R J Mathews, T L H McCormack, and C Moraitis, 'The Conclusion of the Chemical Weapons Convention: An Australian Perspective', *Arms Control*, vol 14 no 3 (December 1993) pp 311-32.
- ³ In multipurpose plants, the reactors, associated pipework, pumps and valves are typically constructed from a corrosion resistant material to enable the plant to be used for many different types of reactions, including those either consuming or producing corrosive and toxic chemicals (for example, chlorinating and fluorinating chemicals), as well as associated effluent control systems and safety features. The process control unit is typically computer controlled, and is designed to be flexible, such that the reaction conditions can be readily reprogrammed to allow different processes.
- ⁴ Article VI includes the monitoring of facilities beyond what is normally regarded as 'chemical industry'. For example, based on surveys of chemical industry, it was apparent that there would be very few facilities within chemical industry producing Schedule 1 chemicals - most

- facilities to be monitored under the Schedule 1 regime would be either chemical defence laboratories or laboratories involved in development of methods of chemical analysis to support verification of the CWC. A number of facilities processing and consuming Schedule 2 chemicals (e.g. ink formulation, flame retardant materials) are not located in what is normally regarded as 'chemical industry'.
- 5 It is interesting to recall that, at that time, the USA was preparing to recommence the production of chemical weapons (binary nerve agents) after 16 years of 'non-production', and the former USSR was generally acknowledged as still producing chemical weapons (although it did not confirm its possession of chemical weapons until 1987).
 - 6 For example, Iraq's CW proliferation program in the 1980s employed Schedule 3 plants, multipurpose production plants and plants originally designed for pesticide production, rather than typical 'Schedule 2 facilities'. See J. Gee, 'The destruction, removal or rendering harmless of Iraq's chemical warfare capability', *Disarmament* (New York: United Nations), vol. 15 (1992) no. 2, pp 77-93.
 - 7 For example, based on a survey of global chemical industry conducted by Australia in the late 1980s, it was assessed that limiting routine inspections under Article VI to Schedule 1 and Schedule 2 facilities would concentrate more than 80% of the OPCW industry inspection effort in a relatively small number of States Parties (including China, France, Germany, India, Italy, Japan, Russia, UK and US) and more than 80% of States Parties not receiving any routine industry inspections, whereas extending Article VI inspections to Schedule 3 facilities and OCPF's would result in the majority of States Parties being subject to routine industry inspections.
 - 8 In 1987, Australia proposed that there should be provision for routine inspections of declared Schedule 3 facilities. This resulted in the 1987 CWC 'Rolling Text' containing the following footnote related the Schedule 3 facilities: 'Some delegations consider that provision should be made for resort to an on-site 'spot-check' inspection, if required, to verify information supplied by a State Party. Other delegations believe that the provisions of Articles VII, VIII and IX of the Convention are sufficient in this respect.' See the Report of the Ad Hoc Committee on Chemical Weapons to the Conference on Disarmament, CD/782, 26 August 1987, p 71.
 - 9 For a detailed discussion of these developments, see R. J. Mathews, 'Verification of Chemical Industry under the Chemical Weapons Convention', in *Verification 1993*, (London: VERTIC, 1993), pp 41-54.
 - 10 Federal Republic of Germany, 'Verification of non-production: the case for Ad Hoc Checks', CD/791, 25 January 1988.
 - 11 Federal Republic of Germany, 'Verification of non-production of chemical weapons: ad hoc checks', CD/869, 6 September 1988.
 - 12 The report stated that 'The results clearly show that it is feasible to carry out such an inspection within a few hours and that it will render a high degree of certainty that no activities prohibited under the CWC are taking place in the factory in question.' Federal Republic of Germany, 'Report on a Trial Inspection to test the validity of a proposed format for ad hoc on-site verification', CD/950, 17 August 1989.
 - 13 United Kingdom, 'Chemical Weapons Convention: Ad Hoc Inspections', CD/909, 30 March 1989.
 - 14 Australia, 'Ad Hoc Verification: discussion paper', CD/CW/WP.284, 11 April 1990.
 - 15 Sweden, 'Verification of the chemical industry within the general pattern of verification of a Chemical Weapons Convention', CD/1053, 4 February 1991.
 - 16 Egypt, Ethiopia, Indonesia, Islamic Republic of Iran, Kenya, Nigeria, Pakistan and Yugoslavia, 'Verification of the chemical industry under Article VI and its Annexes', CD/CW/WP.348, 17 June 1991.
 - 17 The Netherlands, 'Report on a National Trial Inspection', CD/CW/WP.251, 23 June 1989, and The Netherlands, 'An attempt to verify non-production in a chemical plant', CD/CW/WP.252, 23 June 1989.
 - 18 Australia, 'Trial Inspection of a Schedule 3/ 'Other Relevant' Facility', CD/CW/WP.385, 20 February 1992.
 - 19 For example, in 1987, the US Chemical Manufacturers Association strongly advised the US Government that expansion of the scope of the treaty beyond Schedule 3 would be ill-advised and counter-productive. See 'News Chronology: 12 October 1987', *Chemical Weapons Convention Bulletin* no 1 (Summer 1988) p 5.
 - 20 The industry associations participating included the US Chemical Manufacturers Association, the Canadian Chemical Producers Association, the European Federation of Chemical manufacturing Associations (CEFIC), the Japanese Chemical Industry Association and the Australian Chemical Industry Council. The representatives proposed that the 'CWC International Inspectorate be allowed to examine any commercial chemical manufacturing site for evidence of chemical weapons production... through a qualitative approach to inspections, and a system of inspection locations with nominations by States Parties and random selection by the Technical Secretariat of a finite number of sites to be inspected.' See 'News Chronology: 24-27 June 1991', *Chemical Weapons Conventions Bulletin* no 13 (September 1991) pp 11-12. By 1991, the industry representatives had recognised that a broad scope for routine industry inspections would avoid having some of their plants labelled as 'CW-capable' and would also reduce the risk of industry sites receiving a challenge inspection.
 - 21 A very common saying in the corridors in the UN Palais des Nations building during the CWC end-game was 'the devil is in the detail'.
 - 22 'Report of the Ad Hoc Committee on Chemical Weapons to the Conference on Disarmament', CD/1108, Geneva, 27 August, 1991.
 - 23 In May 1991, President George H W Bush announced a new US initiative, calling for the resolution of all major outstanding issues in the CD negotiations by the end of 1991, and the completion of the CWC within 12 months. See Conference on Disarmament CD/1077 (23 May 1991).

- ²⁴ See for example, M Letts, R J Mathews, T L H McCormack, and C Moraitis, 'The Conclusion of the Chemical Weapons Convention: An Australian Perspective', *Arms Control*, vol 14 no 3 (December 1993) pp 311-32.
- ²⁵ Australia, 'Proposed Convention on the Prohibition of the Development, Production, Stockpiling and Use of Chemical Weapons and their Destruction', CD/1143, 12 March 1992.
- ²⁶ Chairman of the Ad Hoc Committee on Chemical Weapons, 'Draft Convention on the Prohibition of the Development, Production, Stockpiling and Use of Chemical Weapons and their Destruction', CD/1170, 26 August 1992.
- ²⁷ The development of the draft verification provisions related to Schedule 1 and 2 facilities took place in 1986 and 1987. Considerable time was spent refining these provisions during subsequent negotiation sessions, based on lessons learnt from NTIs and very useful input from industry personnel. As a result, the Schedule 1 and 2 provisions were at a mature stage of development by 1991, and only a relatively small number of adjustments to these provisions were necessary during the 'End-game' process.
- ²⁸ The OCPF package deal extended beyond OCPFs *per se*, and was linked to the dropping of 'processing and consumption' from the coverage of Schedule 3, the opening of Schedule 3 facilities for on-site inspection, and deletion of several chemicals which had been tentatively listed on Schedule 3. See Walter Krutzsch and Ralf Trapp, *A Commentary on the Chemical Weapons Convention*, (Martinus Nijhoff Publishers, Dordrecht, 1994), pp. 456-457.
- ²⁹ This approach was expressed very eloquently at the time by German Foreign Minister Genscher in an address to the CD, as follows: 'Speaking of the controls which the CWC must place upon the civilian chemical industry, naturally, such verification measures, being so new, cannot function perfectly from the outset. The task of the future Chemical Weapons Organization and its Technical Secretariat will be to gradually develop verification procedures that work to the satisfaction of all Member States'. (Hans-Dietrich Genscher, Federal Minister for Foreign Affairs of Germany, Statement at the CD in plenary session, 20 February 1992: CD/PV.613, pp 4-9).
- ³⁰ CWC, Verification Annex, Part IX, Paragraph 1.
- ³¹ CWC, Verification Annex, Part IX, Paragraph 24.
- ³² By the late 1980s, there was increasing use of biotechnological processes in the production of chemicals. See, for example, M K Turner, 'Biological Catalysis and Biotechnology', Chapter 6 in C A Heaton (ed.) *The Chemical Industry*, London: Blackie, 1998.
- ³³ This is one example of quite a number of 'creative ambiguities' which were devised in order to obtain consensus on the CWC text. On this particular issue, the OPCW Scientific Advisory Board has subsequently concluded that from a scientific standpoint, it is no longer possible to make a clear distinction between 'chemical' and 'biological and biologically mediated' processes, and that any biological production of scheduled chemicals would be declarable under the provisions of the Convention. See: Report of the Second Session of the Scientific Advisory Board, OPCW document SAB-II/1, 23 April 1999.
- ³⁴ For example, Australia had earlier estimated that there may have been in the order of 15,000 OCPFs, based on a declaration threshold for OCPFs of 100 tonnes. It was anticipated that there would be a substantial reduction in the number of declarable OCPFs with a reporting threshold of 200 tonnes. See R J Mathews, "Verification of Chemical Industry under the Chemical Weapons Convention", in *Verification 1993*, (London: VERTIC, 1993), pp 41-54.
- ³⁵ CWC, Verification Annex, Part IX, Paragraph 2. However, the proposal to exclude facilities that exclusively produced explosives was more related to concerns to exclude certain military facilities, rather than keeping the total number of facilities manageable.
- ³⁶ CWC, Verification Annex, Part IX, Paragraph 4(c).
- ³⁷ CWC, Verification Annex, Part IX, Paragraph 14.
- ³⁸ CWC, Verification Annex, Part IX, Paragraph 11.
- ³⁹ CWC, Verification Annex, Part IX, Paragraph 22.
- ⁴⁰ CWC, Verification Annex, Part IX, Paragraphs 14-20.
- ⁴¹ For example, Australia argued that an OCPF producing pesticides located in a State with an interest in producing CW would pose a significantly greater risk to the Convention than a small Schedule 1 laboratory located in a State with no interest in producing CW. Thus, the CWC text does not indicate a risk hierarchy for Schedule 1, Schedule 2, Schedule 3 facilities and OCPFs.
- ⁴² These provisions are not clearly understood, and a number of people are under the misunderstanding that because there is a clearly defined risk hierarchy for the scheduled chemicals, that the facilities producing those chemicals must automatically follow the same risk hierarchy. For example, in a recent article in this *Bulletin*, Detlef Maennig argued that 'The CWC, especially its Verification Annex, gives clear provisions regarding the decreasing risk which it attributes to Schedule 1, Schedule 2, Schedule 3, and DOC/OCPF chemicals and the facilities related to those chemicals.' See Detlef Maennig, 'The Problem of Thousands of Other Chemical Production facilities under the Chemical Weapons Convention: Are some more relevant than others?', *The CBW Conventions Bulletin* no. 81 (December 2008), pp 1-4.
- ⁴³ The 'Canberra Conference' included industry representatives from 66 countries (representing approximately 95% of the world chemical industry). A major outcome from this conference was a much closer understanding between officials and involved industry/association representatives, who pledged their support in the future work.
- ⁴⁴ Australia, 'On-site analysis for verification of non-production of families of Scheduled Chemicals', CD/CW/WP.353, 15 July 1991.

- ⁴⁵ Report of the OPCW on the Implementation of the Convention on the Prohibition of the Development, Production, Stockpiling and Use of Chemical Weapons and on their Destruction in 2007, OPCW document C-13/4, 3 December 2008.
- ⁴⁶ The report of the Technical Secretariat to the 2nd Review Conference provided the information that, between entry into force and 31 December 2007: 182 Schedule 1 inspections were conducted, at an average frequency of 6.7 inspections per declared facility over a period of 10 years; 405 Schedule 2 inspections were conducted, at an average frequency of 2.5 inspections per declared facility over a period of 10 years; 218 Schedule 3 inspections were conducted, covering 50.2% of declared inspectable facilities; and 521 OCPF's producing discrete organic chemicals (around 11.4% of the inspectable total) had been inspected after OCPF inspections commenced in 2000, as provided for by the Convention. See: 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, 18 April 2008). There were 118 OCPF inspections conducted in 2008 and it was agreed in the 2009 Budget that 125 OCPF inspections would be conducted in 2009. See: 'Decision: Programme and Budget of the OPCW for 2009', OPCW document C-13/DEC.5, 5 December 2008.
- ⁴⁷ Although minor problems have occasionally arisen in the course of some inspections, for the most part they have been carried out smoothly and with the full cooperation of the inspected State Party.
- ⁴⁸ Note by the Director-General, OPCW document RC-1/DG.1, p.12.
- ⁴⁹ Note by the Director-General. Report of the Scientific Advisory Board on Developments in Science and Technology, OPCW document RC-1/DG.2, April 23, 2003, Paragraph 4.4(a).
- ⁵⁰ Note by the Technical Secretariat: Review of the operation of the Chemical Weapons Convention since the First Review Conference, OPCW document RC-2/S/1*, 31 March 2008, Paragraphs 3.166 to 3.191.
- ⁵¹ Note by the Director-General: Information on the Enhancement of Other Chemical Production Facility Declarations, OPCW document EC-53/DG.11, 17 June 2008, Paragraphs 18-21.
- ⁵² The Technical Secretariat has noted that problems associated with the accuracy and timeliness of OCPF declarations has resulted in 24 of the 390 OCPF's selected for inspection between 2000 and 2006 not being inspectable. See: Note by the Technical Secretariat: Review of the operation of the Chemical Weapons Convention since the First Review Conference, OPCW document RC-2/S/1*, 31 March 2008, Paragraphs 3.173.
- ⁵³ This was a request flowing to the Technical Secretariat during the Second Review Conference. See: 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), OPCW document RC-2/4, 18 April 2008, Paragraph 9.65.
- ⁵⁴ Note by the Director-General: Information on the Enhancement of Other Chemical Production Facility Declarations, OPCW document EC-53/DG.11, 17 June 2008.
- ⁵⁵ It is proposed that information be provided in declarations as to whether the OCPF is undertaking the following types of production equipment: batch and multipurpose; batch and dedicated; continuous and multipurpose; and/or continuous and dedicated. See: 'Enhancement of OCPF Declarations: Proposed values for the R factor to be added to the A-14 Algorithm for OCPF Site Selection methodology: Technical Secretariat Proposal'. Informal OPCW Paper dated 30 March 2009.
- ⁵⁶ The 'main activities' declaration was intended by the Geneva negotiators to include sufficient information of the characteristics of the plant site and activities carried out there for the development of weighting factors as specified in Paragraph 11(b). The current unfortunate situation is a consequence of the Preparatory Commission process which was more focussed on the development of Schedule 1 and 2 verification issues because of the deadlines for initial inspections of those facilities – the current OCPF declaration format was never agreed by Conference decision, so this format could in fact be readily revised if agreed by States Parties. It seems a little odd that chemical companies typically provide considerably more information about their activities in their company brochures and on their websites than is contained in the OCPF declarations provided to the OPCW.
- ⁵⁷ Opening Statement by the Director-General to the Second Special Session of the Conference of the States Parties to Review the operation of the Chemical Weapons Convention, OPCW document RC-2/DG.2, 7 April 2008, Paragraph 61.
- ⁵⁸ In the early 1920s, there were preliminary discussions within the League of Nations on the feasibility of developing a chemical disarmament treaty. However, on the issue of verification of 'non-production' of CW by chemical industry, it was concluded that 'it would be useless to seek to restrict the use of gases in wartime by prohibiting or limiting their manufacture in peacetime'. See, for example, Stockholm International Peace Research Institute, *The Problem of Chemical and Biological Warfare*, vol IV, 'CB Disarmament Negotiations, 1920-1970', 1974, p 44.

ALLEGATIONS OF BW USE AND THEIR INVESTIGATION: LESSONS FROM THE PAST. A CASE STUDY FROM 1941

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After an interval of almost twenty years, the United Nations Secretary General's (UNSG) BW alleged-use investigations system is to be re-examined and updated, starting later this year.¹ Although the UNSG organised investigations into cases of alleged toxin warfare in southeast Asia and Afghanistan in 1981-82 (the 'Yellow Rain' episode) and then into cases of alleged CW use in the Iran-Iraq war between 1984 and 1987, and later still in Mozambique, Armenia and Azerbaijan in 1992, there has never been a UN organised investigation into allegations of BW use involving infectious disease. The ill-fated BTWC Protocol's Annex B contained detailed procedures for conducting investigations into alleged BW use or a suspicious outbreak of disease, but as this exercise failed in 2001 attention must now centre on strengthening the UNSG mechanism. There are few historical examples where a BW attack has been proven to have taken place as a result of a meticulous forensic investigation. At the time of writing, summer 2007, US authorities still have not been able to identify the perpetrator(s) of the anthrax letter attacks almost five years after the event.

But what of the WWII Japanese BW attacks in China? Are there any lessons from the 1940s that may have a bearing on contemporary approaches to investigations into alleged BW use? Although microbiological science has developed dramatically since that time, many of the fundamental problems presented by a BW use investigation remain the same. Issues such as attribution (proving that an outbreak of disease was deliberate, linked to a specific event and perpetrator), distinguishing between a natural and man-made outbreak of disease, the role of epidemiology, witnesses reliability, interpretation of clinical data and whether all relevant, especially perishable evidence has been collected, present the same difficulties today as they did in the 1940s. Therefore it might be worth looking at one case study to see whether there are any useful pointers for future work on the UNSG system as well as preparedness plans for responding to a terrorist attack. The Japanese attack on the city of Changteh, Hunan Province in November 1941 was regarded, at least by some contemporaries, as one of the best examples of actual or potential BW use.² There are several key papers on this incident available in one of the WO 188 class files at The National Archives, Kew.³ A review of local Chinese investigations and the subsequent UK and US reactions in 1942 and up to the summer of 1945 described in these papers follows.

The attack: 4 November 1941

On 4 November 1941 at about 0500 a single Japanese aircraft appeared over Changteh, flying very low. The weather conditions were rather misty, which suggests a lack of any

wind. Instead of bombs, wheat and rice grains, pieces of paper, cotton wadding and some unidentified items were dropped. These materials fell chiefly in the Chi Ya Hsiang and Kwan Miao Street and around the East Gate district. After the all-clear signal was sounded at 1700 specimens of rice grains were collected and sent by the police to the Kwangteh Hospital for examination. They do not appear to have collected the other debris. The grains appeared to reveal the presence of microorganisms resembling *Pasturella pestis* – the then name for *Yersinia pestis* – the causative agent of plague. A subsequent examination however showed that this was incorrect.⁴ The culture obtained was injected into two rabbits, but the reaction was slight and thus indeterminate.⁵ Nevertheless, this finding planted the seed in the minds of the physicians that the Japanese had spread plague-infected materials. It would colour their reaction to subsequent developments.

First and last casualties: 11 and 19 November 1941

The index case did not appear until 11 November, seven days after the aerial attack. An eleven-year old girl from Kwan Miao Street – one of the main locations of the attack - was admitted to hospital suffering from high fever. No other positive clinical finding was recorded, but direct smear examination apparently revealed the presence of microorganisms similar to *P.pestis*. The girl died on 13 November and a post-mortem examination showed highly suspicious traces of plague. Smears taken from internal organs exhibited similar microorganisms to those found earlier in the blood samples. On 13 November another case was found dead. On inquiry of the victim's relatives it appeared that the casualty had a high fever on 11 November and had died two days later. Liver puncture was performed and direct smear examination again showed the presence of microorganisms resembling *P.pestis*. This patient lived in the East Gate district – another of the attack locations. Two more casualties came to the attention of Changteh's medical authorities, both with high fever and enlargement of the glands in the groin with symptoms appearing on 12 November. Smear examination of gland puncture fluid showed the presence of *P.pestis* microorganisms. One victim died on 13 November, the other on 14 November and both had lived in the East Gate district. A fifth case was admitted to hospital on 19 November having fallen ill the previous day with fever, delirium and buboes. The patient died on the following day – 20 November. It was not recorded where this unfortunate resided. All of these cases were Hunan natives and had lived in Changteh or its immediate environs for years; there were no reports that they had travelled out of the city in recent weeks. Since 20 November no fresh cases of this disease had come to the medical authorities' attention.⁶ The clinical

history and smears from five other cases, however, left little doubt in the minds of local clinicians that the cause of death was plague.

Natural or man-made outbreak?

Could this outbreak be connected to alleged infective material scattered by the Japanese aircraft? There had been no history of prior presence of plague in Hunan province. Indeed plague has been unknown to the oldest inhabitants, being practically unheard of until the arrival of the plane on 4 November. Changteh itself had never before, as far as was known, been afflicted by plague. Moreover, during previous pandemics and severe epidemics elsewhere in China, this part of Hunan and central China in general had never been known to have plague outbreaks.⁷ Local medical experts believed that epidemiologically plague tended to spread along transport routes for grains on which rats follow and feed. The nearest plague epidemic centre to Changteh was about 2000 km away by land or river communication. Changteh as a rice producing district, supplied rice to other districts in China and thus did not receive grain or rice from other locations. In short, there was no trail for infected rats to follow *into* the city. Dr Pulitzer, a former expert epidemiologist with the League of Nations, observed that that he could see no way in which the plague could have been introduced by natural means. Plague was endemic in Chekiang and Fukien, but in his view it was practically impossible for it to have jumped across Kiansi and East Hunan to Changteh.⁸

All the plague cases came from areas within the city where the objects dropped by the Japanese plane were found. Amongst these items the medical authorities later assumed that there must have been infected vectors, probably fleas. The fleas however were not noticed on the spot because there was no reason to suppose that they might have been present in the first place. Moreover, as the air raid alarm had lasted some twelve hours thus keeping people in shelters, experts believed that any fleas associated with the dropped materials must have had time to escape to other hiding places before the suspect objects were recovered. It was conjectured by one observer that the rice and wheat might have served as bait for local rats in order to provide a ready host for the infected fleas.⁹ However, there was no apparent evidence of any excessive rat mortality before and for some time after the attack, which would have been strongly indicative of plague. About 200 rats were caught and examined during November and December 1941, but no evidence of plague was found. In late January, however, and in early February 1942 – about three months after the suspected attack – eighteen rats examined from a total of 78 did have plague infections.¹⁰ Contemporary health officials believed that since plague was primarily a disease of rodents, the usual sequence of events would have been for an epizootic to precede a human outbreak, but this did not occur in this occasion in Changteh. The supposition was thus that infected fleas must have attacked humans first, then the rats a little later. Infected fleas were known at that time to be able to survive under suitable conditions for weeks without feeding. The accepted contemporary wisdom was that the normal incubation period of bubonic plague was 3 – 7 days and, occasionally, even up to 8 or even 14 days. Thus the outbreak's time lines were also strongly indicative of a deliberate attack. In this instance the first case appeared seven days after the apparent attack,

the last fifteen days after. No cases of pneumonic plague were reported. On the basis of the numbers of reported casualties the attack was clearly ineffectual.

UK initial reactions: January 1942

The evidence that the outbreak was plague was clearly incontrovertible from the clinical evidence and a compelling case too could be made that it was directly connected to a deliberate Japanese attack. However, we must remember that in the early 1940s the understanding of biological warfare and how agents could be effectively spread was still embryonic – UK offensive research at Porton, for instance, had only relatively recently got underway with the establishment of the Biology Department, Porton (BDP).¹¹ So what did British authorities and the new Porton experts make of the reports that reached them in 1942?

Landsborough Thomson, Medical Research Council appears to have been the first UK expert to offer a view on the basis of reports that had reached him. Thomson told the War Office that, *"It is an unlikely story. The circumstantial evidence seems weak, and plague bacilli in rice or other materials would almost certainly be harmless - only the dissemination of infected fleas or infected rats would lead to cases of the disease, and even then only under very favourable conditions."*¹² Henry Everett of the Offices of the War Cabinet wrote to Dr Paul Fildes, the head of the BDP at Porton Down. In his letter Everett commented that, *"As a mere layman it seems to me very doubtful whether their conclusion has been proved. It seems clear that an aeroplane, no doubt Japanese, flew over the city and dropped a certain quality of grain and rags and that a short time afterwards a number of people died of plague. The inference that these people acquired plague from fleas which were dropped by the aeroplane may be true, but there seems to be no evidence that fleas of this character were included in the articles dropped. The fact that the authorities cannot offer any other explanation for the outbreak of plague seems to me to be far from conclusive."*¹³ However, Fildes was a little less dismissive. In his reply he stated his view that he saw, *"no reason to suppose that plague could not be started by dropping infected food for the local rats. In any case, it is essential to follow the matter up and obtain a definite statement as to whether the continuing investigations have revealed the plague bacilli, if they have, the conclusion is certain that an attempt has been made, even though a futile one."*¹⁴ So by early January 1942 UK views appear to have been mixed.

UK reactions: spring – summer 1942

Despite Fildes' open mind, opinion seems to have hardened in the subsequent months that whilst accepting that there had been a plague outbreak, it could not possibly have been a deliberate case of BW use. Perhaps the fact that there had only been five fatalities might have been a factor in this assessment, although this is not stated anywhere in the available archival papers. BDP provided its considered view on the event on 23 March 1942. The key conclusion was that there was no reason to doubt that something was dropped from the aircraft and that cases of plague had occurred. It noted in particular that, *"since no plague bacilli were found on the material alleged, but not proved to have been*

dropped, nor in local rats and since no fleas were found, there is certainly no proved connection between the aircraft and cases of plague. Furthermore, the evidence does not seem convincing that natural plague in the neighbourhood could be excluded.”¹⁵ This assessment is rather surprising given the evidence of plague found in rats reported in a paper prepared by the Chinese Director-General, National Health Administration dated 31 March 1942. This was not available to the Porton experts when they wrote their report. Similarly it is not clear why Porton was so dismissive of the apparently categorical statements that plague was unknown in Changteh prior to 4 November 1941.

By June 1942 the Deputy Director of Hygiene and Pathology at GHQ India argued that the reports he saw lacked any scientific basis for their conclusions. The chances of spreading disease by the methods described were in his view negligible.¹⁶ At this point the archival evidence becomes unclear because the next statement we have on the Changteh event from BDP comes on 2 September 1944 in the form of a corrective to their 23 March 1942 assessment. Two years later the key judgement is amended to make it clear that from a “survey of the evidence there is every reason to doubt whether anything was seen to drop from the aircraft. Certainly no plague bacilli were found in materials alleged to have been dropped. There is thus no proved or even reasonably suspected, connection between the aircraft and the cases of plague, nor is the evidence convincing that the district was normally free from plague. For these reasons, this incident cannot be accepted as a proved instance of BW.”¹⁷

It is not clear why such a significant change was made or what new evidence was presented that so dramatically undermined the earlier case in face of the apparently accurate reporting and background epidemiological evidence. Indeed this assessment looks odder still when we see that in the following year in June 1945 the US, having looked at the apparently same evidence, concluded that the Changteh event *was* the strongest evidence obtained in China to date of Japanese employment of BW. US intelligence experts sent to China to investigate concluded that that it appeared likely that the reported attack had been an authentic incident, probably an experimental trial, since these tactics had not been observed or recorded since.¹⁸ Four years later in a Soviet held trial of alleged Japanese war criminals in Khabarovsk, Major-General Kiyashi Kawashima admitted under cross-examination, “that plague fleas had been dropped from aircraft on the Chinese in the area of the city of Changde.” Subsequent examination elicited the statement that the fleas had been sprayed from the plane.¹⁹

Conclusion

So what does this episode tell us about the problems of alleged BW use investigations today? First of all we need to be cautious in extrapolating too many lessons across the decades, but perhaps the following points are still relevant, or helpfully validate current contingency planning:

- The quality and quantity of evidence and its preservation is crucial.
- Critical evidence takes many forms and it must all be assessed by investigators – it is important not to reach conclusions until satisfied that a full investigation has been conducted.

- Prompt recovery of any intact delivery system or its fragments, or any vectors is essential.
- Prior assumptions and experience of physicians can shape prompt clinical diagnoses.
- Standard epidemiological investigative techniques will identify likely index case and possible source(s) of infection.
- It helps to have experts knowledgeable of the epidemiology of the suspect causative agent of the disease outbreak to help distinguish between natural and possibly man-made events.
- Background information on the pattern of endemic or episodic disease outbreaks in the area of the suspect BW attack is essential.
- Investigators should not be too quick to dismiss novel BW agent means of delivery however apparently ineffective.
- Witness reliability, their own knowledge and location are important. It must be established clearly whether witness descriptions of what they have seen is based on direct first hand experience or only hearsay.
- Interpretations may differ over time and experts may come to diametrically opposed conclusions based on largely the same evidence.

Notes

- * The views expressed here are the author’s own and not necessarily those of the UK Foreign and Commonwealth Office.
- ¹ The original Report of the group of qualified experts established in pursuance of General Assembly resolution 42/37 C appears in A/44/561 4 October 1989 Chemical and Bacteriological (Biological) Weapons report of the Secretary-General.
- ² Changteh is now Changde.
- ³ WO 188/680 Alleged Japanese biological warfare attack on Changteh, China, 1941.
- ⁴ WO 188/680 Alleged Japanese biological warfare attack on Changteh, China, 1941, Report of the Plague in Changteh, Hunan, December 12th, 1941 W K Chen, Head Dept of Laboratory Medicine Central E.M.S.T.S., Consultant Chinese Red Cross Medical Relief Corps to Dr R K S.Lim, Director Central EMSTS 12 December 1941.
- ⁵ WO 188/680 Alleged Japanese biological warfare attack on Changteh, China, 1941, E.Torvaldson, Christian and Missionary Alliance, Changteh, Hunan, 19 December 1941, to Col William Mayer.
- ⁶ WO 188/680 Alleged Japanese biological warfare attack on Changteh, China, 1941, Report of the Plague in Changteh, Hunan December 12th, 1941 W K Chen, Head Dept of Laboratory Medicine Central E.M.S.T.S., Consultant Chinese Red Cross Medical Relief Corps to Dr R.K.S.Lim, Director Central EMSTS 12 December 1941.
- ⁷ WO 188/680 Alleged Japanese biological warfare attack on Changteh, China, 1941, P Z King, Director-General, National health Administration, Japanese Attempt at Bacterial Warfare in China, 31 March 1942.
- ⁸ WO 188/680 Alleged Japanese biological warfare attack on Changteh, China, 1941, W W Petus, to Col William

- Mayer USA Military Attaché, Embassy of USA, Chungking, Szechwan, 20 December 1941.
- 9 WO 188/680 Alleged Japanese biological warfare attack on Changteh, China, 1941, The Military attaché in Chungking reported that latest opinion there appears to be that infected fleas were dropped and that rice was bait for local rats. J Cross, The War Office to Dr Fildes, Biological Dept Porton, 3 March 1942.
 - 10 WO 188/680 Alleged Japanese biological warfare attack on Changteh, China, 1941, P Z King, Director-General, National Health Administration, Japanese Attempt at Bacterial Warfare in China, 31 March 1942.
 - 11 G B Carter, *Chemical and Biological Defence at Porton Down 1916-2000*, London, The Stationery Office, 2000, page 60.
 - 12 WO 188/680 Alleged Japanese biological warfare attack on Changteh, China, 1941, A Landsborough Thomson, MRC c/o London School of Hygiene, London, to H Everett, Offices of the War Cabinet, 6 January 1942.
 - 13 WO 188/680 Alleged Japanese biological warfare attack on Changteh, China, 1941, H Everett, Offices of the War Cabinet, to Dr Paul Fildes, Experimental Station, Porton, 7 January 1942.
 - 14 WO 188/680 Alleged Japanese biological warfare attack on Changteh, China, 1941, Biology Section, Experimental Station, Porton to Henry Everett, Offices of the War Cabinet, London, 10 January 1942.
 - 15 WO 188/680 Alleged Japanese biological warfare attack on Changteh, China, 1941, The Alleged BW Incident at Changteh, Biology Section, Experimental Station, Porton, 23 March 1942.
 - 16 WO 188/680 Alleged Japanese biological warfare attack on Changteh, China, 1941, Deputy Director of Hygiene and Pathology GHQ India forwarded by Major GS to Biological Dept Porton, 24 June 1942.
 - 17 WO 188/680 Alleged Japanese biological warfare attack on Changteh, China, 1941, *New paragraph 4 to replace above: added for BW Intelligence Summary No1 – vide BW5260 of 2 September 1944.*
 - 18 WO 188/680 Alleged Japanese biological warfare attack on Changteh, China, 1941, James R Geddes. Maj, Central China – Japanese Use of BW at CHANG TE, Hunan Province CWS JICA China, Kuming, 28 June 1945.
 - 19 Daniel Barenblatt, *A Plague Upon humanity, The Secret Genocide of Axis Japan's Germ Warfare Operation*, Souvenir Press. London (2004) pages 220 – 221; see also Sheldon H Harris, *Factories of Death Japanese biological warfare 1932-45 and the American Cover up*, Routledge, London (1994) page 100.

Note by the Editors

The above article by John Walker draws cogent lessons from its careful review of information regarding an alleged Japanese use of *Pasteurella pestis* as a biological weapon in 1941 — an allegation that although given little credence by the UK at the time appears to have been essentially correct.

Readers' attention is called to a set of lessons drawn from a case in which the sequence of dismissal and acceptance was the reverse of that described above — a case in which allegations initially made at the highest levels of government were subsequently discredited. This is the case of the so-called “Yellow Rain”, the alleged use of trichothecene mycotoxins as weapons by Vietnamese and Khmer Rouge forces during the late 1970s and early 1980s in Laos and Kampuchea. In order that they also may contribute to the updating of the UN Secretary General's mechanism, we reprint the lessons that could be drawn from that more recent episode:

The [allegations] appear to have been based on no credible evidence: without confirmation of a single alleged witness report, without confirmation of an association between trichothecenes and any alleged attacks, without any sample of the agent itself, without any recovered rocket or other munition, without any otherwise inexplicable claimed symptoms, and without any credible defector or prisoner testimony in all these years, counterfactual analysis leads to the conclusion that, except for riot-control agent, CBW weapons were not used in Laos or Cambodia.

The lessons to be learned from the Yellow Rain episode are straightforward: reliable procedures must be used to acquire and evaluate interview evidence, including the use of corroborative cross-checks and double-checks and careful avoidance of leading questions. Chemical identification of trace components must adhere to appropriate standards for forensic analysis, and results must be corroborated by an independent laboratory. Hypotheses must be subjected to wide consultation and objective criticism. Failure to apply these lessons, whether through incompetence or because of political exigencies and pressures, imperils the credibility of subsequent investigations of situations in which CBW weapons may actually have been used.

That is the ‘Conclusion’ section from “The Yellow Rain Affair: Lessons from a Discredited Allegation” by Matthew Meselson and Julian Perry Robinson, which is Chapter Four in Anne L Clunan, Peter R Lavoy and Susan B Martin, editors, *Terrorism, War, or Disease? Unraveling the Use of Biological Weapons*, Stanford University Press (2008). We would also refer readers to two other recent publications: Rod Barton, *The Weapons Detective: The Inside Story of Australia's Top Weapons Inspector*, Melbourne (2006), especially pp 18-42, “Yellow Rain”; and Merle L Pribbenow, “‘Yellow Rain’: Lessons from an Earlier WMD Controversy”, *International Journal of Intelligence and Counter-Intelligence*, vol 19 (2006) pp 737-45.

Åke Bovallius, 1937-2009

Åke Bovallius, the Director of FOA-NBC Defence at Umeå from 1984 to 1996, died in Stockholm on 26 March 2009 after a long illness. He was 71.

Åke Bovallius was born in Gothenburg, Sweden on 2 November 1937 and graduated in 1964 from the University of Stockholm as a fil kand (*filosofie kandidat*) – similar to a BSc in chemistry, microbiology and statistics. In 1965 he joined the Swedish National Defence Research Institute as a Research Officer working on the continuous cultivation of micro-organisms and products. During this time he went on to obtain in 1969 his fil lic – similar to a Ph D – in microbiology from the University of Stockholm with his thesis entitled “Continuous culture of an isolated *Cytophaga sp.* with respect to optimal production of an enzyme-like factor that liberates cholinesterase from plaice muscle.” In subsequent years, he published several articles on topics ranging from studies of ingestion of *Yersinia pseudotuberculosis* through to long range air transmission of bacteria.

He was promoted in 1970 to Senior Research Officer on decontamination and aerobiology and again in 1974 to the Head of BW research. His section moved in 1979 with the NBC Defence group from Stockholm to Umeå, the largest city in Northern Sweden some 600 km north of Stockholm.

Five years later, on 1 July 1984, Åke Bovallius was promoted to Director of FOA-NBC Defence. As Director at Umeå he established good contacts with the University of Umeå and established the Umeå Biotechnology Association. He oversaw and signed the introduction to the FOA orienterar OM (public briefing book) in English on ‘Biological Weapons’ issued in 1986 when he noted that this was the first information provided by FOA on biological weapons for more than 20 years; this contributed to raising global awareness of the necessity for protection against biological weapons. The Swedish approach of total defence for the whole population requires effective defence to counter the spectrum of chemical and biological agents.

It is notable that it was under Åke Bovallius’s Chairmanship in 1993 to 1998 that the triennial Swedish International Symposium on Protection against Chemical Agents broadened its scope at the Fifth Symposium in 1995 to address Protection against Chemical and Biological Agents. He was Chairman again at the Sixth Symposium in 1998 when he led the organisation of two very timely pre-meetings: the first on Saturday 9 May before the Symposium began on Monday 11 May was an international meeting involving 27 experts from 17 countries arranged by the Swedish Pugwash Group to consider international cooperation and assistance under the Chemical Weapons Convention (CWC) and the Biological and Toxin Weapons Convention (BWC). The second was a pre-meeting to the Symposium itself held on Sunday 10 May which provided overviews of international activities in the CB area including the ongoing negotiations to strengthen the

BWC, the first year of the CWC, UNSCOM’s work on verification of biological weapons and SIPRI’s ongoing CB activities. It was thanks to Åke that Ambassador Tibor Tóth came to speak about the BWC negotiations and that OPCW Director General José Bustani came to talk about the CWC. It was particularly valuable to hold these meetings addressing the international regimes for the BWC and the CWC at the same time thereby helping synergies to be identified and explored for the greater benefit of all concerned.

The decade when Åke Bovallius was at Umeå was an eventful one as it was during this time that the Soviet Union became more open. One of the advantages enjoyed by Sweden was that, as a neutral country which was not a member of NATO, it was able to engage in a dialogue with both the East and the West. It was therefore possible in Sweden to meet and engage in dialogue some of the key players from Russia in regard to chemical and biological weapons – something that was simply not possible elsewhere at that time. Åke Bovallius helped to promote such exchanges, which were invaluable in helping to further understanding between the two sides.

As Director of FOA-NBC Defence, Åke Bovallius encouraged the ongoing activities to finalise the Chemical Weapons Convention (CWC) which was completed and opened for signature in 1993. He was closely involved following the Second BWC Review Conference in 1986 with the ad hoc meeting held in 1987 under the chairmanship of the Director-General of FOA, Bo Rybeck, which agreed the text of the forms to be used to submit information under the BWC Confidence Building Measures (CBMs). He led the international symposium hosted at FOA-NBC Umeå in May 1990 to address improving the CBMs for the BWC and was closely associated at the Third BWC Review Conference in 1991 with the Swedish working paper which proposed a nil-declaration form and a declaration form for national research and development activities concerning defence against biological and toxin weapons. He was also personally involved in the work of VEREX, the ad hoc group of governmental experts that met in 1992 and 1993 to identify and examine potential verification measures from a scientific and technical standpoint for the Biological and Toxin Weapons Convention (BWC) under the chairmanship of Ambassador Tibor Tóth of Hungary. He served as a moderator to assist the Chairman in the evaluation of potential verification measures in the broad area of ‘acquisition or production’; his fellow moderators were Patrice Binder of France for ‘development’ and Roque Monteleone-Neto of Brazil for ‘stockpiling or retention’. He also served as the rapporteur for the areas of ‘Identification of Key Equipment’ and for ‘Sampling and Identification (Off-Site)’ as well as acting, together with Graham Pearson, as Friends of the Chair on ‘Measures in Combination’.

During his years as Director at FOA-NBC, his inter-

national contacts and the widespread respect in which he was held meant that he and his staff from Umeå were in demand for international investigations such as those of the UN in Iran, Iraq and Mozambique. Åke's contributions significantly enhanced the outstanding international reputation of Sweden in regard to peace and security in respect of chemical and biological weapons. As Åke said at the end of a far-sighted forward looking article entitled *NBC in the 21st Century* published in 1997 in the ASA Newsletter:

In summary, the risk for a massive use of NBC weapons may be reduced in the future, while the risk for local use may increase both in war and peacetime. This means that protection will continue to be needed through the distant future, and not only for the military, but also for the police and the medical and civil defence, and for the general public.

After 12 years as Director at FOA 4 NBC-Defence, Åke Bovallius retired and then as a consultant advised the Swedish Defence Research Organisation in Stockholm on its reorganisation. He continued to serve as a senior adviser to the Swedish Government on chemical and biological disarmament. He also advised the Singapore Ministry of Defence and in 1997-98 he was awarded the first Singapore Defence Technology Distinguished Fellowship in recognition of his significant contribution to the development of Singapore's defence technology capabilities. Åke also contributed to the 2004 World Health

Organization publication *Public Health Response to Biological and Chemical Weapons*.

During the 1990s, Åke Bovallius was also a member of the first UNSCOM biological weapons inspection of Iraq (UNSCOM 7/BW 1) on 2 to 8 August 1991 led by David Kelly of the UK. In subsequent years, he continued to be involved in the evaluation of the Iraqi biological weapons capability and when UNMOVIC was established in 2000, he became Chief of the Biological Section in the Division of Analysis and Assessment located in New York and continued in this position until December 2001.

In recent years, Åke and his wife, Ulla, have enjoyed living both in Stockholm and at the family house on Gotland, the island in the Baltic some 90km east of the Swedish mainland. Åke was one of the shareholders for Stora Karlsö, a small island 6 km west of Gotland, which after Yellowstone is the second oldest nature reserve in the world, particularly known for its abundant bird life and many colonies of guillemots and razorbills.

Åke Bovallius was an outstanding Director for Umeå and under his leadership, Sweden did much to promote effective protection against the spectrum of chemical and biological weapons and to strengthen the international regimes totally prohibiting such weapons. He was well liked and will be greatly missed by his many friends both in Sweden and around the world. It is through Åke's efforts that especially Sweden and the world today is a safer place for all of us.

Åke Bovallius: a Personal Tribute

Graham S. Pearson

Åke Bovallius became Director of FOA-NBC at Umeå on 1 July 1984. I had become Director of CDE Porton Down two weeks earlier, on 17 June 1984 and over the next decade Åke and I became good friends and collaboration grew between Umeå and Porton Down. Our times as Directors overlapped as I left Porton Down at the end of March 1995 and Åke left Umeå a year later at the end of June 1996. We very much had a shared vision of what needed to be done to counter the threat of chemical and biological weapons.

Our two establishments were in many respects comparable – both dealt with all aspects of defence against chemical and biological weapons and both were headed by a civilian and largely staffed by civilians. The Swedish approach of total defence for the whole population provided a different but complementary perspective to that of the UK which focussed primarily on the protection of the armed forces. However, we both shared the view that effective defence is needed to counter the spectrum of chemical and biological agents.

Åke Bovallius's oversight of the FOA orienterar OM (public briefing book) in English on 'Biological Weapons' issued in 1986, when he noted that this was the first information provided by FOA on biological weapons for more than 20 years, was very timely. This publication helped to raise

awareness of the importance of protection against biological weapons and contributed towards the recognition in the UK of the increased importance of biological defence. At CDE Porton Down since 1979 the attention being given to biological weapons was simply to provide a watchtower for significant developments in microbiology that might lead to a change in the threat. However, the mid 1980s saw an increased awareness of the threat from bio-logical weapons and the effort at CDE was increased leading to the change in the name in 1991 to the Chemical and Biological Defence Establishment reflecting the need to counter the CBW spectrum. One of my lasting memories is of being invited to Stockholm by Åke in the early 1990s to give a briefing to the Supreme Commander, the head of the Swedish Armed Forces on the importance of effective defence against the CBW spectrum.

It was under Åke Bovallius's Chairmanship from 1993 to 1998 of the Board of the three yearly Swedish International Symposium on Protection against Chemical Agents that it broadened its scope at the Fifth Symposium in 1995 to addressing Protection against Chemical and Biological Agents. I was honoured to be invited to be the Keynote Speaker on that occasion when I spoke about "Chemical and Biological Defence: An Essential Security Requirement." At the Sixth Symposium in 1998, when he was again Chairman of the

Symposium Board, Åke organised two timely pre-meetings – the first a Swedish Pugwash Group meeting examining international assistance under the CWC and the BWC to which I contributed a paper on implementation of Article X of the BWC and the second – a pre-meeting open to all participants at the Symposium – focussing on the international developments in regard to the strengthening of the BWC and taking stock after the first year of the CWC to which I contributed a paper on the protocol to strengthen the BWC regime. At the Symposium itself I spoke at the opening session on the vital importance of the web of deterrence. Holding these meetings addressing the international regimes for the BWC and the CWC at the same time was particularly useful as it helped to identify and explore synergies to enhance these key prohibition regimes.

During VEREX, the ad hoc group of governmental experts that met in 1992 and 1993 to identify and examine potential

verification measures from a scientific and technical standpoint for the Biological and Toxin Weapons Convention (BWC) under the chairmanship of Ambassador Tibor Toth of Hungary, Åke Bovallius and I were asked to act as Friends of the Chair on 'Measures in Combination'. This was a memorable occasion when we endeavoured to draw together the synergistic advantages to be gained from measures in combination.

I believe that Åke was an outstanding Director for Umeå and that under his leadership, Sweden did much that helped especially Sweden and the world today to be a safer and more secure place for all of us. We had a shared vision and we enjoyed exchanging ideas and, as is said nowadays, thinking outside the box, to find novel solutions to common problems. Although I am very sad that Åke has died, I enjoy many happy memories of our times together and am immensely grateful to him for his friendship.

News Chronology

November 2008 - April 2009

What follows is taken from issues 83 and 84 of the Harvard Sussex Program CBW Chronicle, which provide a fuller coverage of events during the period under report here, and also identify the sources of information used for each record. All such sources are held 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 Biosafety Europe publishes its 'final considerations' on "coordination, harmonisation and exchange of biosafety and biosecurity practices within a pan-European network". The report assesses the cost-effectiveness of biosafety and biosecurity practices currently in operation across the European Union, develops a programme for training and seminars, and sets out a number of recommendations that may be used for future policy making within the European Union. Biosafety Europe is a consortium of eighteen partner institutions – from ten European countries – representing industry, academia and government agencies with the aim of "promoting European harmonisation and the exchange of practices relating to biosafety and biosecurity management of biological containment facilities". The project, which is funded through the European Commission's Sixth Framework Programme, commenced in April 2006.

1 November In New Delhi, the possibility of the Indian army constructing tunnels along the disputed border areas with Pakistan and China to provide, amongst other things, protection to its troops from chemical, biological and nuclear weapons is one of the main subjects being discussed at an ongoing conference for commanders and other leading members of the Indian army, so reports *The Times of India*. An unidentified "senior officer" attending the conference is quoted as saying: "Instead of making visible bunkers on hilltops, it would be much better if tunnels were drilled into mountains. China has resorted to tunnelling on a large-scale along the LAC [Line of Actual Control], especially in the Tibetan Autonomous Region."

2 November *The (London) Observer* reports that during the past year the UK intelligence services have rejected the applications of up to a hundred international students with a view to preventing the spread of knowledge and skills that

could be used in the proliferation of weapons of mass destruction and their means of delivery. The authority to reject applications was conferred on MI5 and MI6 under the Academic Technology Approval Scheme [see 1 Nov 07]. The *Observer* quotes an unidentified Foreign Office spokesman as saying: "There is empirical evidence of a problem with postgraduate students becoming weapons proliferators." Meanwhile, an unidentified spokesman for Universities UK, an organization of vice-chancellors, says the vetting system is working effectively, adding that "it is important to protect the UK from people who may wish to use technology and materials here inappropriately".

2 November The *New York Post* quotes an unidentified former colleague of Army scientist Bruce Ivins as saying that he and a number of other employees at the US Army Medical Research Institute of Infectious Diseases (USAMRIID) are seeking legal advice on bringing a lawsuit against the Federal Bureau of Investigation for having abused its power by investigating them at a time when Ivins was already the prime suspect. Speaking to the *Post* on condition of anonymity, the scientist says that he was under investigation by the Bureau for six months and as late as just two months before Ivins killed himself [see 29 Jul]. [See also 16 Oct]

3 November In Laos, a special joint military task force of Lao and Vietnamese troops have over recent days been launching attacks involving the use of "chemical agents" on Hmong civilians and dissident groups in Phou Da Phao and Phou Bia, so reports MediaNewswire [see also 1 Mar]. According to MediaNewswire the attacks are likely linked to the first official visit to Laos by Thai Prime Minister Somchai Wongsawat. Philip Smith, the Executive Director for the Center for Public Policy Analysis in Washington DC, is quoted by MediaNewswire as saying: "Hmong dissident groups and

families are also now providing fresh and credible reports that the Lao and Vietnamese military forces are apparently resorting to ruthless tactics and are again testing and using lethal chemical agents and defoliants to target Hmong groups hiding in the jungles and mountains in some of their recent attacks [in October].” Regarding the allegations of chemical weapons, spokesman for the Lao Human Rights Council Vaughn Vang says: “Currently the LPDR [Lao People’s Democratic Republic] forces are conducting heavy chemical, artillery, and starvation attacks on the Hmong in hiding groups in Laos. The attacks have caused a high number of civilian casualties among the Hmong people resulting in vomiting, migraine headaches, and skin injuries from the chemical attacks.” A week previously, Human Rights Watch, the Lao Human Rights Council and the Center for Public Policy Analysis were among a number of organizations and individuals who voiced concerns about the crisis facing the Laotian and Hmong refugees.

3 November At UN headquarters, OPCW Director-General Pfirter addresses the 63rd session of the United Nations General Assembly, on the theme ‘Cooperation between the United Nations and the OPCW’. [See also 27 Sep 07]

3 November In the USA, a group of activists – which includes the Government Accountability Project (on behalf of the Oregon Wildlife Federation) and the Sierra Club – have filed a lawsuit demanding that the Umatilla chemdemil facility be prevented from incinerating its stockpile of mustard agent next year, so reports the Associated Press. The lawsuit claims that the incineration process would expose the surrounding area to mercury and other contaminants. Previously, the facility completed the destruction of its stockpiles of sarin [see 8 Jul 07] and VX [see 6 Aug] munitions.

4 November The Israeli Knesset approves a bill that has as its purpose the prevention both of unsupervised development of dangerous diseases, and of the publication of scientific articles containing sensitive information on biological warfare. According to *Haaretz*, the legislation process had been delayed for several months to enable the incorporation into the bill of the findings of a joint committee of the National Security Council and the Israel Academy of Sciences and Humanities. The bill would require academic and private entities to obtain permission from the Israeli Health Ministry prior to beginning work with dangerous disease agents. For this purpose, a new oversight panel on biological research would be created by the Ministry. In addition, approval by a research panel from the entity in question would also be required. The bill would also regulate publication of biological warfare data and prohibit all non-military research “whose sole purpose is to cause or worsen an illness or hamper the ability to prevent or treat an illness”.

4 November The Israeli navy once again uses high-powered water cannon to attack and damage Palestinian boats fishing outside Israeli territorial waters off the coast of Gaza, so the International Solidarity Movement reports, quoting international Human Rights Observers (HROs) accompanying the fishing boats. HROs also report the use of a chemical malodorant in the water cannon. The chemical is thought to be the same as that used with increasing frequency by Israeli ground forces against non-violent protests in the West Bank [see 19 Sep]. Samples have been taken for chemical analysis.

4 November In Marseille, on the second and final day of the Euro-Mediterranean conference – known also as the Barcelona Process [see 27-28 Nov 95] – the heads of state and government of the Council of the European Union adopt a

final declaration which, amongst other things, sets out agreed policies with regard to preventing the proliferation of WMD. The declaration states: “Ministers reaffirm their common aspiration to achieve peace as well as regional security according to the Barcelona Declaration of 1995, which, *inter alia*, promotes regional security by acting in favour of nuclear, chemical and biological non-proliferation through adherence to and compliance with a combination of international and regional non proliferation regimes and arms control and disarmament agreements such as NPT, CWC, BWC, CTBT and/or regional arrangements such as weapons-free zones, including their verification regimes, as well as by fulfilling in good faith their commitments under arms control, disarmament and non-proliferation conventions... The parties shall pursue a mutually and effectively verifiable Middle East Zone free of weapons of mass destruction, nuclear, chemical and biological, and their delivery systems. Furthermore the parties will consider practical steps to prevent the proliferation of nuclear, chemical and biological weapons...”

4 November In the USA, the Department of Defense (DoD) releases *Defense Imperatives of the New Administration*, which sets out a list of priorities for the new US administration, including measures to prevent and respond to bioterrorist attacks. The 72-page report, dated August 2008, was prepared by the Defense Science Board Task Force on Future Perspectives, which completed its investigations in June 2008. The Defense Science Board is a federal advisory committee established to provide independent advice to the Defense Secretary. [See also 26 Mar 04 and 26 Jan 05]

On the question of intelligence, the report states: “While intelligence vis-à-vis WMD has improved since September 11, deficiencies remain... With regards to WMD, there remains a worrisome lack of fundamental information. Our recommendations center on acquiring information. Information will need to be positioned more closely to the source or otherwise have the coverage and acuity needed to sense the observable signs. Collection will be more covert, usually, but occasionally overt if we want to send a warning that we are monitoring, have more persistence, and the capability to be more intrusive than before. The nation will need to place more emphasis on the special nature of WMD, requiring as it does individuals with particular expertise as well as specialized equipment and materials.”

On WMD acquisition and transport, it says: “The worst forms of WMD, nuclear weapons and some kinds of biological weapons, would likely be acquired by terrorists from nation-state proliferators. We should not overlook the fact that an easy way for terrorists to create certain forms of WMD, including some biological weapons, would be from materials and equipment purchased or stolen within the United States... We recommend an even greater effort to strengthen and broaden international cooperative efforts in non-proliferation of nuclear and biological materials, as well as ‘loose expertise’. We also recommend making it more difficult to develop WMD within the United States by, for example, urgently removing easy access to certain WMD materials like Cesium-137.”

Regarding a WMD attack on the USA, the report states: “The nation is still poorly prepared to mitigate a WMD attack. We lack capabilities to recover even from a low-yield nuclear event in a metropolitan area or a large-scale epidemic like plague... Among many gaps, we simply do not have in place an end-to-end medical surge capacity, taking into account each and every medical resource required from nurses to beds to respirators to quarantine capacity... Our national response planning falls short of realistic execution. Plans are not exercised with sufficient frequency, or the right set of players, or the right scale. Nor are there mechanisms for continuous

improvement based on lessons that emerge from the exercises. Required resources are neither available nor in place. Furthermore, there is too much 'double counting' – presuming, for example, that the same National Guard troops can at once be counted upon to protect at home and fight abroad. ... Our recommendation argues for realistic and repeated planning and re-planning, repeated exercising and improvement, and a radical increase in our medical surge capabilities."

On DoD's response to a WMD attack, the report says the following: "DoD does have some unique capabilities in mitigation and recovery following a WMD attack... However, DoD is not well prepared to protect its own forces from many kinds of WMD attack. It lacks the large-scale medical surge capability that would be required for many kinds of virulent biological agents, for example... While DoD certainly has a good start on capabilities to mitigate and recover from WMD attacks, we see an urgent need to enhance those capabilities – even to the extent that they could also be available to support local authorities in time of national catastrophe, or at the very least serve as a model for states and local communities."

4-6 November In Dhaka, Bangladesh, the sixth [see 4-6 Sep 07] regional meeting of Asian CWC national authorities takes place. Attending the meeting, which is jointly organized by the government of Bangladesh and the OPCW, are 43 participants from 22 CWC parties. The meeting provides a platform for representatives of Asian national authorities and staff from the OPCW Technical Secretariat to discuss national implementation, issues relevant to encouraging cooperation among national authorities, and implementation of the CWC at the regional and sub-regional levels.

5 November The Danish foreign intelligence service has revealed that claims it made in 2003 that Iraq possessed WMD [see 14 Apr 04 and 13 Nov 06] were incorrect, so reports the Tehran-based PressTV. A note by the intelligence service to the parliamentary defence commission is quoted by PressTV as stating: "When [the intelligence service], like all other intelligence services, evaluated (wrongly) that Iraq most probably had [WMD], there is one main explanation: the sources were poor and insufficient... It had been difficult for Western intelligence agencies to operate and few Iraqis were able to be recruited as informants." A week previously, Danish Prime Minister Anders Fogh Rasmussen defended Danish involvement in the US-led war in Iraq. There was a "widespread opinion among politicians...that Saddam Hussein kept WMD and other chemical and biological weapons", he said.

5 November In Toulon and Canjeurs, France, a five-day European Union anti-terrorist exercise commences. The purpose of exercise 'EU Terror Attack' is to test response to simulated attacks with chemical and biological weapons.

5 November The US Department of Homeland Security announces plans for the Federal Emergency Management Agency to distribute more than \$3 billion in grants – under fourteen federal grant programmes – in FY 2009 in order to assist state and local governments in strengthening terrorism and disaster preparedness initiatives. A press release by the Department states that more than \$27 billion has now been provided since 2002 to strengthen the country's ability to prevent, protect, respond and recover from terrorist attacks, major disasters or other emergencies [see also 5 Jan 07]. [See also 3 Oct]

5 November In Oregon, the Umatilla chemdemil facility destroys the last of its VX nerve agent-filled M23 landmines,

having commenced the process two months previously [see 6 Aug]. The facility, which has now completed the destruction of all its VX-filled munitions, destroyed approximately 122,000 pounds of VX nerve agent in 11,685 landmines. It will now undergo a changeover period in preparation for its final operation – the destruction of approximately 2,350 tons of mustard agent stored in containers. A press release by the Chemical Materials Agency says that the Army has now safely destroyed nearly 95 per cent of its VX agent stockpile, with only two of the six remaining storage sites now having VX left to destroy.

5-6 November In Bethesda, Maryland, there is a meeting on *Sustaining Progress in the Life Sciences: Strategies for Managing Dual-Use Research of Concern*. Participating in the event – which is hosted by National Science Board for Biosecurity and co-sponsored by the World Health Organization and the US government – are experts from thirty-five countries, who discuss activities aimed at addressing the issue of dual-use research of concern in their respective countries.

5-9 November In Tehran, the ninth [see 4-8 Nov 06] international course on medical defence against chemical weapons takes place at International Medical Centre for Training and Treatment-Chemical Weapons in Tehran. The course is attended by a total of twenty-two medical practitioners from 21 CWC parties. The aim of the course is to provide an opportunity for participants to receive advice from Iranian doctors who have previously treated casualties of chemical weapons on the battlefield – such as those of the chemical attack on Sardasht – and who continue to provide medical care for them. This, it is intended, will enable participants to increase their understanding of the problems they may encounter during national or international responses to incidents involving chemical weapons. Participants also receive information on assistance and further training available through the OPCW.

6 November The London *Daily Telegraph* quotes unidentified "defence sources" as saying that an NBC officer for one of the British brigades acted as a "human canary" during the first Iraqi missile attack on the first day of the US-led invasion of Iraq [see 20 Mar 03] because British troops did not have sufficient batteries for their chemical agent monitors. One source is quoted as saying that when the al-Samoud missile attack took place on troops in Kuwait, the officer "had to go out of the tent and stand there" and that "the thinking was that if he fell down there were probably chemical agents around". The sources are also quoted as saying that British troops were not permitted to test the filter canisters on their respirators because of a shortage of filters.

10 November Russia plans to spend more than \$4.7 billion on chemdemil from 2009 to 2011, so reports Interfax news agency, without quoting any sources. As of 1 November, Russia has destroyed 11,747 metric tons of its stockpile of chemical weapons, reports the agency. [See also 28 Oct]

10 November In Brussels, the Council of the European Union adopts a Joint Action in Support of the BWC in the framework of the implementation of the EU Strategy against the Proliferation of WMD [see 12 Dec 03]. The Joint Action states: "For the purpose of the immediate and practical implementation of certain elements of the EU Strategy, and to consolidate the progress achieved in the universalisation and national implementation of the BTWC through Joint Action 2006 [see 27 Feb 06], the EU shall further support the BTWC,

with the following general objectives: promoting the universalisation of the BTWC; providing support for the implementation of the BTWC by the States Parties; promoting the submission of CBM declarations by the States Parties; providing support for the BTWC Inter-Sessional Process... The projects to be supported by the EU shall have the following specific objectives:

- (a) providing States not yet parties to the BTWC with means to carry out such initiatives at the national or sub-regional level as will raise awareness of the BTWC, by providing legal advice concerning the ratification of and accession to the BTWC, and by offering training or other forms of assistance in order for the national authorities to be able to comply with their obligations under the BTWC;
- (b) assisting the States Parties in the implementation of the BTWC at national level, in order to ensure that the States Parties implement their obligations under the BTWC by means of national legislation and administrative measures and establish functioning relationships between all national stakeholders, including the national legislature and the private sector;
- (c) facilitating the regular submission of CBM declarations by the States Parties, by preparing explanatory materials relating to the CBM process and by improving the technical aspects of the electronic submission of existing CBM declarations as well as by improving the security and maintenance of a restricted website, by facilitating the establishment of national points of contact and the submission of the first CBM declarations and by organising a conference of CBM points of contact in connection with BTWC meetings in 2008 and 2009;
- (d) promoting a focused discussion at the regional level among representatives of the government, universities, research institutes and industry on BTWC inter-sessional topics, in particular the oversight of science and education."

Appended to the Joint Action is an annex that sets out detailed descriptions of the projects concerned. Under a financing agreement, a total of EUR 1.4 million has been set aside to fund the various projects. The Joint Action will expire twenty-four months after the adoption of the financing agreement. [See also 20 Mar 06]

10 November The US Government Accountability Office (GAO) transmits to Congress *Nonproliferation: US Agencies Have Taken Some Steps, but More Effort is Needed to Strengthen and Expand the Proliferation Security Initiative*. The report follows a 2006 classified report, in which the GAO recommended that agencies establish clear PSI policies and procedures and performance indicators. Congress subsequently enacted a law calling for the administration to expand and strengthen the PSI and address GAO's recommendations. The present report assesses the extent to which the administration has complied with these demands. It states: "The administration has not issued a directive for PSI called for in the law [passed by Congress] or submitted the PSI budget report required by the law; however, it has submitted to Congress the required PSI implementation report... The administration has only partially addressed the provisions of the Implementing Recommendations of the 9/11 Commission Act of 2007. Although relevant agencies perform various activities under PSI, the administration's approach to PSI activities overall has been ad hoc. While DoD has taken more steps than State and law enforcement agencies to address some of the law's provisions, such as clarifying policies and procedures, none of the agencies has fully addressed the law's provisions. Consistent with internal controls, establishing clear PSI policies and procedures and performance indicators to

measure results will help the agencies better organize their PSI activities. While US agencies have made efforts to increase cooperation and coordination with the 19 other leading PSI countries that attend multilateral PSI planning meetings, they have not yet built relationships in the same way with over 70 PSI countries that are not part of these meetings... We also reaffirm the recommendations from our 2006 report on PSI that DoD and State should better organize their efforts for performing PSI activities, including establishing clear PSI policies and procedures and indicators to measure the results of PSI activities, and that they develop a strategy to work with PSI-participating countries to resolve interdiction issues." [See also 27-28 May]

10 November In the USA, the Center for Strategic and International Studies releases a 'rough working paper' on *Israeli-Syrian Air and SAM Strength Analysis: Working Estimates of Force Numbers and Location*, which includes a reference to the future acquisition by Syria of chemical and biological weapons [see also 30 Jul]. The document, which is written by Anthony H Cordesman and Abdullah Toukan, provides an analysis of the 'Air Defense Strike' and 'Air-to-Air Operational Capabilities' of the Israeli and Syrian armed forces so as to assess the relative strength of each. The paper says that since the early 1980s, Syria's goal has been "strategic deterrence" to discourage any Israeli attack. In this regard, it states that the heavy economic burden of sustaining the operational readiness of its armed forces and the fact that air defence, air force and armed forces equipment is generally "practically obsolete", "will lead Syria to acquire a cheaper means of Strategic Deterrence, specifically Chemical and Biological Weapons and Surface to Surface Missiles". [See also 22 Oct]

10-14 November In Spiez, Switzerland, a laboratory course for CWC parties in the East African sub-region takes place. Financial support for the course is provided by the Czech government.

10-19 November In Madrid, Spain, there is the third [see 27 Mar – 6 Apr 06] assistance and protection course for Latin American and Caribbean CWC parties. The course, which is jointly organized by the Spanish government and the OPCW, offers participants training to plan and build support teams in civil protection, civil defence, and rescue operations in contaminated areas. Information and advice is provided on appropriate responses and countermeasures to be taken in the event of incidents involving chemical warfare agents.

11 November In Tokyo, lawyers for the former leader of Aum Shinrikyo who was sentenced to death [see 15 Sep 06] for, amongst other crimes, his involvement in the sarin gas attack on the Tokyo subway system [see 20 Mar 95], file a petition for a retrial. According to the *Yomiuri Shimbun*, in the petition, Chizuo Matsumoto, also known as Shoko Asahara, is believed to be claiming that statements made by a former senior Aum member in court constitute new evidence. According to *Yomiuri*, in March 2006, former Aum member Seiichi Endo said he believed that late senior member of Aum Hideo Murai ordered cult members to use sarin, against the wishes of Matsumoto. Endo was sentenced to death in 2002 for murder, including the deaths caused in the 1995 attack in Tokyo [see 31 May 07].

Four months later, the Tokyo District Court rejects Matsumoto's petition. A week previous to this, Kazuaki Okazaki became the second former member of the cult to request a retrial. Okazaki, who was found guilty for his role in

a series of murders in 1989, was the first of thirteen former Aum members to have his death sentence confirmed with no right of appeal [see 7 Apr 05].

11 November India is acquiring chemical warfare technology from Israel, which it imported secretly from the West in violation of the CWC, so reports the *Pakistan Observer*. The *Observer* also states that during his visit to Israel in May 2000, Indian Home Minister L K Advani said: "I support the expanded cooperation between Israel and India in all fields, including this [nuclear] field."

11-13 November In Kampala, Uganda, the sixth [see 18-19 Oct 07] regional meeting of national authorities of African states parties takes place. The meeting, which is jointly organised by the OPCW and the government of Uganda, is attended by 61 participants from 26 CWC states parties. The purpose of the meeting is to provide an opportunity for regional CWC parties to consult with the OPCW Technical Secretariat, and each other, with a view to coordinating and improving assistance on implementing the provisions of Article VII, in areas such as regional trade in scheduled chemicals.

11-13 November In Jambes, Belgium, around 100 military experts from across the European Union, including NATO, convene for a 'high-level headquarters-based exercise' aimed at refining techniques for responding to a chemical, biological, radiological or nuclear attack. Although primarily focused on deployed operations, the exercise provides the opportunity for participants from different European institutions and other agencies to share ideas on homeland defence. The aim of the exercise is to produce a template for the management of incidents which will allow procedures to be developed at the operational-level for multi-national EU led operations. In a press release, the European Defence Agency says that it has spent two years developing WMD response tactics that are being tested during the exercise.

12 November In East Melbourne, Australia, the Auditor-General for the State of Victoria reports to the Parliament of Victoria that the state might not be equipped to adequately handle dangerous disease outbreaks. In the report, Auditor-General Des Pearson says that Victoria's lack of preparation to deal with major biological threats was revealed last year when equine influenza swept through the states of Queensland and neighbouring New South Wales. The report says that Victoria's Primary Industries Department (DPI) narrowly prevented the disease from entering the state, but the agency's access to personnel and other resources dwindled as it fought to contain the disease. The Australian Associated Press quotes the report as saying: "This raises concern about DPI's capacity and capability to sustain their response in a prolonged or large outbreak... National simulation exercises have also highlighted that a major emergency will quickly exhaust the pool of trained staff... DPI had limited capacity to provide additional staff to other states given the need to protect Victoria from disease, whilst other states combating the outbreak were not able to supply additional staff to Victoria."

12 November In Russia, the Kambarka chem-demil facility has now destroyed 97 per cent of its stockpile of lewisite and 32 of 80 lewisite tanks were being decontaminated at the plant, according to the head of the conventional problems department of the government of Udmurtia [see also 1 Oct]. ITAR-TASS quotes Valery Malyshev as saying: "After lewisite has been removed, all 80 tanks will be decontaminated by the

end of the first quarter of 2009... After that all processing equipment, tanks, pipelines and everything else that was in contact with the toxic agents will be decontaminated."

12 November At UN headquarters, Chairman of the 1540 Committee Jorge Urbina says that, as of 5 November, 159 UN member states had submitted the first reports required by Security Council resolution 1540, with 102 among them having provided additional information. He says that data received in the reports showed qualitative progress in implementation of the resolution, although more work was needed. In addition, committee members and experts contributed to fourteen conferences, seminars and workshops in the past year. Urbina makes his comments while before the Security Council during a hearing at which the Chairs of the Council's three anti-terrorism committees are giving briefings on cooperation between them [see also 18 Aug]. In addition to the 1540 Committee, these are the Counter-Terrorism Committee, established pursuant to resolution 1373 (2001), and the Committee concerning Al-Qaida and the Taliban and associated individuals and entities, established pursuant to resolution 1267 (1999).

12 November The US Department of Defense has developed "a new secret weapon to neutralize sites containing chemical or biological weapons", according to WiredBlog. When ignited, the "kinetic fireball incendiaries" – which comprise hollow spheres made of "rubberized rocket fuel" – randomly bounce off walls at high speed and break through doors, eventually turning the entire building into an inferno. WiredBlog says that published documents show that the weapon has previously undergone tests on underground bunkers. WiredBlog describes the weapon thus: "Each fireball is a hollow spherical shell with a hole in it; when the inside is ignited, the hole acts as a rocket nozzle. The kinetic fireballs eject an extremely high temperature exhaust which will heat up the surrounding volume to over 1,000F within seconds. Their random ricocheting around ensures that they will fill any space they occupy, and they are capable of diffusing throughout a multi-room structure." According to WiredBlog, the inventor of the weapon is Kevin Mahaffy of Exquadrum Inc. Mahaffy spent three years as head of the Motor Branch, where he oversaw solid and hybrid rocket propulsion before working as an engineer at Air Force Research Laboratory's Rocket Propulsion Division.

13 November In Orumiyeh, Iran, a one-day workshop has been held on prevention and medical operations during chemical, biological and nuclear events, so reports Iranian state-run provincial Television for West Azarbayjan. The workshop offered training for a total of 200 doctors and medical personnel of the regular army and Guard Corps as well as the provincial police force. [See also 5-9 Nov]

13 November In Brussels, the Security and Defence Agenda (SDA) hosts a meeting on *Risk Analysis and Preparedness for the next Influenza Pandemic*. At the meeting, health and security experts discuss how attention is being given to the disparity of risk analysis from both public and private sector actors engaged in pandemic preparedness throughout Europe. SDA subsequently publishes a 'dinner table report' of the meeting. SDA describes itself as "the leading Brussels-based security and defence think-tank where EU institutions, NATO, national government representatives, parliamentarians, industry, specialised and international media, think-tanks, academia and NGOs gather regularly to discuss the future of security and defence policies".

13 November The US Department of Homeland Security (DHS) releases a 'final rule' on rail security, aimed at securing rail shipments of hazardous material and deterring potential terrorist threats to the US rail network. The rule would give authority to the Transportation Security Administration (TSA) to search trains, and rail network infrastructure, involved in transporting dangerous substances, along with some sites that send or collect such materials by rail. The rules would also require railroad companies and some associated hazardous material sites to appoint personnel who would communicate with DHS and TSA officials on security and intelligence matters. Companies dealing with freight and passengers would be expected to immediately report suspicious events and possible threats to TSA officials. Railroad companies would be required to physically scrutinize hazardous cargo – including shipments of highly radioactive substances and dangerous materials that could be inhaled – before it departs.

Two weeks later the rule is published in the Federal Register. It enters into force four weeks thereafter.

13-14 November In Berlin, there is a NATO 'high level' seminar on *Present and Future Proliferation Risks and Threats: The Adequacy of the International Non-Proliferation Efforts to Address these Challenges*. It is the fourth [see 18-19 Apr 07] seminar on non-proliferation organized by NATO under the auspices of its Senior Politico-Military Group on Proliferation, which this year is hosted by the German Federal Foreign Office. Themes addressed include new initiatives to prevent proliferation, current regional proliferation threats and challenges, terrorism and WMD proliferation. In total, more than a hundred senior officials and academics from 65 countries attend the event. Among the 35 'high-level' speakers is OPCW Director-General Pfirfer.

13-16 November In Zagreb, Croatia, there is a NATO Advanced Research Workshop on *The Role of Independent Scientists in WMD Threat Assessment*, which is co-organized by the British and Croatian Pugwash Groups. Among those speaking is Donald C Clagett of the US Bureau of Verification, Compliance, and Implementation, Office of Chemical and Conventional Weapons on how individual chemical-plant sites might address the possibility of having their chemicals diverted for use as weapons of mass destruction. As regards the general purpose criterion of the CWC, Clagett says: "[A]dhering only to the provisions that apply to the chemicals on the CWC schedules of chemicals is not enough. The general purpose criterion, or more precisely Article I of the CWC, applies to any toxic chemicals and their precursors that are used for CW purposes... It requires anyone seeking to assess potential CW use to look at the chemical from a 'what if' standpoint and to make a judgment call."

14 November In Russia, the Maradykovsky chemdemil facility has completed destroying its stockpile of ammunition loaded with VX-type nerve agent, so reports Interfax-AVN, quoting an unidentified spokesman for the Kirov regional government. The spokesman is quoted thus: "Altogether 23,473 pieces of ammunition were disposed of. This means 4,546.741 tonnes of poisonous substances of the VX-type... Repairs of a second stage, the body for scrapping sarin and soman, are under way, fitting out with equipment and experimental work should begin. It is planned that we shall start scrapping [chemical weapons] in the first quarter of 2009."

Two weeks later, Mikhail Manin, a department head for the Kirov regional government, confirms the above destruction figures. [See also 1 Oct]

14 November From OPCW headquarters, the Technical Secretariat releases details of the current status of implementation of Article VII of the CWC by its current 184 parties compared to when the national implementation action plan was adopted at the eighth Conference of the States Parties [see 20-24 Oct 03] when there were 155 parties. The figures are identical to those released three months previously [see 18 Aug] save that since then parties implementing legislation covering all key areas has risen to 83 from 82, and confirmation regarding Article XI(2e) review has risen to 62 from 59. [Note: The Secretariat again omits to specify whether what it counts as "all key areas" of the national legislation includes measures for adequate implementation of the general purpose criterion.]

17 November In Washington DC, the Research Advisory Committee on Gulf War Veterans' Illnesses transmits to Secretary of Veterans Affairs James Peake *Gulf War Illness and the Health of Gulf War Veterans: Scientific Findings and Recommendations*. Mandated by the Congress in 1998, the Committee was appointed by Secretary of Veterans Affairs Anthony Principi six years ago [see 28 Oct 02] and directed to evaluate the effectiveness of government research in addressing central questions on the nature, causes, and treatments of Gulf War-related illnesses. The Committee, chaired by former Principal Deputy Assistant Secretary of Defense James H Binns, has held regular public meetings to consider scientific research, investigative reports and government research activities related to the health of Gulf War veterans. Comprising 454 pages, the present report presents information and evidence on matters reviewed by the Committee since it issued its last report four years ago [see 1 Oct 04]. It concludes that at least one in four of the 697,000 US veterans of the 1991 Gulf War suffer from Gulf War illness. It states: "The extensive body of scientific research now available consistently indicates that Gulf War illness is real, that it is the result of neurotoxic exposures during Gulf War deployment, and that few veterans have recovered or substantially improved with time... Veterans of the 1990-1991 Gulf War had the distinction of serving their country in a military operation that was a tremendous success, achieved in short order. But many had the misfortune of developing lasting health consequences that were poorly understood and, for too long, denied or trivialized... Illness profiles typically include some combination of chronic headaches, cognitive difficulties, widespread pain, unexplained fatigue, chronic diarrhea, skin rashes, respiratory problems, and other abnormalities... Studies consistently indicate that Gulf War illness is not the result of combat or other stressors, and that Gulf War veterans have lower rates of posttraumatic stress disorder than veterans of other wars... A renewed federal research commitment is needed [...] to achieve the critical objectives of improving the health of Gulf War veterans and preventing similar problems in future deployments. This is a national obligation, made especially urgent by the many years that Gulf War veterans have waited for answers and assistance." [See also 18 Mar and 30 Jul]

17 November The US Congressional Research Service releases *Terrorism and Security Issues Facing the Water Infrastructure Sector*. The report presents an overview of the US water supply and water quality infrastructure; describes security-related actions by the government and private sector since 11 September 2001, including those relating to the threat from chemical and biological terrorism; and discusses additional policy issues and responses.

19 November In Addis Ababa, Ethiopia, OPCW Director-General Pfirter addresses the Peace and Security Council of the African Union on the status of implementation of the CWC and the work of the OPCW.

19 November The Center for American Progress publishes a report which identifies the 101 most dangerous chemical manufacturing and water treatment plants in the USA and sets out a series of recommendations that such plants should be required to adopt with a view to minimizing any harm to local populations in the event of an accidental release or terrorist attack. The report – *Chemical Security 101: What You Don't Have Can't Leak, or Be Blown Up by Terrorists* – identifies chlorine, hydrofluoric acid and sulphur compounds as substances posing the greatest threat. It suggests, amongst other things, that thirty bleach plants could generate chlorine on-site without rail shipment and bulk storage, and that eight petroleum refineries could substitute the hydrofluoric acid used to refine crude oil with sulphuric acid or emerging solid acid catalysts. The list was compiled using risk management plans that chemical plants submitted to the Environmental Protection Agency at the end of last month. In its response to the report, the American Chemistry Council says that chemical plants are already changing their practices in order to comply with temporary chemical security regulations – the Chemical Facility Anti-Terrorism Standards (CFATS) – previously introduced by the Department of Homeland Security [see 2 Nov 07].

20 November Lebanon deposits its instrument of accession to the CWC with the UN Secretary-General. In thirty days, Lebanon will become the 185th [see 20 May] party to the Convention.

20 November The US National Intelligence Council releases *Global Trends 2025: A Transformed World*, which is the fourth report by the Council that sets out “to identify key drivers and developments likely to shape world events a decade or more in the future”. On the subject of terrorism and weapons of mass destruction, the report states: “For those terrorist groups active in 2025, the diffusion of technologies and scientific knowledge will place some of the world’s most dangerous capabilities within their reach. The globalization of biotechnology industries is spreading expertise and capabilities and increasing the accessibility of biological pathogens suitable for disruptive attacks. Radiological and chemical weapons may also be used by terrorists or insurgents seeking an advantage against opposing security or military forces and to create mass casualties.”

21 November In Brussels, the Political and Security Committee of the European Union approves an action plan that identifies new lines for action by the EU in combating the proliferation of WMD and their delivery systems. The objectives of the plan are: to raise the profile of non-proliferation measures within the EU by making combating WMD and their delivery systems into a priority of EU and member states’ policies; to identify existing best practice with a view to encouraging the spread of such practice at the level of member states’ national policies; to encourage better coordination and optimal mobilization of member states’ national policies and of existing EU tools and policies; and to identify areas where EU action should be increased. The primary deliverables of the plan are as follows: an updated risk and threat evaluation document; awareness-raising models for companies, academia and financial institutions; intensifying cooperation with third countries to help improve their non-proliferation policies and export controls; measures to combat intangible transfers of

knowledge and know-how, including mechanisms of cooperation in terms of consular vigilance; intensifying efforts to impede proliferation flows and sanction acts of proliferation; intensifying efforts to combat the financing of proliferation; and intensifying collaboration with relevant regional and international organizations.

Three weeks later, the General Affairs and External Relations Council endorses the action plan together with a document setting out its conclusions with regards to the plan.

22 November Indian Home Minister Shivraj Patil says that terrorists could use nuclear, biological and chemical devices and that the government favours a multi-pronged approach to deal with the threat. In his opening speech at a two-day conference for senior police officers, organized by the Indian Intelligence Bureau, Patil says: “Terrorists have begun to use military tactics... At present, terrorists are using sophisticated small weapons and explosive devices to perpetrate terror. In future, they are likely to use nuclear, biological and chemical devices and other mechanical and psychological devices.”

24 November In Rosario, Argentina, police arrest a man alleged to be the main supplier of ephedrine to Mexican drug cartels. According to the Argentine newspaper *La Nación*, as well as being suspected of having sent more than 18,000 pounds of ephedrine to Mexico since September 2006, Mario Roberto Segovia was also found to be in possession of 500 grams each of ricinine and aconitine. *La Nación* also reports that Argentine police have suggested that Segovia may also have connections to terrorist organizations.

24-28 November In Algeria, there is a national emergency-response training course for experts from different agencies involved in emergency response. Financial and logistical support is provided by the government of Algeria, with assistance from the OPCW.

25 November The US Congressional Research Service releases *The National Bio- and Agro-Defense Facility: Issues for Congress*. The report outlines current progress towards establishment of the National Bio- and Agro-Defense Facility [see 20 Jun], presents current and projected funding levels and timelines, and describes policy issues of potential interest to Congress, such as agency coordination, possession of viruses, construction timelines, disposition of Plum Island Animal Disease Center, and community safety concerns.

27 November In the UK, the Institute for Public Policy Research (IPPR) Commission on National Security in the 21st Century releases its interim report *Shared Destinies: Security in a Globalised World*, which says one of the biggest emerging threats comes from terrorists resorting to biological warfare. In the report, the Commission – which is co-chaired by Lord Robertson of Port Ellen and Lord Ashdown of Norton-sub-Hamdon – assesses the evolving global security environment and the specific challenges and opportunities they pose for the UK. The report states that the danger from pandemic diseases such as SARS and avian flu is growing and that existing arrangements to respond to serious incidents are inadequate, meaning “a serious disease outbreak or bio-terrorism incident in the next 18 months could tip the global economy from serious recession into a global depression”. The Commission warns that the ingredients for sarin gas and mustard gas are easily available, that radioactive materials are in wide use in hospitals and industry and that there are insufficient checks on who is buying biological agents. It adds:

“This in turn could allow a terrorist to buy genes for use in the engineering of an existing and dangerous pathogen into a new more virulent strain... [The biggest danger] may come from state weakness and the possibility that terrorists might gain access to state laboratories and facilities that are insufficiently secure.”

28-30 November At OPCW headquarters, there is the tenth [see 2-3 Nov 07] annual meeting of CWC national authorities. The theme of the meeting is to offer the chemical industry’s perspective on the implementation of the CWC, while the Technical Secretariat offers information on recent initiatives relating to Article VI declarations and verification issues. Attending are a total of 190 participants from 92 CWC parties and from Lebanon, which is a non-party that deposited its instrument of accession a week previously. In his opening address, OPCW Director-General Rogelio Pflirter notes that 177 of the 184 CWC parties have now established national authorities, and urges the remaining seven parties to do so as soon as possible. Participants share their experiences on national implementation, and regional groups discuss ways of fostering regional and sub-regional cooperation with regard to implementing the Convention.

During the meeting, the Technical Secretariat releases the 2008 version of the Declarations Handbook in English. Versions in the other official languages of the OPCW are released some four months later together with the 2009 version of the Handbook on Chemicals. The 2009 version of the Handbook on Chemicals contains information on over 1,300 scheduled chemicals and riot-control agents that have been declared to the Secretariat.

December The US Army’s Edgewood Chemical Biological Center releases *Global Survey of Research and Capabilities in Genetically Engineered Organisms That Could be Used in Biological Warfare or Bioterrorism*. The study assesses the global availability and cost of technology needed to acquire and produce large quantities of agents that could be used in biological warfare. In this regard, it analyses technology used to engineer novel organisms, to synthesize organisms, and to modify organisms existing in nature. It also assesses how the increase of legitimate activities could enable states or non-state actors to produce genetically engineered infectious agents that could pose a threat to domestic and international security. This study was supported by the Department of Defense Chemical Biological Program and the Army’s Edgewood Chemical Biological Center; Research, Development and Engineering Command; and Materiel Command.

December *The American Journal of Medicine* publishes research showing that protection is obtained from a single smallpox vaccination even when administered as much as 88 years previously [see also 12 Sep 07]. This, the researchers say, means that multiple or recent vaccinations are not essential to maintain vaccinia-specific antibody responses in human subjects and that in the event of a bioterrorist attack vaccinations should therefore be applied first to individuals who have not previously been vaccinated. The research – undertaken by the National Institute on Aging, the National Institute of Allergy and Infectious Diseases and National Institutes of Health – examined 246 subjects, of whom 209 were vaccinated one or more times from 13 to 88 years prior to the study; while an additional eight had had childhood smallpox and 29 had no history of vaccination or smallpox. In a statement, Dan L Longo of the National Institute on Aging says: “We found that vaccinated subjects maintain what appear

to be protective levels of neutralizing antibodies indefinitely and do not require booster vaccinations even if they are many decades removed from primary vaccination... These data imply that limited supplies of vaccine can be more usefully applied to individuals who have never been vaccinated – primarily individuals born after 1972.”

1 December At OPCW headquarters, there is a European Union-sponsored day for national authorities, which is held at the invitation of the European Union with France holding its Presidency. The aim of the workshop is to assist CWC national authorities with capacity-building and to enhance their dialogue with the chemical industry. Participating in the event are more than 190 participants – from 87 CWC parties – representing the chemical industry, associations from Europe and other regions, as well as from industries that have provided industry training at their facilities for those participating in the OPCW Associate Programme [see 19 Sep]. The workshop comprises two sessions: the provision of information on the import and export of scheduled chemicals, Article X submissions, and legal aspects related to the implementation of the CWC; and the preparation for, and handling of, industry inspections, the enhancement of capacity building through training in the chemical industry, and the advancement of the Responsible Care programme.

1 December US President George Bush says “the biggest regret of all the presidency has to have been the intelligence failure in Iraq” relating to the alleged possession by Iraq of WMD. In an interview with ABC News he says: “A lot of people put their reputations on the line and said the weapons of mass destruction is a reason to remove Saddam Hussein. It wasn’t just people in my administration; a lot of members in Congress, prior to my arrival in Washington DC, during the debate on Iraq, a lot of leaders of nations around the world were all looking at the same intelligence... You know, that’s not a do-over, but I wish the intelligence had been different, I guess.” Asked whether the US-led invasion [see 20 Mar 03] would still have gone ahead had the intelligence reached different conclusions, he says: “You know, that’s an interesting question. That is a do-over that I can’t do. It’s hard for me to speculate.” [Note: Four years previously, however, Bush told NBC’s Meet the Press: “Saddam Hussein was dangerous with weapons. Saddam Hussein was dangerous with the ability to make weapons. He was a dangerous man in a dangerous part of the world... I believe it is essential that when we see a threat we deal with those threats before they become imminent. It’s too late if they become imminent. It’s too late in this new kind of war. And so that’s why I made the decision I made].”

1-5 December In Geneva, states parties to the BWC convene for the second [see 10-14 Dec 07] of four annual meetings in preparation for the 2011 Review Conference, in accordance with the decision taken at the Sixth Review Conference [see 8 Dec 06]. The purpose of the meeting is to develop and consolidate the work undertaken by the second meeting of experts four months previously [see 18-22 Aug] on the promotion of effective action on biosafety, biosecurity, oversight, education, awareness-raising and codes of conduct. The meeting is chaired by Ambassador Georgi Avramchev of the former Yugoslav Republic of Macedonia.

In total, 97 BWC parties participate in the meeting. The following five states that have signed but not yet ratified the Convention participate without taking part in the decision-making process: Burundi, Egypt, Haiti, Nepal, and Syria. In addition, Israel, which is neither a party nor a signatory to the

Convention, participates as an observer. 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 International Committee of the Red Cross, Interpol, the World Health Organization and the World Organisation for Animal Health. Also granted observer status are 17 non-governmental organizations and research institutes.

During the general debate, the following 24 parties make statements: Algeria, Australia (on behalf of the Western Group), Brazil, Canada, Chile, China, Cuba (on behalf of the Group of the Non-aligned Movement {NAM} and Other States), France (on behalf of the European Union), Germany, India, Indonesia, Iran, Kenya, Libya, Malaysia, Morocco, Nigeria, Pakistan, Republic of Korea, Russian Federation, South Africa, Turkey, United Arab Emirates, and the USA. One international organization also participates in the general debate. At the end of the meeting, a final report is issued, containing more detailed language about the subject matter discussed. Attached to the document is a synthesis paper by the Chairman, which summarizes the proposals made during the meeting. According to Richard Guthrie, who is reporting on proceedings on behalf of the BioWeapons Prevention Project, "the use of language in the report is very careful to ensure that nothing might be construed as a decision or recommendation". In this regard, Guthrie points out that, days earlier, Iran had reminded the meeting that it still interprets the mandate given to the inter-sessional process by the 2006 Review Conference in a strict manner and so could not agree to any decisions or recommendations arising from the meeting, a view which is shared, amongst others, by the USA. Writing in the *Bulletin of the Atomic Scientists*, Malcolm Dando of the University of Bradford, UK says: "The report includes a range of standard statements that recognize the value of oversight, education, awareness raising, and adoption and/or development of codes of conduct. But it also offers some specific options that could lead to the successful implementation of these priorities... In sum the report's broad agenda demonstrates how a series of effective actions could be undertaken on the basis of this year's meetings. Given what we have seen since the black days of the Fifth BWC Review Conference in 2001, we can expect a variety of 'bottom up' actions to be taken, for example by national academies and international scientific organizations, with the objective of promoting some of these desirable developments in the run up to the 2011 Review Conference. But that will not be enough to produce a significant strengthening of the prohibition."

Three days later, the Russian Foreign Ministry issues a statement supporting the establishment of a verification regime for the BWC. "The Russian delegation actively participated in [the meeting] and explained the need for high biological security standards that are used in Russia... The most efficient way to achieve this goal is to develop and adopt a legally binding mechanism for monitoring the treaty."

Two weeks later, in an interview with *Arms Control Today*, Richard Lennane, the head of the Implementation Support Unit, says that although there remained differences of opinion between the Western Group and NAM with regard to biosafety and biosecurity on the one hand and other topics covered by the BWC on the other, he observed a shift of thinking among NAM countries. "The fact that the NAM are linking progress on these issues to peaceful cooperation is very positive," says Lennane. "It is a clear sign that the stark political divide between developing and industrialized countries on the relation between cooperation and control under the BWC is dissolving."

For further detail on the meeting, see Report from Geneva in *Bulletin* 81.

2 December Iranian Deputy Foreign Minister Mohammad Ali Hosseini has requested assistance from the OPCW to help Iran run a series of international training courses for treating victims of chemical warfare, so reports the Tehran-based news agency ISNA.

2 December The Iraqi High Tribunal sentences Ali Hassan al-Majid to death after convicting him of crimes against humanity for his part in suppressing the 1991 Shiite uprising in southern Iraq. Al-Majid, also known as 'Chemical Ali', is still awaiting his earlier death sentence to be enforced after the Tribunal found him guilty of genocide, crimes against humanity and war crimes for *inter alia* ordering the use of chemical weapons during Operation Anfal [see 24 Jun 07]. [See also 29 Feb]

2 December In Geneva, the winner of the Robin Coupland Prize for university undergraduates is announced by the BioWeapons Prevention Project. The US\$2000 first prize goes to Andrew Nguyen of the Biological and Chemical Sciences Faculty, University of Queensland, Australia. The \$800 second prize goes to Kirk Bansak, Department of Anthropology, Harvard University, USA. Entrants had to imagine how they would draft a letter to their university dean explaining why the BWC should be included as a mandatory component in the curriculum of undergraduate courses in the life sciences.

2 December At UN headquarters, the General Assembly adopts a series of resolutions on the previous recommendation of the First Committee, including ones relating to the Geneva Protocol, CWC and the BWC.

The General Assembly adopts a draft resolution on measures to uphold the authority of the 1925 Geneva Protocol by a vote of 174 in favour to none against, with 4 abstentions (Israel, Marshall Islands, Palau and the USA). The First Committee had previously approved the draft resolution on 31 October 2008 by a vote of 160 in favour to none against, with 3 abstentions (Israel, Marshall Islands and the USA). The resolution takes note of the UN Secretary-General's Note, renewing the call to all states to strictly observe the principles and objectives of the Protocol and reaffirms the necessity of upholding its provisions. It also calls upon those states that continue to maintain reservations to withdraw them and requests the Secretary-General to submit to the General Assembly, at its sixty-fifth session, a report on the implementation of the resolution.

The General Assembly adopts a draft resolution on the CWC without a vote. The First Committee had previously approved the draft resolution on 29 October 2008 without a vote. The resolution stresses that all possessors of chemical weapons, chemical weapons production facilities or chemical weapons development facilities, including previously declared possessor states, should be among those parties to the Convention.

The General Assembly considers a report by the First Committee on the BWC and, acting without a vote, adopts a draft resolution on the BWC contained therein. The draft resolution was approved by the First Committee on 29 October 2008 without a vote. It notes with satisfaction the increase in the number of parties to the BWC and reaffirms its call on all states that have not yet ratified the Convention to do so without delay. It also calls upon those that have not signed the Convention to do so as soon as possible. The resolution also urges BWC parties to work closely with the Implementation Support Unit of the Conference on Disarmament Secretariat and Conference Support Branch of the Office for Disarmament

Affairs in fulfilling its mandate, in accordance with the decision taken at the Sixth Review Conference [see 8 Dec 06].

Acting without a vote, the General Assembly adopts a draft resolution on measures to prevent terrorists from acquiring weapons of mass destruction. The First Committee had approved the draft resolution on 29 October 2008 without a vote. The resolution calls on UN member states to support international efforts to prevent terrorists from acquiring weapons of mass destruction, their means of delivery, and materials and technologies related to their manufacture; and to strengthen national measures relating thereto. With regard to strengthening national measures, it also encourages cooperation among member states and relevant regional and international organizations in strengthening national capacities in this regard.

The General Assembly considers a report of the Conference on Disarmament on the prohibition of the development and manufacture of new types of weapons of mass destruction and new systems of such weapons and, by a vote of 175 in favour to 1 against (USA), with 1 abstention (Israel), adopts the draft resolution contained therein. Previously, the First Committee approved the report and draft resolution on 29 October 2008 by 165 votes in favour to 1 against (USA), with 1 abstention (Israel). The resolution states the General Assembly – determined to prevent the emergence of new types of weapons of mass destruction that have characteristics comparable in destructive effect to those of weapons of mass destruction identified in the definition of weapons of mass destruction adopted by the United Nations in 1948 – reaffirms that effective measures should be taken to prevent the emergence of new types of weapons of mass destruction. In this regard, it calls upon all states, immediately following any recommendations of the Conference on Disarmament, to give favourable consideration to those recommendations.

The General Assembly also adopts a draft resolution on the Convention on Prohibitions or Restrictions on the Use of Certain Conventional Weapons Which May Be Deemed to Be Excessively Injurious or to Have Indiscriminate Effects. Amongst other things, it “calls upon all States parties to the Convention that have not yet done so to express their consent to be bound by the Protocols to the Convention and the amendment extending the scope of the Convention and Protocols thereto to include armed conflicts of a non-international character”.

2 December In the USA, the Commission on the Prevention of Weapons of Mass Destruction Proliferation and Terrorism releases its report *World at Risk* [see also 13 Sep]. The Commission, chaired by former Senator Bob Graham, was created by Congress – on the recommendation of the 9-11 Commission [see 22 Jul 04] – to establish a framework for studying efforts to protect the USA from an attack with weapons of mass destruction. The report concludes that “unless the world community acts decisively and with great urgency, it is more likely than not that a weapon of mass destruction will be used in a terrorist attack somewhere in the world by the end of 2013.” It states: “The more probable threat of bioterrorism should be put on equal footing with the more devastating threat of nuclear terrorism.” In this regard, while it determines that nuclear and biological weapons pose the “greatest evil”, owing to the fact that there are more controls on both nuclear weapons and materials, it concludes that an act of bioterrorism is the most likely. The report sets out a total of thirteen recommendations relating to dealing with the risk of bio-terrorism and nuclear proliferation, as well as with regard to dealing with Pakistan as the most likely source of acts of terrorism. The Commission also says that “the rapid growth of [laboratories in the USA undertaking research into biological defence] in

recent years has created new safety and security risks which must be managed”. On a more general note, it states: “Rapid scientific advances and the global spread of biotechnology equipment and know-how are currently outpacing the modest international attempts to promote biosecurity... Many biological pathogens and nuclear materials around the world are poorly secured – and thus vulnerable to theft by those who would put these materials to harmful use, or would sell them on the black market to potential terrorists.”

2 December The US Army announces that it will provide more security training for its laboratory personnel to help prevent any diversion of potential biological-weapons agents. Michael Brady, special assistant to Army Secretary Pete Geren, says an internal review board has proposed the new training in response to the Department of Justice concluding that Bruce Ivins, an Army microbiologist, carried out the 2001 anthrax attacks [see 6 Aug]. The announcement comes a day after the service launched a one-week review of security procedures for workers at the US Army Medical Research Institute of Infectious Diseases (USAMRIID) at Fort Detrick, where Ivins previously worked, so reports the Associated Press. USAMRIID spokeswoman Caree Vander Linden says the Army intends to expand training, accountability and inventory management reforms to several of its other sensitive laboratories within several months. Meanwhile, Army spokesman Paul Boyce says the Army plans to permanently shutter the Walter Reed Army Medical Center’s Armed Forces Institute of Infectious Diseases, where activities were halted in April due to “security, surety management and emergency response” [see also 2 Nov].

2-4 December In Oslo, Norway, ninety-four countries sign the Convention on Cluster Munitions during a signing ceremony, while Norway, Ireland, Sierra Leone and the Holy See also ratify it. The convention – which was sponsored by the United Nations – prohibits the use, production, transfer and stockpiling of nearly all cluster munitions. It also sets guidelines for the destruction and clearance of stockpiles, as well as assistance to victims of the munitions. *Arms Control Today* quotes a statement issued by the US Department of State at the beginning of the conference as saying that “such a general ban on cluster munitions will put the lives of our military men and women, and those of our coalition partners, at risk”. *Arms Control Today* states that the USA has adopted a policy that the limits the use of weapons that fail to detonate as intended more than one per cent of the time, and is also attempting to secure a relevant agreement within the Convention on Certain Conventional Weapons. Also pursuing that agreement are China and Russia, which like the USA have not signed the Convention on Cluster Munitions. The negotiation of the convention commenced with a meeting in Oslo in February 2007. In May 2008 it was adopted at a diplomatic conference in Dublin, Ireland.

2-5 December In The Hague, there is the thirteenth [see 5-9 Nov 07] session of the Conference of the States Parties to the CWC, which is chaired by Ambassador Minoru Shibuya of Japan.

Participating in the Conference are the following 126 CWC parties: Afghanistan, Albania, Algeria, Andorra, Argentina, Armenia, Australia, Austria, Azerbaijan, Bahrain, Bangladesh, Belarus, Belgium, Benin, Bolivia, Bosnia and Herzegovina, Botswana, Brazil, Bulgaria, Burkina Faso, Burundi, Cambodia, Cameroon, Canada, Chile, China, Colombia, Costa Rica, Côte d’Ivoire, Croatia, Cuba, Cyprus, Czech Republic, Denmark,

Ecuador, El Salvador, Eritrea, Estonia, Ethiopia, Fiji, Finland, France, Gabon, Gambia, Georgia, Germany, Ghana, Greece, Holy See, Honduras, Hungary, Iceland, India, Indonesia, Iran, Ireland, Italy, Jamaica, Japan, Jordan, Kazakhstan, Kenya, Kuwait, Latvia, Laos, Lesotho, Libya, Lithuania, Luxembourg, Madagascar, Malaysia, Mauritius, Mexico, Monaco, Mongolia, Morocco, Mozambique, Namibia, Nepal, Netherlands, New Zealand, Nicaragua, Nigeria, Norway, Oman, Pakistan, Peru, Philippines, Poland, Portugal, Qatar, Romania, Russia, Rwanda, Samoa, San Marino, Saudi Arabia, Serbia, Singapore, Slovakia, Slovenia, South Africa, South Korea, Spain, Sri Lanka, Sudan, Suriname, Sweden, Switzerland, Thailand, The former Yugoslav Republic of Macedonia, Tanzania, Togo, Tunisia, Turkey, Uganda, Ukraine, United Arab Emirates, the UK, Uruguay, the USA, Uzbekistan, Viet Nam, Yemen, Zambia, and Zimbabwe. Attending as observers are Israel – which has signed but not ratified the Convention – and Iraq and Lebanon, both of which are non-parties. Seven international organizations, specialized agencies, and other international bodies attend as observers, while seven non-governmental organizations also observe proceedings.

The following delegations make statements during the general debate: France (on behalf of the European Union and associated countries), Cuba (on behalf of the Non-Aligned Movement and China), South Africa (on behalf of the Africa Group), Pakistan, Saudi Arabia, Iran, Serbia, China, Russia, Ukraine, Mexico, Japan, South Africa (on its own behalf), the USA, Lebanon, Canada, Nigeria, New Zealand, Algeria, Costa Rica, Turkey, Switzerland, Brazil, Argentina, Singapore, Philippines, Norway, Australia, Malaysia, Sudan, Sri Lanka, Libya, Indonesia, El Salvador, Namibia, India, Yemen, Morocco, Zambia, Jamaica, Ecuador, Kenya, United Arab Emirates, Qatar, South Korea, Colombia, Israel, Nepal, and Bolivia.

At the end of the session, the Conference fails to agree on text relating to the granting of extensions to deadlines for the destruction of their Category 1 chemical weapons, and therefore is, for the first time, unable to adopt a consensus final report. The failure to adopt a report results from a series of developments involving the delegation of Iran on the final day. Amongst other things, the Iranian delegation had proposed including language under the agenda for destruction of chemical weapons that anticipated non-compliance by the USA in completing its chemdemil by 29 April 2012. After other delegations refuse Iran permission to re-open the agenda for the destruction of chemical weapons, Iran reacts by not accepting the final report. As a result, the Chairman issues a report in accordance with the Rules of Procedure of the Conference of the States Parties relating to the general powers of the presiding officer. *Arms Control Today* quotes unidentified “diplomats” as saying that Iran blocked consensus on the last day of the meeting by insisting on tougher language, urging chemical-weapon possessors to comply with treaty deadlines for destruction of chemical weapons stockpiles. A “US official” is quoted as saying: “There were no speakers on the issue of destruction when it came up on the agenda of the conference... We were therefore surprised when Iran circulated language on the issue...”

Amongst other things, the report adopted by the Chairman states that:

The Conference noted a report by the OPCW Director-General, dated 11 November 2008, on the status of implementation of Article VII of the Convention as at 15 September 2008 and approved a decision on the matter [see also 14 Nov].

The Conference noted a report by the Director-General, date 7 February 2008, on the implementation of the regime governing the handling of confidential information by the

Secretariat in 2007.

Pursuant to a decision by the Conference at its eleventh session [see 5-8 Dec 06], the Conference noted a status report by the Director-General, dated 28 November 2008, on the progress made by those CWC parties granted extensions of deadlines for the destruction of their Category 1 chemical weapons. Here the report states: “Though several proposals were made [regarding the final text] ... none met the consensus. Under these circumstances a decision was taken not to include any of these proposals in the text of the report.”

The Conference requested the Council to continue further intensive deliberations in line with Article X of the Convention regarding the development of measures for emergency assistance to CWC parties, including with regard to the victims of chemical weapons, and to report to the Conference at its fourteenth session.

The Conference approved a decision on the guidelines regarding declaration of import and export data for Schedule 2 and 3 chemicals.

The Conference considered and approved the report of the OPCW, dated 3 December 2008, on the implementation of the Convention in 2007.

As regards the fostering of international cooperation for peaceful purposes in the field of chemical activities, the Conference requested the Executive Council to continue to develop measures within an agreed framework to ensure the full implementation of Article XI, and to report back to the Conference at its fourteenth session.

The Conference called upon all remaining non-CWC parties – Angola, Bahamas, North Korea, the Dominican Republic, Egypt, Iraq, Israel, Myanmar, Somalia, and Syria – to ratify or accede to the Convention as a matter of urgency and without preconditions.

The Conference also agreed on a final budget of EUR 74.5 million for the OPCW for 2009.

3 December In The Hague, on the sidelines of the thirteenth session of the Conference of the States Parties to the CWC [see 02-05 Dec], Lithuania hosts a presentation on sea-dumped chemical weapons during which it presents the results of a recent meeting on the subject in Vilnius [see 30 Sep – 1 Oct].

3 December The US Department of Health and Human Services releases a draft of its updated strategic National Vaccine Plan – mandated by Congress and first released in 1994 – which highlights, amongst other things, the need to conduct large-scale vaccine distribution drills in preparation for a possible biological-weapon attack or other major disease outbreak. The 85-page report, dated 26 November 2008, states: “Emerging and pandemic infections and bioterrorist threats pose new challenges for vaccine development and regulation, manufacturing, vaccine delivery, and access in the US and abroad.” The draft plan was coordinated by the National Vaccine Program Office and reflects the input of a number of federal agencies. The plan addresses five broad goals: “develop new and better vaccines”; “enhance the safety of vaccines and vaccination practices”; “support informed vaccine decision-making by the public, providers, and policy-makers”; “ensure a stable supply of recommended vaccines and achieve better use of existing vaccines to prevent disease, disability and death in the United States”; and, “increase global prevention of death and disease through safe and effective vaccination”. In a statement accompanying the document, Assistant Health and Human Services Secretary Joxel Garcia says the plan is expected to be finalized late next year after vaccine producers, the public and others have a chance to provide feedback.

4 December The Cook Islands accedes to the BWC, thereby becoming the 163rd [see 8 Jul] party to the Convention.

4 December The Israeli military denies that its forces have used white phosphorus during its offensive in Gaza, after photographs and film of munitions showing similar characteristics to white phosphorus are reported in the press. Spokesman for the Israel Defence Forces Captain Ishai David says: "Israel uses munitions that are allowed for under international law... We are pressing ahead with the second stage of operations, entering troops in the Gaza Strip to seize areas from which rockets are being launched into Israel."

Four weeks later, after repeated reports of Israeli forces continuing to use white phosphorus, the military again denies using the agent. It refuses, however, to say what it has deployed, only that its use is permitted under international law.

Five weeks later, a United Nations official in Gaza says that Israeli jets fired as many as three shells of white phosphorus at its building in the city. Ma'an news agency quotes UN spokesperson Adnan Abu-Hasna as saying: "We know it was white phosphorus because of the way the fires burned, as well as the colour of some of the charred vehicles and other damage."

Six weeks later, Amnesty International accuses Israel of using white phosphorus in civilian areas of the Gaza Strip. [See also 13 Sep 06]

4 December In Turkey, exercises take place in Istanbul and Ankara which have as their purpose increasing both cities' readiness to deal with possible acts of bio-terrorism. In Istanbul counter-terrorism and crime-scene investigation teams respond to a simulated anthrax attack on the office of the governor's office. In Ankara, the scenario involves a sarin gas attack on the city's underground railway network. Teams from the Civilian Defense General Directorate, as well as fire brigade and first aid teams from the Gülhane Military Academy Hospital, respond to the incident. The exercises are part of the 'Güven 2008' (Security 2008) project of the National Security Council General Secretariat, which commenced three days previously with a number of other security-related exercises.

4 December In the USA, the Peace and Security Initiative (PSI) releases *2009 National Security and Nonproliferation Briefing Book*. As regards policy options in relation to chemical and biological weapons, the PSI recommends, amongst other things, that the Obama administration: "Increase annual funding for the Cooperative Threat Reduction (CTR) accounts in the FY 2009 and FY 2010 defence authorization and appropriations bills by at least \$100 million (including \$50 million for chemical weapons destruction in Russia) to support threat reduction and demilitarization of chemical, and biological weapons and agents; increase annual funding for the military construction accounts in the FY 2009 and FY 2010 defence authorization and military construction appropriations bills by at least \$200 million for accelerating construction of chemical weapons destruction facilities at Blue Grass, Kentucky, and Pueblo, Colorado; increase annual funding for the international organizations accounts in the FY 2009 and FY 2010 State Department appropriation bill by at least \$100 million in order to fully fund US annual dues and contributions to, amongst others, the OPCW; exert strong support and oversight in the Congress and the National Security Council of international threat reduction, non-proliferation, and homeland security programmes and of international arms control and disarmament organizations to help keep weapons of mass destruction out of the hands of terrorists; recommit to strengthening the BWC by fully engaging in the 2009

Meetings and laying the groundwork for significant advances at the 2011 Review Conference; and actively promote the establishment of an international capability within the United Nations to investigate allegations of biological weapons acquisition, development, and use". PSI was launched in October 2003 with the aim of facilitating "advocacy organizations, grassroots groups, think tanks, academics, and funders" to "work together to increase their capacity to influence US policy to promote a more secure, peaceful and just world".

5 December The UK Department for Environment, Food and Rural Affairs is to transfer the maintenance of 186 sites working on preventing animal diseases, together with the jobs of 800 civil servants, to a private company, so reports the London *Daily Mail*. The sites to be transferred to Interserve include the Central Science Laboratory, the Government Decontamination Services and the Veterinary Medicines Directorate.

5 December The US Department of Homeland Security's (DHS) Science and Technology Directorate releases the final Environmental Impact Statement (EIS) for the National Bio and Agro-Defense Facility (NBAF) and with it recommends Kansas State University as the preferred site for the facility. The NBAF will assume responsibility for research on anthrax and other diseases previously conducted at Plum Island, New York [see 20 Jun]. The design of the facility will begin in 2009, with plans for construction to begin in 2010. It is expected that it will be operational by 2015. Construction of the facility will cost \$563 million. The EIS analyses the risks associated with building the NBAF at each of the six proposed locations: Athens, Georgia; Manhattan, Kansas; Flora, Mississippi; Butner, North Carolina; San Antonio, Texas; and Plum Island, New York. It also considers a 'no-action' alternative, assessing the impacts if no NBAF were built. Amongst other things, the EIS analyses health and safety issues, land use, visual effects, infrastructure requirements (potable water, electricity, fuel, sewer, etc.), air and water quality, noise, geology and soils, biological and cultural resources, traffic and transportation issues, waste management, existing environmental issues, and cumulative effects. The journal *Science* quotes Jamie Johnson, the director of national laboratories at DHS as saying that Kansas State University stood out from the other sites owing to its recently completing the construction of its \$54 million Biosecurity Research Institute – which comprises 21 BSL-3 laboratories – on campus, the fact there is "strong community support" for the NBAF, and because it had offered a "solid package" to minimize the cost of constructing the facility. Three days previously, the Associated Press quoted a memorandum on the decision drafted by DHS Under-Secretary for Science and Technology Jay Cohen as saying: "The Steering Committee unanimously agreed that the Manhattan campus site is the preferred alternative and I concur with the Steering Committee's recommendation."

Five weeks later, following the expiration of a thirty-day period during which the losing states had the right to legally challenge the decision, Cohen signs a final 'record of decision' officially confirming Kansas as the preferred site. The Associated Press reports having obtained a copy of the document, although it has not yet been released publicly. Two senators issue statements confirming the signing of the document by Cohen. [See also 25 Nov]

7 December In Arkansas, the Pine Bluff chemdemil facility processes its first mustard agent-filled ton container. In a press release, the Chemical Materials Agency quotes Mark Greer, site project manager for the Pine Bluff Chemical

Agent Disposal Facility, as saying: "Current estimates predict the duration of the ton container disposal campaign to be about three years... We are confident that we will complete disposal operations by the Chemical Weapons Convention treaty date of 2012." [See also 3 May]

8 December In Brussels, the European Union Council of Foreign Affairs Ministers approves a common position making the European Union's code of conduct on arms exports a binding rule [see 30 Dec 02]. The decision was reached within the framework of the negotiations between the European Parliament and the Council of Ministers on the directive for arms technologies transfers within the EU. A statement issued by the French EU Presidency says the move "is an important step forward" because "it aims to avoid exported arms from being used for internal repression and international aggression and contributing to regional instability". The principle remains that each member state assesses, "on a case by case basis", applications for licences for "physical" exports (equipment, licences), brokering, "transit" or "transshipment", intangible transfers of software and technology (internet, telephone). The decision defines eight criteria, four of which are binding while the remaining four need only be assessed. They apply equally with regard to dual-use goods and technology. One of the four binding refusal criteria is "respect for the international obligations and commitments of member states", including obligations under the BWC, CWC and the Australia Group.

9 December Russia has now destroyed 11,842 tonnes of chemical warfare agents, or 29.8 per cent of its entire stockpile, according to ITAR-TASS news agency, quoting Chairman of the State Chemical Disarmament Commission and Presidential Representative to the Volga Federal District Grigory Rapota. He adds that Russia has destroyed 4,024 tonnes of VX-type gas, which when confirmed will bring the chemdemil total to 39.6 per cent. [See also 10 Nov]

9 December In Brussels, the Council of the European Union adopts its latest [see 16 Jun 08] six-monthly progress report on the implementation of the EU Strategy Against the Proliferation of WMD.

The report notes the recent adoption by the Council of a new action plan for combating the proliferation of WMD and their delivery systems [see 21 Nov].

On the issue of Russian chemdemil the report says: "The implementation of the existing Council Joint Action in support of Chemical Weapons destruction in the Russian Federation [see 19 Mar 07], which provided funding to complete the electricity supply infrastructure at the Shchuch'ye chemical weapon destruction facility, was completed in accordance with schedule. This project complemented the earlier EU project for procurement of electricity supply equipment for Shchuch'ye, both projects were implemented by the UK. The project contributed to the destruction of 1.9 million artillery and rocket munitions containing some 5,500 tonnes of nerve agents, which are stored at Shchuch'ye awaiting destruction. The financial reference amount was EUR 3,145,000."

On the issue of the Global Partnership, the report states: "At the G8 Summit [see 26-27 Jun 02] the Commission made a commitment to contribute EUR 1 billion to the G8 Global Partnership in line with other G8 Members. Today, the European Union has spent over EUR 635 million – mainly on nuclear safety, reconversion of former weapon scientists and nuclear submarines – and more than EUR 955 million are already committed. The EU has continued to finance activities in Russia through Council Joint Actions (CFSP funds) in areas such as chemical weapons destruction, physical protection

of radioactive sources and fissile material disposition (plutonium in particular)."

9 December In Arlington, Virginia there is a technical forum on *Trends in CBRN Field Analytics*. The event is co-hosted by the CBRN Defense Information Center and the Joint Requirements Office for CBRN Defense.

9 December In Washington DC, Trust for America's Health releases *Ready or Not – 2008: Protecting the Public's Health from Diseases, Disasters, and Bioterrorism*. The report warns that economic instability is prompting politicians to cut funds from programmes aimed at preparing communities for acts of bioterrorism and other major disasters. It also says that major gaps remain in many critical areas of preparedness including surge capacity, rapid disease detection, and food safety. It says that more than half of states met seven or fewer of ten key preparedness criteria and that the preparedness levels of states differed significantly. The report states that the best prepared states were Louisiana, New Hampshire, North Carolina, Virginia and Wisconsin; while the lowest scores were assigned to Arizona, Connecticut, Florida, Maryland, Montana and Nebraska. [See also 29 Oct]

9 December In the USA, Thomasingar – who days previously retired as Deputy Director of National Intelligence – says that the Bush administration must accept responsibility for not having rejected false allegations that Iraq possessed weapons of mass destruction prior to the US-led invasion of Iraq [see 20 Mar 03]. Speaking to the Associated Press, Fingar says: "I learned something a long time ago in this town. There are only two possibilities: policy success and intelligence failure... It's my observation that it's very hard to dislodge a mistaken interpretation once it gets into the head of a decision-maker who has used it in a speech, built it into a policy, conveyed it to colleagues around the world... That puts to me an awfully high premium on taking the time to get it right." Asked why intelligence officials did not contradict the administration on statements they considered incorrect, Fingar says: "I did not think that was part of my professional responsibility... That would imply excessive belief that one view is right and another view is wrong... At some point you have to try to make the system work, holding elected officials accountable, insisting that the oversight committee do their jobs [...] not using the court of public opinion."

10 December Malaysian Home Minister Syed Hamid Albar announces that Malaysia has released seven suspected terrorists including a member of the Islamist group Jemaah Islamiah who was suspected of having organized chemical and biological weapons development programmes in Afghanistan for al-Qaeda [see 26 Jan 04]. Yazid Sufaat, a former army captain who received a biological sciences degree from California State University in 1987, was arrested in late 2001 when he returned home from Afghanistan. As with the others released, Yazid Sufaat was held under the Internal Security Act, which permits authorities to detain individuals indefinitely and without trial, until his release on 3 December. The Associated Press quotes the Home Minister as saying: "We consider them no longer a threat. They will not harm public order or security of the nation." Nalini Elumalai, a human rights activist, says Sufaat has been instructed to remain within his home district in central Selangor state and to report regularly to police. According to the 9-11 Commission, in 2001 Sufaat spent "several months attempting to cultivate anthrax for al-Qaeda in a laboratory" in Afghanistan [see 22 Jul 04].

A week later, *Newsweek*, quotes an unidentified US official

as saying that Sufaat is still “considered dangerous”, notwithstanding that the Malaysian government has reassured the USA that it will keep him under surveillance.

10 December In Rockville, Maryland, the National Science Advisory Board for Biosecurity (NSABB) meets to discuss a series of recommendations that the government adopt to enhance security concerning laboratory personnel who have access to select biological agents and toxins. In this regard, the NSABB discusses the need to strike a balance between increased laboratory security and continued advancement of life sciences. Presentations are made by the Centers for Disease Control and Prevention, the Department of Defense and the Department of Environment on existing programmes on personnel reliability. No consensus on the recommendations is reached by the NSABB during the meeting.

11 December In the Bahamas, there is a consultative meeting on the ratification of the CWC by Bahamas. The purpose of the meeting, which is organized by the government of Bahamas, is to familiarize stakeholders with the obligations that will follow ratification by Bahamas of the Convention. In his opening address OPCW Deputy Director-General John Freeman says: “The Member States of the OPCW indeed look forward to The Bahamas taking this next and crucial step as a key contribution towards ensuring the Convention’s ultimate success.”

11 December In the US Senate, the Homeland Security and Governmental Affairs Committee holds a hearing on the recently released findings of the Commission on the Prevention of Weapons of Mass Destruction Proliferation and Terrorism [see 2 Dec]. Among those testifying before the Committee are Chairman and Vice-Chairman of the Commission Bob Graham and Jim Talent.

12 December The Kurdistan Regional Government has sent an ‘open letter’ to the governments of the Netherlands and Iraq requesting action with regard to the use of chemical weapons by Iraq during Operation Anfal, so reports UPI. The letter calls on the Dutch government to investigate companies that sold chemical weapons to Iraq that were later used against the Kurdish population, to assist the victims of the weapons, to issue an apology to the Kurdish people and to officially recognize the attacks against the Kurdish population as genocide. The letter also requests the Iraqi government to pursue a decision made six months previously to “seriously pursue, identify and bring to justice companies that sold weapons of mass destruction to Iraq”. [See also 2 Apr 07].

12 December In Zimbabwe, Information Minister Sikhanyiso Ndlovu accuses the UK of being behind the recent cholera epidemic in the country, a day after the government announced the epidemic had been eradicated. Speaking at a press conference in Harare, Ndlovu says: “The cholera epidemic in Zimbabwe is a serious biological chemical war force, a genocidal onslaught on the people of Zimbabwe by the British... Cholera is a calculated racist terrorist attack on Zimbabwe by the unrepentant former colonial power which has enlisted support from its American and Western allies so that they invade the country... Gordon Brown must be taken to the United Nations Security Council for being a threat to world peace and planting cholera and anthrax to invade Zimbabwe.” The London *Daily Telegraph* states that, according to the World Health Organisation, 792 people have died from the disease.

12 December The US Government Accountability Office (GAO) transmits to Congress *Terrorism Insurance: Status of Coverage Availability for Attacks Involving Nuclear, Biological, Chemical, or Radiological [NBCR] Weapons*. The report – which was requested under the 2007 reauthorization of the Terrorism Risk Insurance Act 2002 – states: “Consistent with the findings of a September 2006 GAO report on the market for NBCR terrorism insurance, property/casualty insurers still generally seek to exclude such coverage from their commercial policies... Commercial property/casualty insurers generally remain unwilling to offer NBCR coverage because of uncertainties about the risk and the potential for catastrophic losses, according to industry participants. Insurers face challenges in reliably estimating the severity and frequency of NBCR attacks for several reasons, including accounting for the multitude of weapons and locations that could be involved (ranging from an anthrax attack on a single building to a nuclear explosion in a populated area) and the difficulty or perhaps impossibility of predicting terrorists’ intentions... Without the capacity to reliably estimate the severity and frequency of NBCR attacks, which would be necessary to set appropriate premiums, insurers focus on determining worst-case scenarios (which with NBCR weapons can result in losses that would render insurers insolvent).” The report considers a proposal to make NBCR coverage mandatory for insurance firms and which would require the government to provide a greater percentage of compensation for possible losses than it would for a conventional weapons incident. It also considers a proposal that the government assume all NBCR risks and in turn require customers to pay premiums.

12 December In the USA, over the past two weeks more than thirty governors’ offices across the country have received typewritten letters containing a white powder. According to *The New York Times*, the Federal Bureau of Investigation (FBI) has determined the powder to be innocuous. FBI spokesman Richard Kolko says: “Unfortunately this sort of hoax letter is phenomenally common... In the last two years, we’ve had over 900 responses to white powder or WMD issues, and that doesn’t account for the countless number of incidents that don’t make it past the local police and fire department... We get them from a variety of people... A lot of times we find they are people in jail sending them to judges and lawyers, disgruntled citizens and kids.” According to the FBI, all the letters are postmarked from Texas and appear to be from the same source.

Four days later, Kolko says that envelopes containing an apparently harmless white powder have arrived at eight US embassies throughout Europe. He also says that more letters have been sent to governors across the USA, bringing the total to forty. According to State Department Spokesman Gordon Duguid, envelopes containing powder have been sent to embassies in Belgium, Denmark, Germany, Ireland, Italy, Latvia, Romania and Switzerland.

Three weeks later, a package containing white powder is sent to the US embassy in Santo Domingo, Dominica. [See also 20 Oct and 29 Oct]

13 December In China, a team of Japanese chemical weapons experts begin operations to excavate chemical weapons in the Harbaling area of Jilin Province, which were abandoned by the Japanese Imperial Army at the end of the Second World War. In a statement, the Chinese Foreign Ministry says it will supervise the work and provide necessary assistance during operations. The team was sent by the

Japanese government in accordance with the memorandum on the destruction of abandoned chemical weapons which was signed by China and Japan in 1999 [see 30 Jul 99]. [See also 25 Aug]

16 December In Strasbourg, the European Parliament approves a reform package aimed at facilitating arms exports within the European Union by creating a European system of export licenses to replace the current 27 separate export licensing regimes. According to *Aviation Week*, the legislation is part of a broader European effort to strengthen its defence equipment market. Under the new system, companies would apply for general licenses authorizing transfer of one or several items to one or multiple EU member states. The new rules are expected to take effect in 2009, says *Aviation Week*, however they still require approval by the European Council. [See also 8 Dec]

17 December In Brussels, the European Commission issues revised terms of reference to tender for a one-month study on evaluation of the support of the European Union for OPCW activities [see 22 Nov 04, 12 Dec 05 and 19 Mar 07] within the framework of the of the EU Strategy Against the Proliferation of Weapons of Mass Destruction. The document states: "The evaluation will provide the Commission and the Council with sufficient information to: make an overall independent assessment about past performance, paying particularly attention to the impact of the project actions against its objectives; and identify key lessons and to propose practical recommendations for follow-up actions".

18 December In the US House of Representatives, Chairman of the Committee on Oversight and Government Reform Henry Waxman issues a memorandum to the Committee charging President George W Bush with trying to deceive Congress when, in his State of the Union address two months prior to the US-led invasion of Iraq [see 20 Mar 03], he accused Iraq of seeking to obtain uranium from Niger [see 28 Jan 03]. In the memorandum, Waxman points out that in subsequent congressional investigations of Iraqi WMD capabilities, the then White House Counsel Alberto Gonzales stated that the CIA had approved the inclusion of the uranium assertion in Bush's speeches prior to his State of the Union address. Referring to the fact that a senior CIA officer and a National Security Council speechwriter have since contradicted Gonzales's claim, Waxman says: "This evidence would appear to raise serious questions about the veracity of the assertions that Mr Gonzales made to Congress." The memorandum describes three speeches in which the uranium claim had been included in drafts but was later removed after CIA officials complained that they lacked confidence in the supporting intelligence. Waxman's findings are based largely on interviews with former CIA Deputy-Director of Intelligence Jami Miscik and John Gibson, former director of speechwriting for foreign policy at the National Security Council.

18 December The US Department of Homeland Security releases a fact-sheet setting out its "end-of-year accomplishments", which includes "considerable success" in protecting the USA from potential attacks involving chemical, biological, radiological and nuclear weapons. Meanwhile, in his end-of-year address at Georgetown University, Washington DC, Homeland Security Secretary Michael Chertoff says: "Among the things this president did to protect this country was [...] creating the department, which I'm privileged to lead; and also removing threats and platforms in Iraq and Afghanistan, which could have been launching pads for further

attacks... And we know in Afghanistan we found laboratories where al-Qaeda was experimenting, trying to determine whether they could create biological or chemical weapons [see 20 May 05 and also 3 Feb]."

20 December The Qatari government-funded Al-Jazeera television runs an interview with former UNMOVIC Executive Chairman Hans Blix in which Blix recounts a conversation with US Vice-President Dick Cheney – which took place near the end of Blix's time at UNMOVIC. He says: "Cheney suddenly said we should realize that they would not hesitate to discredit us in favour of disarming Iraq. I understood that if we did not come up with the right answers, they would probably find the answers and take necessary measures accordingly." [See also 7 Jun 06]

22 December In the UK, Imperial College London in partnership with the London School of Economics (LSE) launches a new centre that will undertake research into synthetic biology. The Centre for Synthetic Biology and Innovation has been funded by a £8 million grant from the Engineering and Physical Sciences Research Council, and will form part of Imperial's Institute for Systems and Synthetic Biology. The LSE contribution, organized from the BIOS Centre [see 3 Dec 07], will "involve lectures and outreach activities about the potential benefits of synthetic biology and its public value". Also, "LSE will train researchers at the [new] Centre in the social, ethical, legal, and political issues surrounding this emerging field. These include examining the social and economic impacts of biotechnology, and developing practices of regulation and good governance."

22 December In the USA, National Public Radio reports that top scientists are "suspicious" of the Federal Bureau of Investigation (FBI) and are reluctant to discuss their work with it, according to a new survey by the FBI. The survey found that only 35 per cent of scientists would share research results with the FBI, while 87 per cent said they would discuss their work with the public. According to National Public Radio, the FBI conducted the survey as part of a larger effort to understand what it needs to do to gain the trust and co-operation of the scientific community. The surveys were sent out to nearly 11,000 members of the American Association for the Advancement of Science from late January to mid-February 2008. There was a response rate of about 12 per cent.

23 December In Moscow, during a session of the National Antiterrorist Committee, Federal Security Service Director Aleksandr Bortnikov says the Service has data indicating that terrorists are seeking to get access to weapons of mass destruction in order to commit acts of terrorism. "Monitoring of terrorist threats indicates that terrorists' ambition to get access to weapons of mass destruction and technologies for producing them as well as to the independent production of toxic chemical agents for their use in staging acts of terrorism remains one of the most dangerous factors." In this, he suggests that the Committee consider issues such as the safety of chemical facilities and productions and developing measures for their improvement in line with the guidelines approved by the Russian President on state policy in the field of maintenance of chemical and biological security in Russia up to 2010 and beyond.

23 December In the UK, the Wellcome Trust announces the award of three grants totalling more than £1 million to support research in biomedical ethics. The grants were awarded to Oxford University to research 'the ethics of

collaborative global health research: a network to build capacity in the UK and developing countries'; to Cambridge University to research 'redefining families: bioethics, assisted reproduction and emerging family forms'; and for collaborative effort between the universities of Bradford, Exeter and Bath to research 'building a sustainable capacity in dual-use bioethics'.

24 December In Damascus, Muhammad Nazzal, a member of the Political Bureau of Hamas, is interviewed live for Al-Jazeera television about the great quantity of Palestinian Authority intelligence documents that Hamas had acquired upon taking power from Fatah in the Gaza Strip in June 2007. Of the particular documents that are discussed, some are about Sudan and the Al-Shifa factory there that had been destroyed by US cruise missiles in 1998 [see 20 Aug 98]. In a document dated 20 July 1998 marked 'top secret', a code-named source responds to a query about Al-Shifa from the Gaza headquarters of the service concerned: "The factory has a microbiological research centre to develop chemical weapons. It is financed by Usamah Bin-Ladin and Sudanese millionaire Salah Idris. There are fears that these substances might reach fundamentalist organizations. We will later provide you with pictures of the factory and other information."

24 December In Alabama, nearly five months after starting the process [see 2 Aug], the Anniston chemdemil facility destroys its last VX-filled M23 land mine. The facility has now destroyed its entire stockpile of munitions containing GB and VX.

25 December In the USA, the Associated Press reports having obtained an internal Homeland Security Threat Assessment for the years 2008-2013, which, amongst other things, states that chemical, biological, radiological and nuclear attacks are considered the most dangerous threats. The 38-page assessment, marked "for official use only", says, however, that such threats are also the most unlikely, because it is difficult for al-Qaeda and other groups to acquire the materials needed to carry out such attacks.

29 December In Laos, special units of the Lao Peoples Army backed by Vietnamese advisers launch a military offensive in the Phou Lung, Pha Phai and Phou Bia mountain area directed against Hmong groups in hiding, so it is reported by refugees in Thailand and also by unidentified sources inside Laos. A statement by the Lao Human Rights Council, Inc, says that, prior to the attack, a Lao military helicopter had attacked Hmong people hiding in key locations, strafing and spraying them with chemicals that had caused sickening and disablement.

30 December In the USA, Outskirts Press of Denver, Colorado, publishes *State Secrets: An Insider's Chronicle of the Russian Chemical Weapons Program*, which is a memoir by Vil Mirzayanov [see 7 Nov 02] who had emigrated to the USA from Russia in 1995. As a physical chemist he had joined the principal Soviet chemical-weapons research institution, GosNIIOKhT, in 1965 but was dismissed in 1992 for publishing a whistleblowing article. After press interviews and another such article a year later that now revealed the existence of novel Soviet nerve agents referred to as 'Novichoks' under development in a programme codenamed *Foliant* [see 16 Sep 92 and 18 Oct 92], he was charged with unauthorized disclosure of state secrets [see 22 Oct 92]. During the next two and a half years he was either under house arrest or in prison until the charges were finally dropped during a closed trial, an outcome he attributes to "the constant intense pressure of the

media, scientists all over the world, statesmen and human right[s] activists". How all this happened he describes in his book, and, in the process, he discloses for the first time actual chemical structures of the novel agents. These include the phosphonylated or phosphorylated acetamidines hitherto known in public only as 'A-230' and 'A-232' (or, in binary form, as 'Novichok-5'), as well as other novelties. The book has 105 pages of annexes reproducing numerous documents, among them translations of evidence used by his prosecutors made available to the defence (and thence to supporters in the outside world), despite high security-classification.

Both in this book and subsequently, Dr Mirzayanov has continued to portray Novichoks as a deliberate attempt by the Russian "military chemical complex" to circumvent the 1993 Chemical Weapons Convention. As before, he cites in evidence the absence of A-232 precursors from the CWC schedules, continuing [see 25 May 94] to disregard the comprehensive scope of the CWC's prohibitions due to use of the general purpose criterion, not the control schedules, to define the banned weapons.

January In Hungary, declassified records of Hungary's State Defence Council meetings held between 1962 and 1978 show that little, if any, evidence existed in the scientific literature during the Cold War to support the view that the Soviet Union or its allies in the Warsaw Pact considered the military use of psychochemical weapons, according to a research note published in the journal *Substance Use and Misuse*. In his research note, Lajos Rozsa, of the Hungarian Academy of Sciences, Budapest, says that documents submitted to the Council include reports about the coordinative meetings of the Warsaw Pact military medical services. In 1963 Hungary rejected a task assigned to it in 1962 to research as a matter of priority possible counter-measures against psychotropic drugs is listed as a research priority; however, it joined the ongoing project again in 1965. According to Rozsa, methylamphetamine was produced in Budapest for use as an experimental model of such weapons, its having been widely considered an effective interrogation tool. Hungary was unsuccessful in developing any pharmaceutical counter-measures against it and so the project was terminated in 1972.

January In the UK, a study is published by the *Annals of Occupational Hygiene* of the health effects on veterans who participated in chemical warfare experiments at Porton Down between 1941 and 1989. The team of researchers – from the University of Oxford, the London School of Hygiene and Tropical Medicine, and Imperial College London – reviewed all entries in 97 books held in the Porton Down historical experimental archive covering the years 1939–1989. For tests between April 1941 and December 1989, data were abstracted on chemicals used, with additional detail abstracted for tests involving vesicants and nerve agents. For tests recorded during 1939–1941, similar data were abstracted for a representative sample of tests. The team found that the archive allowed them to categorize most veterans according to date of test, chemical group, chemical, type of protection and, for certain chemicals, level of exposure and/or degree of acute toxicity. Using these categorizations, the team then assigned veterans to exposure groups for epidemiological analysis. The research was funded by the Medical Research Council with funds also coming from the Ministry of Defence.

January The Canadian Defence Ministry releases *Suffield BioSense Trial 2006: SINBAHD Performance*. This technical memorandum sets out the findings from a two week trial conducted in September 2006 at Defence Research and

Development Canada (DRDC), Suffield, where “different open-air wet releases of live and killed bioagent simulants, growth media and obscuroants were performed” to test Stand-off Integrated Bioaerosol Active Hyperspectral Detection (SINBAHD), which is a “stand-off bioaerosol sensor prototype [developed by DRDC] based on intensified range-gated spectrometric detection of laser-induced fluorescence”. The memorandum describes the results of the trial thus: “An autoclave killing procedure was performed on two biological materials (*Bacillus subtilis* var *globigii* or BG, and *Bacillus thuringiensis* or Bt) before they were aerosolized, disseminated and spectrally characterized with SINBAHD... [T]his killing methodology has no significant impact on the spectral signature... A detection limit of a few tens of agent containing particles per litre of air (ACPLA) was obtained for a 15-m thick cloud of live BG located at a range of 400 m.... The outcomes of this trial will supply data for algorithm strategy development, the key component for achieving the targeted performance of BioSense.” [See also 8 Apr 04]

January The *American Journal of Therapeutics* publishes a summary of updated treatment options for chemical and biological weapons agents since 2003 including recent clinical cases and treatment recommendations. Biological agents covered are: *Bacillus anthracis*, *Brucella melitensis*, *Vibrio cholera*, smallpox virus, *Francisella tularensis*, viral hemorrhagic fever, and *staphylococcal enterotoxin B*. Chemical agents covered are: botulinum [toxin], ricin, cyanide, lewisite, nerve agents, phosgene and phosgene oxime. The authors of the report conclude thus: “The major therapeutic advances in biologic and chemical agent exposure center on vaccine development and hydroxocobalamin use for cyanide toxicity. It can be expected that preventative prophylactic treatment regimens will receive increasing scrutiny and investigation.”

6 January The US Department of State is still preparing the statutory Arms Control Compliance reports to Congress for 2004, 2005, 2006 and 2007, according to *Arms Control Today*, quoting an unidentified departmental “official”. The reporting is required to detail assessments of both the USA’s and other countries’ compliance with arms control, non-proliferation and disarmament agreements. The administration has not published such a report since 2005, which covered the years 2002 and 2003 [see 30 Aug 05].

7 January In San Francisco, six veterans who claim they were exposed to chemical agents and hallucinogenic drugs when they participated as volunteers in mind-control experiments during the Cold War file a class action against, amongst others, the Central Intelligence Agency and the Department of Defense. According to the Associated Press, the claimants are seeking payment for health care that they now require and a court ruling that the programme was illegal owing to the fact that they were never properly informed as to the nature of the experiments prior to giving their consent. The lawsuit states that at least 7,800 military personnel served “as laboratory rats or guinea pigs” to test experimental drugs such as LSD at the Edgewood Arsenal, while many others volunteered for similar experiments at other locations. The tests, codenamed MKULTRA, commenced in the 1940s and continued until around 1976. Bloomberg quotes Gordon Erspamer – a lawyer who represents a group of Vietnam veterans in a lawsuit against the Department of Veterans Affairs to reform mental health care to reduce the suicide rate among veterans – as saying there are about 3,000 survivors of the tests conducted at the Edgewood Arsenal and at US hospitals

and universities. According to Bloomberg, most of those affected are now in their 60s and 70s and have been denied benefits by the Army for health problems related to the experiments.

8 January In the USA, the National Research Council Committee on Science, Security and Prosperity in a Changing World releases *Beyond ‘Fortress America’: National Security Controls on Science and Technology in a Globalized World*. The report states that under the current system items are regularly added to the export control lists used to inform the licensing decisions of the departments of State and Commerce – including the Munitions List and the Commerce Control List – but are rarely taken off. This list-based system has become a “technological Maginot Line”. In this regard, a “sunset” rule should be put in place so that items on the export control lists are removed after a specified amount of time unless a justification is presented for maintaining their restriction. The report adds that visa controls and “deemed export controls”, the transfer of dual-use technology or source code to foreign nationals within the US, have made US laboratories and universities less attractive to foreign researchers and have helped drive knowledge-intensive jobs overseas. It says that significant changes are required to create a system that is protective of both national security and economic prosperity. The report recommends the creation of a Coordinating Center for Export Controls to coordinate interactions with businesses or universities seeking export licenses and manage agency processes with respect to granting or denying export licenses. It also recommends the creation of an Export License Appeals Panel, comprised of active or retired federal judges, would hear disputes on licensing decisions and “sunset” requirements.

9 January US President George Bush signs an executive order establishing a ‘high-level’ working group to study strategies for increasing security at laboratories that conduct research on dangerous diseases. The order, EO 13486, is published in the *Federal Register* on 14 January. It states: “It is the policy of the United States that facilities that possess biological select agents and toxins have appropriate security and personnel assurance practices to protect against theft, misuse, or diversion to unlawful activity of such agents and toxins... [Therefore] there is hereby established, within the Department of Defense for administrative purposes only, the Working Group on Strengthening the Biosecurity of the United States.” The working group will include the secretaries of state, agriculture, commerce, transportation, energy and homeland security, together with the attorney-general, national intelligence director, the heads of the National Science Foundation and the Environmental Protection Agency. It is expected to study existing biosecurity laws and regulations, along with current physical, facility and personnel security measures in place at disease research sites. Within 180 days of the executive order, it must issue a report containing recommendations on possible new rules and security measures, options for comprehensive oversight systems at laboratories, and “a comparison of the range of existing personnel security and assurance programs for access to biological select agents and toxins to personnel security and assurance programs in other fields and industries”.

10 January In Philadelphia, during a presentation at the annual meeting of the Archaeological Institute of America, an archaeologist at the University of Leicester, UK, says he has uncovered “the earliest archaeological evidence for the use of chemical warfare, which was later used by the ancient Greeks”. Simon James, who has previously conducted

fieldwork at Dura-Europos in Syria for thirty years, examined a group of about twenty skeletons lying in a tunnel that the Roman garrison at Dura had dug in around 256 AD to intercept Persian Sasanian invaders, who were also digging underneath the garrison wall via another tunnel. James says he found that in a tunnel beneath the site's front wall, the Sasanians had stacked up nearly two dozen dead or dying Romans and set them on fire, the toxic fumes of which drove away the Romans just outside the tunnel. Remains of pitch and sulphur crystals were found near the bodies, which he says had not been observed in earlier examinations of the site. James adds that there were signs of severe burning both on the skeletons and on military equipment also found at the site. He says that underground bellows or chimneys probably helped generate and distribute the fumes. "The Roman assault party was unconscious in seconds, dead in minutes." The structures and skeletons were first excavated during a series of excavations by French and US archaeologists in the 1920s and 1930s. Adrienne Mayor, a visiting scholar at Stanford University's Department of Classics and author of *Greek Fire, Poison, Arrows and Scorpion Bombs (2003)*, says most of the reconstruction of the underground battle mentioned by James "were already revealed by major excavations in 1920 to 1937 by teams from France and Yale University, and after 1986 by French-Syrian teams". "But", she says, "James adds vivid new details, based on his careful analysis of the evidence. His real breakthrough is the remarkable fact that the Persians deliberately created a chemical weapon".

Four weeks later, however Reza Yeganehshakib of the University of California, Irvine, says the Roman soldiers found could have died as a result of a lack of oxygen owing to the mouth of the tunnel becoming blocked behind them, possibly as a result of the collapse of earth.

12-13 January In Washington DC, there is a conference on *Shaping the Obama Administration's Counterterrorism Strategy* at the Cato Institute. The conference comprises a total of eight panel discussions, one of which is on assessing the capability of terrorists to use weapons of mass destruction, how to judge the odds of such an attack, and consequent policy implications. This last panel is chaired by Cato Institute Research Fellow Benjamin Friedman, the panellists being John Mueller, professor of political science at Ohio State University, Randall Larsen, national security advisor at the Center for Biosecurity, University of Pittsburgh Medical Center, Milton Leitenberg, senior research scholar, Center for International Security Studies, University of Maryland, and Jim Walsh, principal research scientist in the MIT Security Studies Program.

13 January Iraq deposits its instrument of accession to the CWC with the UN Secretary-General. In thirty days, Iraq will become the 186th [see 20 Nov 08] party to the Convention.

13 January The Libyan government has denied a claim by Abd-al-Majid Mansur, the chairman of the Al-Tabu Front for the Salvation of Libya, that Libya maintained a nuclear and chemical weapons plant after its announcement to give up weapons of mass destruction [see 19 Dec 03] so reports the London-based Arabic language newspaper *Al-Sharq al-Awsat*. Speaking to *Al-Sharq al-Awsat* from exile in Oslo, Abd-al-Majid Mansur says he had received information from Libya that there was a nuclear and chemical weapons plant in the Jabal Haruj, near Al-Sabah, which was run by experts from North Korea and others of unknown nationality. Unidentified Libyan officials are quoted by *Al-Sharq al-Awsat* as saying: "[It] is part of the media campaign by certain circles in the opposition which

have suspicious connections abroad.... [These are] a handful of hirelings and agents of foreign parties [who should stop their] attempts to defame [Libya]." According to *Al-Sharq al-Awsat*, the US State Department has said it is satisfied that Libya is abiding with its commitment to destroy weapons of mass destruction. An unidentified State Department source is said to have described Libya's relationship with the USA as "excellent".

13 January In Washington DC, there is an exercise at the White House that simulates terrorists using improvised explosives to attack transportation infrastructure and other economic targets in a number of US cities. The exercise is followed by a discussion of government responses to other scenarios, including attacks involving nuclear, chemical or biological weapons, an outbreak of pandemic flu, hurricanes or other natural disasters. The exercise – involving aides to both President George Bush and President-elect Barack Obama – is aimed at ensuring a smooth handover of power to Obama on 20 January, in the first transition to take place since the terrorist attacks on 11 September 2001. According to the Associated Press, Obama will arrive for his inauguration in a new armoured presidential limousine that includes an airtight interior to protect against a chemical attack. In addition, chemical, biological and radiological sensors have already been installed in strategic locations around Washington DC. In total, between two and four million spectators are expected to gather for the ceremony around the National Mall.

The next day, Head of the Armed Forces Inaugural Committee Major General Richard Rowe says: "I think we all have to be concerned about a chemical, biological, radiological potential attack."

15 January In South Korea, the Institute of Foreign Affairs and National Security, which is affiliated with the Foreign Ministry, issues a report urging the government to join the US-led Proliferation Security Initiative [see also 27 Feb 08]. Yonhap news agency quotes the report, written by Institute professor Lee Seo-hang, as saying: "[South Korea] has taken a passive or lukewarm attitude on the PSI so far, although it is confronted with proliferation threats by North Korea... South Korea needs a positive review on its role in the PSI."

15 January Harvard Sussex Program co-director Matthew Meselson publishes in the journal *Nature* a commentary on how the new US administration should move forward with regard to oversight and monitoring of biosecurity activities. The commentary summarizes the processes by which government agencies undertake oversight of biodefense, with particular attention given to the Compliance Review Group of the Department of Homeland Security. As regards the future, Meselson says: "Oversight of biodefence activities is likely to come under examination by the new Congress, which could devise guidelines and procedures applicable throughout government. Topics to be considered should include the authority and composition of compliance review boards, criteria for approval of projects, harmonization of procedures, procedures for ensuring the reliability of personnel engaged in biodefence work, provision for site visits, a requirement for periodic reports, and the inclusion of State and Justice Department observers to promote both independence from parochial influences and familiarity with treaty commitments and applicable US law... The resulting procedure could then serve as a model for consideration by the state parties of the Biological Weapons Convention at its seventh review conference in Geneva, Switzerland, in 2011. The aim would be to agree on a requirement for detailed periodic submissions

from each nation describing the oversight procedures it employs to ensure compliance with the convention. The objective would be to increase awareness of the need for improved oversight and to facilitate the development of international measures for enhanced exchange and transparency regarding implementation of the convention.”

15 January In the USA, the Center for Arms Control and Non-Proliferation publishes *Reducing Biological Risks to Security: International Policy Recommendations for the Obama Administration*. The report, which was coordinated by the Center with support from the Carnegie Corporation of New York, sets out recommendations arising from discussions on the subject among the following individuals: Raphael Della Ratta, Partnership for Global Security; Gerald L Epstein, Center for Strategic and International Studies; David Fidler, Indiana University School of Law; Elisa D Harris, Center for International and Security Studies; Jo Husbands, The National Academies; Barry Kellman, Depaul University School of Law; Daryl G Kimball, Arms Control Association; Ken Luongo, Partnership for Global Security; Michael Moodie, independent consultant; Randy Murch, Virginia Polytechnic Institute and State University; Alan Pearson, Center for Arms Control and Non-Proliferation; Jonathan B Tucker, James Martin Center for Nonproliferation Studies, Monterey Institute of International Studies. The report recommends that the Obama administration should:

- i. “Pursue multilateral efforts to establish internationally harmonized standards for pathogen and laboratory safety and security and to provide technical and financial assistance to developing countries to facilitate their adoption, sustainable implementation, and enforcement of national measures for the safety and security of biological agents.
- ii. Pursue bilateral, regional and multilateral efforts to strengthen national criminal legislation and law enforcement capabilities for detecting, interdicting, investigating and prosecuting biological crimes, and promote international legal and technical cooperation towards these ends.
- iii. Support efforts to strengthen the UN Secretary-General’s mechanism for investigating allegations of biological weapons use and to establish a capability to investigate alleged breaches of BWC obligations if the Security Council determines that investigation is warranted.
- iv. Pursue stronger confidence-building and other transparency measures designed to provide mutual reassurance that national biodefense and other dual-use activities comply with the BWC.
- v. Strengthen cooperative efforts to improve national, regional, and multinational surveillance and response capabilities with respect to outbreaks of infectious diseases, whether naturally occurring or man-made.
- vi. Support the development of international mechanisms that enhance the coordination and implementation of biological threat reduction policies.”

16 January In Brussels, the Political and Security Committee of the Council of the European Union endorses a note on the implementation of the WMD non-proliferation clause in third-country agreements. The note states that since its adoption [see 17 Nov 03], the clause has been included in agreements with non-EU countries, with additional text occasionally being added to treaties in the field of conventional weapons, and small arms and light weapons. Inclusion of the clause differs depending on the type of agreement (mixed or EU) and entry into force (agreement already ratified, being negotiated or planned for in the future). The strategy targets

implementation of international agreements such as the BWC and CWC as well as Security Council resolutions relevant to preventing the proliferation of WMD [see 28 Apr 04]. The note states that as far as EU-EC mixed agreements are concerned, the principle is to include the clause for all “future mixed agreements” or as part of the “renewal or revision” of an existing agreement. The note further states: “Since the adoption of the WMD strategy, including the WMD clause, the EU has been offering assistance to several countries and regional organizations to respect their existing obligations in the field of disarmament and non proliferation and to become full members of relevant international instruments to which they were not parties yet. The inclusion of the WMD clause in the agreement regulating the relations between the EU and its partners has generally been taken into account in the selection of countries benefiting from relevant CFSP [Common Foreign and Security Policy] assistance... In particular the EU has organized several thematic seminars, outreach activities and technical assistance visits targeting numerous third countries and supporting the universality and full implementation of several international instruments.”

16 January The US Centers for Disease Control and Prevention (CDC) releases *Public Health Preparedness: Strengthening CDC’s Emergency Response (A CDC Report on Terrorism Preparedness and Emergency Response – Funded Activities)*. The report – the first to be compiled by the Coordinating Office of Terrorism Preparedness and Emergency Response – analyses activities funded for FY 2007, which amount to approximately \$1.5 billion in appropriations. The activities analysed relate to health monitoring and surveillance; epidemiology and other assessment sciences; public health laboratory science and service; response and recovery operations; and public health system support. Amongst other things, the report says that during FY 2007 progress was made in establishing national drug and vaccine stockpiles, multiplying the number of laboratories capable of testing for potential bioterrorism materials, improving disease surveillance capabilities and creating information-sharing systems. This progress, however, it says, is threatened by prospects of reduced funding. On this subject, it states: “CDC and state and local health departments must find new ways, including enhanced collaborations, to conduct program activities. CDC may also have to make difficult decisions about what the highest priority preparedness activities are and what must be postponed. Public health departments at state and local levels may have to make similar choices.” The report is intended to build on a previous report released by the CDC on *Public Health Preparedness: Mobilizing State by State* [see 20 Feb 08].

19 January In Israel, the High Court of Justice hears arguments relating to an earlier temporary injunction granted by it in favour of the Defence Ministry to prevent the release of a new report by a committee of medical practitioners criticizing the Israel Institute for Biological Research for an anthrax vaccine experiment that allegedly resulted in the test subjects suffering adverse health effects. According to *Haaretz*, the committee, established by the Israeli doctors’ union, refused to permit the director of security for the defence establishment, Amir Kain, to check the report for inclusion of state secrets shortly before its due date of publication last month, on the grounds that it had already been reviewed. *Haaretz* says the report criticizes the Institute, its director, Avigdor Shafferman, and the Israel Defense Force (IDF) Medical Corps, for their involvement in the experiment called ‘Omer Two’, which began in 1998 and lasted eight years. In the experiment, 716 IDF soldiers were given seven doses of

an anti-anthrax vaccine developed by the Institute. However, procedures mandated by the army's Helsinki committee on human experimentation were allegedly not properly followed and there was no extended medical supervision of the vaccinated soldiers. Eighteen months ago, the IDF and Defense Ministry ignored a request by a group of soldiers vaccinated in the experiment who asked for details of the experiment on the grounds that they had been suffering from debilitating side effects. *Haaretz* quotes Kain as saying that he has no intention of blocking the publication, only of making sure that state secrets were not revealed in the report.

19 January In Algeria, as many as forty members of al-Qaeda have died from bubonic plague, which spread through one of its training camps in Tizi Ouzou province, so reports the London tabloid *The Sun*, which next day adds: "The al-Qaeda cell wiped out by Black Death may have infected ITSELF while developing biological weapons, it emerged last night". The incident reportedly came to light when security forces found the corpse of a member of AQLIM (al-Qaeda in the Islamic Maghreb) on the side of a road. According to *The Sun*, the group, led by Abdelmalek Droukhal, was forced to turn its shelters in the Yakouren forest into mass graves before leaving to seek refuge in Bejaia and Jijel provinces. One unidentified security source is quoted by *The Sun* as saying: "This is the deadliest weapon yet in the war against terror. Most of the terrorists do not have the basic medical supplies needed to treat the disease... It spreads quickly and kills within hours. This will be really worrying al-Qaeda." Meanwhile, Human Events Online states: "Reportedly, AQIM chiefs fear the highly contagious plague has spread to other terror cells because some of the nearly 1,000 Algerian insurgents abandoned the contaminated camp for others in Morocco." The *Washington Times* quotes a "senior US intelligence official" speaking on condition of anonymity as saying that whilst it is not possible to confirm whether as many as forty members of AQLIM have been killed, the cause of death was not bubonic plague. He says that a message, intercepted in early January, between AQLIM senior al-Qaeda officials in Pakistan indicated that a system to prevent the release of a chemical or biological agent had failed. "We don't know if this is biological or chemical," he says.

The next day, AQLIM denies the media reports in a communiqué which is obtained by *Tout sur l'Algerie*. According to AQLIM, the aim behind the "lies" was to "discourage youths" from joining groups affiliated to al-Qaeda. It also accuses the Algerian intelligence services of being behind the publishing of the reports.

Two weeks later, Algerian Health Ministry spokesman Slim Belkessam rebuts the report thus: "No case of plague of any type has been recorded in any region of Algeria since 2003 in Oran." Also, Agence France-Presse reports the World Health Organization as having verified that the 2003 incident was the most recent Algerian case to be reported.

[Note: Here is a rare instance of a bioterrorism allegation receiving authoritative, convincing, public and swift refutation. Subsequent commentators have speculated that the episode was an instance of counterterrorist psychological warfare or black propaganda, one that exploited rumours of a local disease outbreak reported on an Algerian news website, *Echorouk Online*, on 6 January. In that report there was no mention of biological weapons, which was an addition that *The Sun* made on 20 January (along with the assertion that "Last year it was revealed 100 suspected terrorists tried to become students in Britain, giving them access to labs" {see 2 Nov 08}). Maybe in fact the allegation was no more than scaremongering by an irresponsible tabloid newspaper.]

20 January The Chinese State Council issues a white paper on *China's National Defence in 2008*, which includes a chapter on arms control and disarmament. In relation to biological weapons, the paper states: "China observes in good faith its obligations under the [BWC], and supports the multilateral efforts aimed at strengthening the effectiveness of the Convention. China has actively participated in the meetings of the parties to the Convention and the meetings of experts in a pragmatic manner. China has already established a comprehensive legislation system for the implementation of the Convention, set up a national implementation focal point, and submitted its declarations regarding confidence-building measures to the Implementation Support Unit of the Convention in a timely fashion. China has also strengthened bio-safety, bio-security and disease surveillance, and actively carried out related international exchanges and cooperation." Regarding chemical weapons, it says: "China earnestly fulfils its obligations under the [CWC] by setting up implementation offices at both central and local levels, submitting timely and complete annual declarations, subsequent declarations regarding newly discovered chemical weapons abandoned by Japan in China and information on the national protection programme. China has received more than 170 on-site inspections by the [OPCW]". More generally, the paper says that China firmly opposes the proliferation of weapons of mass destruction and their means of delivery, and actively takes part in international non-proliferation efforts. The purpose of the paper is to provide an overall picture of China's national defence ranging from the security environment, national defence policy, to defence expenditure and arms control. [See also 1 Sep 05].

20 January Singapore Deputy Prime Minister and Home Affairs Minister Wong Kan Seng opens a new inspection facility at the Tuas border-crossing which is capable of detecting hazardous materials such as chemical or biological agents. According to the Singapore Immigration and Customs Authority, the Tuas Protective Analytical Facility – which cost \$4 million to build and includes a laboratory and decontamination unit – is the first border facility of its kind in the world.

20 January In the UK House of Commons, responding to a written parliamentary question addressed to the Defence Secretary, Parliamentary Under-Secretary of State and Minister of State for Defence Equipment and Support Quentin Davies says that the UK's armed forces possess white phosphorus, though he does not specify how much. He says: "These are conventional munitions that are not outlawed or banned by any convention or protocol... [The] UK training in the use of white phosphorus emphasizes that it should be used solely for its intended purpose and not as an anti-personnel weapon... I am withholding information on the size of the stockpile of these munitions on the grounds that its disclosure would be likely to prejudice the capability, effectiveness or security of the armed forces." [See also 13 Jan]

20 January In the USA, Barack Obama is sworn in as 44th President. On the White House website, the Agenda page for homeland security lists several biosecurity measures, a topic that Obama had addressed during the election campaign [see 30 Aug 08]. The measures include preventing bioterrorist attacks through improved intelligence and pre-emptive interdiction; capacity-building to mitigate consequences of bioterrorist attack; accelerated development of new medicines, vaccines and production capabilities; and leading an international effort to diminish impact of major epidemics of infectious disease.

21 January India supplied 60 tons of thionyl chloride to Iran in 1989, "a chemical being used in the preparation of mustard gas", so reports the *Pakistan Observer*.

22 January In Japan, the National Police Agency announces that 1,139 persons have applied to it for government payments made available to victims of the activities of the Aum Shinrikyo cult [see 17 Jul 00, 28 Jun 04 and 20 Mar 95], of which 233 have thus far received payment. Kyodo news agency quotes the agency as saying that a total of around 6,600 people are eligible to receive payments under a law which entered into force four weeks previously. Payments are classified into six categories based on the extent of the injuries suffered, with the amounts ranging from ¥100,000 to ¥30 million. According to Kyodo, the law was enacted owing to the declaration of bankruptcy filed by the cult in 1996.

22 January In the US House of Representatives, the Armed Services Committee holds a hearing on the recently released findings of the Commission on the Prevention of Weapons of Mass Destruction Proliferation and Terrorism [see 2 Dec 08]. Among those testifying before the Committee are Chairman and Vice-Chairman of the Commission Bob Graham and Jim Talent. [See also 11 Dec 08]

26 January The Iraqi High Tribunal charges Ali Hassan al-Majid and former Deputy Prime Minister Tariq Aziz, together with fourteen other former officials, with crimes relating to the campaign against Iraq's Faily Kurdish community during the Iran-Iraq War, which according to Agence France-Presse includes using them as guinea pigs for testing chemical weapons and as human shields. Al-Majid, also known as 'Chemical Ali', has previously been sentenced to death for his roles against Iraq's Kurdish population in Operation Anfal and in the crackdown against the Iraqi Shiite population in 1991 following the first Gulf War [see 2 Dec 08].

26 January In Iran the Cabinet of Ministers is reported on state-run radio to have approved a bill establishing jurisdiction over "international crimes" including "use of poisonous and prohibited weapons and weapons of mass destruction".

26 January In Brussels, NATO Secretary-General Jaap de Hoop Scheffer says states need to take greater steps to counter terrorism, proliferation of unconventional weapons and other global threats. Making his comments during a prepared speech, he says: "International terrorism, the proliferation of weapons of mass destruction and the growing numbers of failing states are not just the obsession of a few." Particular attention, he says, should be given to South Asia, where extremists could produce "a disaster for international security" in the event that they gain influence in Afghanistan or Pakistan.

27 January In the UK, the Information Tribunal orders the government to release minutes of the Cabinet meetings on 13 and 17 March 2003 regarding the legality under international law of the planned US-led invasion of Iraq [see 20 Mar 03]. In upholding an earlier decision by Information Commissioner Richard Thomas [see 26 Feb 08] – in relation to a request by Dr Christopher Lamb under the Freedom of Information Act – the Tribunal states: "The decision to commit the nation's armed forces to the invasion of another country is momentous in its own right, and ... its seriousness is increased by the criticisms that have been made (particularly in the Butler Report [see 14 Jul 04]) of the general decision-making

processes in the cabinet at the time... There has also been criticism of the attorney general's legal advice and of the particular way in which the March 17 opinion was made available to the cabinet only at the last moment and the March 7 opinion was not disclosed to it at all."

Four weeks later, in the House of Commons, Justice Secretary Jack Straw announces that the government has vetoed the request for publication of the minutes under Section 53 of the Freedom of Information Act. Releasing the papers, he says, "risked serious damage to cabinet government". Straw adds: "There is a balance to be struck between openness and maintaining aspects of our structure of democratic government... The damage that disclosure of the minutes in this instance would do far outweighs any corresponding public interest in their disclosure." The government opted to use the veto under the Act in preference of appealing the ruling to the High Court. [See also 4 Sep 08]

28 January Russian Deputy Director of the Finance Ministry Andrei Bokarev says that a shortfall in the \$20 billion allocated for Russian chemdemil under the G8 Global Partnership [see 26-27 Jun 02] could force Russia to slow its rate of destruction of chemical weapons. He says: "Taking into account the current situation and the global crisis, there are doubts that these funds can be provided to the required extent. This brings a question: either we will be forced to slow down the previously announced rates of chemical weapons destruction, or we will have to start looking for some additional sources within Russia in order to offset the shortage of funds provided by our [G8] partners." Bokarev adds: "The problem is that Russia carries out its commitments in full, while foreign countries have mostly complied with their commitments by 40-45 per cent." [See also 31 Oct 07]

28 January In Russia, the Leonidovka chemdmil facility has now completed the destruction of V agent from 1,000 aerial bombs, so reports ITAR-TAS news agency. The process of eliminating nearly 23,000 V-filled munitions commenced four months previously. However, in a statement to the fifty-fifth session of the Executive Council three weeks later, OPCW Director-General Rogelio Pfiirter says that operations at the facility commenced on 2 September 2008, with the insertion of reagent in air bombs filled with V agent. The statement continues: "The draining of the resulting reaction mass is currently ongoing. For the time being, no chemical weapons are being reported as destroyed at this facility, as the thermal treatment and mutilation units are not processing." [See also 17 Jun 08]

28 January In Kampala, Uganda, there is a workshop on *Establishing and Promoting Standards and Good Laboratory Practices for Running Safe, Secure and Sustainable Laboratories in Africa*. Attending the three-day workshop, which is organized by the Ugandan National Academy of Science, are more than a hundred participants from twenty African and European countries. Among those speaking is Emmanuelle Tuerlings of the Department of Epidemics and Pandemic Alert, World Health Organisation, who says: "There is need for responsible use of science research management otherwise biological agents and toxins could be used as terrorist weapons."

28 January New York University School of Law hosts a public forum on the *World at Risk* report [see 2 Dec 08] funded by the Sloan Foundation. There are panels on different aspects of the report in which participants include members of the commission that produced it, the Commission on the

Prevention of WMD Proliferation and Terrorism. Among those chairing panels are Judith Miller and Richard Falkenrath, and other speakers include Frank Gaffney.

31 January From OPCW headquarters, it is reported that a total of 29,741 metric tonnes, or 42.76 per cent, of Category 1 chemical agents, have now been verifiably destroyed globally. The USA has now completed the chemdemil of 16,126 metric tonnes, or 58 per cent, of its Category 1 stockpile [see also 30 Jun 08]; Russia, 11,960 metric tonnes, or 29.84 per cent [see also 9 Dec 08]; and India, 98.72 per cent [see also 20 Jan 08]. The amount of Category 2 chemical weapons destroyed remains unchanged at 915 metric tonnes, or 51.8 per cent of the total declared.

31 January The *Washington Post* reports the publication of *Hide and Seek: The Search for Truth in Iraq*, by former UNSCOM inspector and head of the Iraq Survey Group Charles Duelfer [see also 25 Apr 05 and 24 May 05]. Publication of the book had been held up for more than nine months by CIA reviewers, according to the *Washington Post*. Amongst other things, the book describes an attempt by Iraqi insurgents after the US-led invasion of Iraq [see 20 Mar 03] to develop chemical agents, as well as ricin, before the operation was closed down by coalition forces.

Three weeks later, US News publishes an interview with Duelfer on the subject of the book. Asked whether with the passage of time there is now a better understanding former Iraqi leader Saddam Hussein's strategy with regard to WMD, Duelfer says: "It was difficult to understand that Saddam would do things for irrational reasons; he would do things that were at cross-purposes. He would say he had no WMDs to some and say that he did to others. When I sat in on the debriefing, he told us that he had multiple audiences and was worried about the Iranians and others. It's clearer [now], but it's clearly complicated."

1 February In Poland, a study by researchers from Gdansk University of Technology on chemical munitions and chemical warfare agents dumped in the Baltic Sea at the end of the Second World War is published in the journal *Chemistry and Ecology*. Based on a review of existing literature on the subject, Aleksandra Szarejko and Jacek Namiesnik identify the types and quantities of dumped chemical munitions and warfare agents, the areas where they are known to have been dumped, their characteristics, and their potential hazards to the environment, including human and animal life. [See also 23 Sep 08]

2 February In Sri Lanka, security forces have overrun an LTTE camp in Primanthakulam and seized what Sinhala News Agency describes as "a large haul of arms including ... nine chemical weapons". No further details of these weapons are given; it is not known whether they are or are not CS gas canisters such as LTTE forces have reportedly been using [see 15 Sep 08].

3 February In the UK House of Commons, Secretary of State for Environment, Food and Rural Affairs (DEFRA) Hilary Benn presents the government's response to the review undertaken by Sir Iain Anderson relating to the outbreak of foot and mouth disease in 2007 from the state-funded Pirbright Institute for Animal Health laboratory. In its response, the government says it accepts all 26 of the main recommendations made by Anderson. [See also 13 Dec 07 and 25 Jun 08]

Nine days later, the journal *Nature* reports that a project agreed upon in 2005 between DEFRA, the Biotechnology and

Biological Sciences Research Council (BBSRC) and the Department of Trade and Industry to undertake a £121 million redevelopment of the Pirbright Institute will now likely be scaled back as DEFRA has seemingly withdrawn from the project. BBSRC spokesman Matt Goode is quoted as saying that BBSRC is now reassessing the size and scale of the plans, completion of which *Nature* states has now been put back from 2011 to 2013. "The vision of the joint venture with DEFRA was to bring together our complementary activities; the BBSRC is now taking this project forward alone," adds Goode.

4 February In the UK House of Commons, the Foreign Affairs Committee conducts a hearing on *Global Security: Non-Proliferation*. Testifying before the committee are Foreign Office Minister of State Bill Rammell; and two Foreign Office officials, the head of the Counter Proliferation Department, Paul Arkwright, and the Director-General, Defence and Intelligence, Mariot Leslie.

5 February The Armenian Ministry of Emergency Situations and the US Department of Defense are preparing to sign an agreement within the framework of the Biological Threat Reduction Program (BTRP), so reports Public Radio of Armenia. Under the agreement – which will fall under the auspices of a WMD counter-proliferation agreement signed by the two countries in 2000 – Armenia will receive assistance in improving its overall biosafety and biosecurity systems and procedures, in consolidating and securing dangerous pathogen collections and research, and in enhancing its capacity to detect, diagnose, report and respond to outbreaks. In addition to Russia, the USA has previously entered into agreements under the BTRP with Azerbaijan [see 2 Jan 04], Georgia [see 20 Jun 06], Kazakhstan [see 13 Dec 07], Ukraine [see 20 Mar 06] and Uzbekistan [see 12 Aug 04].

5 February In the UK House of Commons, responding to a written question as to what increased resources the Foreign Office has dedicated to tackling threat of CBRN terrorism, Foreign Secretary David Miliband says: "We are increasing programme spend from £2 million for the financial year 2009-10 to £3 million for the financial year 2010-2011. Eight officers within the Foreign and Commonwealth Office's Directorate for Defence and Strategic Threats cover aspects of work related to [CBRN] terrorism; this represents an increase in the number of staff dealing with the issue. In addition there are officers at posts overseas working on CBRN as part of their portfolios."

5 February The US National Research Council publishes *A Survey of Attitudes and Actions on Dual Use Research in the Life Sciences: A Collaborative Effort of the National Research Council and the American Association for the Advancement of Science*. The report discusses a survey of a selection of members of the American Association for the Advancement of Science (AAAS) undertaken in 2007 by the Council Committee on Assessing Fundamental Attitudes of Life Scientists as a Basis for Biosecurity Education and the AAAS on possible steps the life-science community could take to protect against risks arising from dual-use research. The report points out that a low response rate and uncertainties about whether the sample reflected the broader life sciences community limits the ability to reach conclusions about the life-sciences community in general. Nevertheless, it recommends further investigation of the subject. The report was sponsored by the Carnegie Corporation of New York, the Alfred P Sloan Foundation, and the National Academies' Presidents' Circle Communications Initiative.

5-6 February In Washington DC, the Public and Scientific Affairs Board of the American Society for Microbiology convenes for its annual meeting. During the meeting, four government officials discuss with the Board budgetary and programmatic activities for their respective departments. Among them is Gerald Parker, the Principal Deputy Assistant Secretary for Preparedness and Response at the Department of Health and Human Services, who discusses biosafety, biosecurity, and personnel practices related to high-containment laboratories. In addition, Richard Danzig, a consultant to the Department of Defense and Department of Homeland Security on bioterrorism and former Secretary of the Navy, provides information on priorities for countering bioterrorism.

6 February In Islamabad, Pakistan, following a closed hearing, the High Court orders the release from house arrest of Abdul Qadeer Khan. Khan was sentenced to five years house arrest after confessing to having been the mastermind behind an international nuclear smuggling network. Speaking outside his house, Khan says: "This has happened because of the keen interest taken by the president and prime minister, and especially the adviser to the prime minister on the interior, Rehman Malik, who looked into the case and reviewed it... As far as I have been told, I will go anywhere in Pakistan without any restrictions and I will get whatever security that I had with me previously... If I want to travel abroad, I will have to seek permission from the government." Prosecutor Amjad Iqbal Qureshi says that some "security measures" for Khan would remain in effect. Meanwhile, US State Department spokesman Gordon Duguid says that although the USA is still awaiting official confirmation of the matter, any decision to release Khan was "extremely regrettable" and Pakistan was "well aware" of the US position. He adds: "This man remains a serious proliferation risk... The proliferation support that Khan and his associates provided to Iran and North Korea has had a harmful impact on international security and will for years to come." [See also 29 May 08]

6 February At Fort Detrick, Maryland, the US Army Medical Research Institute of Infectious Diseases (USAMRIID) suspends research activities involving biological select agents and toxins after officials find twenty vials of an animal pathogen sample in a box expected to contain sixteen vials. *The Washington Post* quotes USAMRIID spokeswoman Caree Vander Linden as saying that it could take as long as three months for officials to carry out a full inventory of thousands of samples. According to the Associated Press, two days previously, head of the facility John Skvorak wrote in a memorandum to employees: "I believe that the probability that there are additional vials of BSAT [biological select agents and toxins] not captured in our ... database is high." ScienceInsider quotes a former USAMRIID scientist as saying that in the past, carrying out inventories of biological materials at the facility routinely turned up items that had not previously been listed on the database. Those items would then be added to the database without suspending research. Last year, the Army launched a review of the facility's record keeping system [see 8 Aug 08] after the Justice Department identified Bruce Ivins, a former employee at Fort Detrick, as being responsible for the anthrax letter attacks in 2001 [see 6 Aug 08].

Six weeks later, Vander Linden says that the Criminal Investigation Command of USAMRIID is nearing the end of a separate investigation, launched last year, into the disappearance of three vials of Venezuelan equine encephalitis virus. She says that during the investigation, one of the researchers who had worked with the collection recalled that

several years earlier a freezer filled with biological samples broke down resulting in the entirety of its contents having to be destroyed. However, a complete inventory of what was in the freezer was undertaken prior to the destruction of the samples. According to Vander Linden, although there is a "strong possibility" that the vials were in the freezer and were destroyed, this is not yet certain. US Army Criminal Investigation Command spokesman Chris Grey says that the Command "has found no evidence to date of any criminality related to the unaccounted-for items", and that USAMRIID is "in the final stages of its mandatory review process before being closed".

8 February Nazi Germany likely developed thalidomide as part of its chemical weapons programme, so reports *The (London) Times*, referring to separate discoveries by two academics of documents indicating that the drug had already been developed prior to the German company Chemie Grünenthal securing a patent on it in 1954. Martin Johnson, director of the Thalidomide Trust, says the drug was actually first developed after the war by Otto Ambros, a German scientist who later joined Grünenthal, as a possible antidote to nerve toxins agents such as sarin. Johnson says that one document indicates Grünenthal as having purchased the trade name of the drug 'Contergan' and therefore probably the substance itself, from a French firm, Rhône-Poulenc, which had been under German control during the war. From 1942 Rhône-Poulenc registered 14 similar drugs, all ending with the same 'ergan' suffix. Many of the drugs shared properties with thalidomide, such as affecting the nervous system. Johnson says: "Not only is the name typical of the Rhône-Poulenc brand names of the 1940s; the action of thalidomide also belongs among this range of products." Meanwhile, Carlos De Napoli – the author of a number of books on the activities of members of the Nazi party who fled to South America at the end of the war – says that his new book, *Hitler's Laboratories*, will show that the development of thalidomide originated in the Nazi concentration camps. The *Times* quotes De Napoli as saying that he has obtained a copy of a memorandum dated 13 November 1944 sent by Fritz ter Meer – an executive for German pharmaceutical firm IG Farben – to Karl Brandt – an SS general who was Hitler's personal physician and head of his euthanasia programme – which refers to the development of a substance, the chemical formula of which matches thalidomide. The memorandum refers to the drug by way of a four-digit number, '4589', which, it says, has been tested and is ready for use. De Napoli says he discovered the document in the IG Farben archive in 1978, but only recently realized the significance of the formula it contained. "There is absolutely no doubt of the Nazi development of and experimentation with thalidomide in the world war two camps," he says.

8 February In the USA, an audit of the Chemical Materials Agency (CMA) by the Army's Audit Agency has determined that certain figures for the storage of nerve agents do not reflect destruction figures, so reports *Deseret News*, which has obtained a redacted version of the auditor's report of 26 August 2008 under a Freedom of Information Act request. The purpose of the audit was "to determine whether the agency accounted for destroyed chemical agents" at seven US chemdemil storage sites. It says: "[The sites] did not have effective procedures in place to ensure amounts destroyed were accurately recorded in the (electronic recording) system. Consequently, CMA didn't have complete assurance that amounts recorded in the system were accurate." The report quotes CMA officials as saying that when the one-ton containers were first filled, different methods of varying

accuracy were used to weigh and record how much agent was in each for the purpose of the USA declaring the size of its stockpile under the CWC. The report gives as an example one site that used a scale where "weight could vary by as much as 129 pounds if reweighed on a more accurate scale". It concludes that "due to these methodologies it was determined that weights, in some cases, were inaccurate because of the scales used during the time of production". It adds, that "some of the chemical agent hardened in the container and remained in this state even after the container was destroyed during the demilitarization process". The report recommends that the sites in question develop databases for recording disposal figures and that they speedily address any problems with accounting. According to the *Deseret News*, although the redacted version of the report does not specify all the storage depots where problems were found, the Deseret facility in Utah was among them.

9 February In Port Arthur, Texas, Veolia Environmental Services has completed the incineration of more than 1.5 million gallons of hydrolysate – the product of chemical neutralization of VX nerve agent – which had been shipped to it from the Newport chemdemil facility, so reports *The Port Arthur News*. The Newport facility completed its destruction operations last year [see 8 Aug 08]. A court subsequently dismissed a case brought by a number of organizations seeking to stop the shipments [see 22 Sep 08]. Meanwhile, the *Beaumont Enterprise* reports that within the next two months the facility at Port Arthur will commence incinerating up to 8,000 gallons of waste produced from the neutralization of sarin nerve agent stored in three containers at the Blue Grass Army Depot in Kentucky. It will also incinerate personal protective gear from the Newport facility.

10 February The US Institute of Medicine and the National Research Council releases an interim report by the Committee on Effectiveness of National Biosurveillance Systems: BioWatch and the Public Health System, which was charged with evaluating the effectiveness of the Department of Homeland Security's BioWatch programme [see also 7 Feb 07]. The evaluation includes a comparison of the costs and benefits for the current generation and the planned next generation of BioWatch technology; the costs and benefits of an enhanced national surveillance system that relies on the participation of hospitals and the public health system; and the effectiveness of this approach compared to that of the current BioWatch programme. The report contains no conclusions or recommendations, but outlines the committee's initial progress in addressing the major issues under consideration. The committee expects to release a final report later in the year.

10-11 February In Tashkent, Uzbekistan there is a workshop in on the implementation of United Nations Security Council resolution 1540 [see 28 Apr 04]. Participating in the workshop are more than thirty representatives from the Uzbek parliament and government ministries, as well as from the Institute of Nuclear Physics and the Scientific Research Institute of Veterinary Science. Also participating are international experts on non-proliferation, export control officials and industry representatives. Also participating are representatives of the 1540 Committee, the European Union's BOMCA/CADAP programme, the Office of the OSCE Project Coordinator in Uzbekistan, the UN Office on Drugs and Crime and VERTIC. The workshop aims to increase the awareness of Uzbek government officials and experts of resolution 1540, with particular emphasis on implementation requirements and

the resources available to assist with implementation. The event is organized by the James Martin Center for Nonproliferation Studies, USA in cooperation with the Uzbek Ministry of Foreign Affairs. Financial support is provided by the US Department of State.

11 February Indian Prime Minister Manmohan Singh is to release new guidelines on the management of chemical, biological and nuclear terrorism, according to *The (Delhi) Asian Age*. The draft guidelines are reported to state that the number of countries currently working on biological weapons is estimated to be between eleven and seventeen, some of which also sponsor terrorist activities. They also state that terrorists are capable of manufacturing biological weapons that could be used against civilian targets, especially to cause panic. *The Age* quotes the guidelines as saying: "These artificially induced infections would behave similar to natural infections and would be difficult to detect except by an effective disease surveillance mechanism... In the agriculture sector, the inadvertent introductions of exotic species have had far-reaching consequences. Nevertheless, deliberate actions have not yet been recorded. Rapid advances in biotechnology and aggressive deliberate designs could open up opportunities for the hostile use of biological resources." Meanwhile, *The (Calcutta) Telegraph* reports Chief of the National Security Guard J.K. Dutt as warning that al-Qaeda could use biological weapons against India. During a seminar in Manesar, Haryana, unidentified officials are quoted as saying that the Intelligence Bureau and Research Analysis Wing had been alerted to, amongst other things, the possible use by al-Qaeda of biological weapons.

11-13 February At OPCW headquarters, a basic course for the Technical Secretariat's Assistance Coordination and Assessment Team takes place. The course follows on from an advanced course held from 27 to 30 October 2008. The UK government provided financial support for both courses.

12 February South African Army chief Lieutenant-General Solly Shoke says the military will reintroduce a chemical and biological weapons capability and bring back some of its former expertise for defensive purposes. Speaking at the South Africa Army College in Pretoria, Shoke says that abolishing expertise in some technical areas, including chemical and biological warfare, explosives and ordnance disposal soon after 1994 was a mistake. He says: "We did away with certain capabilities, which we later realised was a mistake... We were wrong to do this, but these capabilities are being resuscitated."

12 February The US Senate Select Intelligence Committee conducts its annual hearing into 'Worldwide Threats'. Testifying before the Committee, Director of National Intelligence Dennis Blair says: "We assess countries that are still pursuing WMD programs will continue to try to improve their capabilities and level of self-sufficiency over the next decade. Nuclear, chemical, and/or biological weapons or the production technologies and materials necessary to produce them may also be acquired by states that do not now have such programs; and/or by terrorist or insurgent organizations; and by criminal organizations, acting alone or through middlemen... Over the coming years, we will continue to face a substantial threat, including in the US Homeland, from terrorists attempting to acquire biological, chemical, and possibly nuclear weapons and use them to conduct large-scale attacks... Conventional weapons and explosives will continue to be the most often used instruments of destruction in terrorist attacks; however, terrorists who are determined to develop

CBRN capabilities will have increasing opportunities to do so, owing to the spread of relevant technological knowledge and the ability to work with CBRN materials and designs in safe havens... In particular, we assess the terrorist use of biological agents represents a growing threat as the barriers to obtaining many suitable starter cultures are eroding and open source technical literature and basic laboratory equipment can facilitate production."

12 February In the USA, Senator Robert Casey announces that he and Senator Richard Burr have established a bipartisan caucus to address the threats from chemical, biological, radiological and nuclear terrorism. In his press release, Casey says: "In forming this caucus, I want to establish a forum to better educate senators on the scope of the threat posed by weapons of mass destruction and the very real policy steps we can take to mitigate this grave challenge." Meanwhile, Burr says: "We must ensure the US government continues to make the prevention of, and preparedness for, bioterrorism and other WMD threats a top priority." The Senate Caucus on WMD Terrorism plans to hold regular meetings with "leading experts in the field on proposed policy responses to prevent, prepare for, mitigate and respond to acts of WMD terrorism".

14 February In the USA, Iranian-born physician Nasser Talebzadeh Ordoubadi, who was later also known as Noah McKay, dies in what the Tehran-based Tabnak news agency quotes his doctors as describing as a "suspicious death". Tabnak says that Talebzadeh's death is likely linked to his work to discover an antitoxin therapy of biological weapons, which had made him the target of numerous accusations from the US government. In 2000, Talebzadeh was sentenced to 35 months imprisonment after being found guilty under the Health Insurance Portability and Accountability Act 1996 of health care and mail fraud during the time that he ran a health centre in Washington State. Later, whilst in the federal prison camp in Sheridan, Oregon, he reportedly told one of his lawyers "my life is in danger and I should change my name and request transfer to another prison". DEBKAfile reports that the US intelligence agencies monitored Talebzadeh on suspicion that he was obtaining access to classified biological weapons and antitoxins, and using US territory as a base to pass on secrets to Islamist terrorists. He was also suspected of working with Russian mafia elements in Seattle who were allegedly procuring advanced weapons for overseas terrorist organizations.

16 February South Korean Defense Minister Lee Sang-hee says that recent actions by North Korea mean that the time has now come for South Korea to join the US-led Proliferation Security Initiative (PSI) [see also 27 Feb 08]. In an address to parliament, Lee says: "Under the situation in which North Korea is developing long-range missile[s] and nuclear weapons, it is time for South Korea to reconsider its participation... The government understands the purpose of PSI, and we should determine the level of support ... (and) push for participation in stages in accordance with our situation." North Korea has previously stated that there would be "catastrophic consequences" should South Korea join the PSI [see 31 Oct 06].

Seven weeks later, Yonhap news agency quotes an unidentified South Korean Foreign Ministry source as saying that South Korea "is expected to announce its decision to take part in the PSI [in about a week's time] shortly after the UN Security Council issues a statement on North Korea's [recent] rocket launch". Two days later, South Korean Foreign

Ministry Spokesman Moon Tae-young tells reporters that the government is to delay its announcement of joining the PSI. The decision to do so follows a proposal by North Korea that the subject be discussed at a meeting between the two countries on economic matters pertaining to their shared industrial site at Kaesong. At the meeting, six days later, Yonhap news agency quotes North Korean officials as warning that South Korea joining the PSI would provoke a "confrontation".

Thirteen weeks later – a day after the second underground nuclear test by the North – South Korea announces that it has now formally joined the PSI. In a statement to parliament, South Korean Foreign Ministry spokesman Moon Tae-Young says the government made its decision "to cope with the serious threat that the proliferation of weapons of mass destruction and missiles poses to world peace and security", while adding that "maritime agreements reached between South and North Korea will still remain valid". US President Barack Obama later thanks South Korean President Lee Myung-bak for South Korea's decision to do so in a telephone conversation during which the two discuss the way forward following the nuclear test by North Korea. A statement by the White House says the two agreed that the test by North Korea was "a reckless violation of international law that compels action in response".

16 February In the USA, researchers have determined that *Lactobacillus acidophilus* – a bacterium present in dairy products – can act as an effective vehicle for an oral vaccine to provide immunity to anthrax, thus opening up the future possibility of a pill-based anthrax vaccine, according to research published in the *Proceedings of the National Academy of Sciences*. The team of researchers, which included scientists from the US Army Medical Research Institute for Infectious Diseases, found that when mice consumed dairy products containing the vaccine, an immune response was triggered in the small intestine. In a statement, Todd Klaenhammer of North Carolina State University, who helped lead the study, says: "Normally, you can't eat vaccines because the digestive process in the stomach destroys them, so vaccines are administered by needle... Using 'food grade' lactic acid bacteria as a vehicle provides a safe way of getting the vaccine into the small intestine without losing any of the drug's efficacy."

17 February In Syria, a review of satellite images taken between 2005 and 2008 shows an increase in operations at a suspected chemical weapons facility at al-Safir, according to a report in *Jane's Intelligence Review*. The images taken by GeoEye and DigitalGlobe appear to show that new structures for warehousing and manufacturing complex chemical materials have been built. The buildings reportedly had sophisticated filtration systems and cooling towers; bays for specially adapted Scud missiles had also been built. Christian Le Miere, editor of the Review, writes: "The satellite imagery that [...] *Jane's* has examined suggests that Damascus has sought to expand and develop al-Safir and its chemical weapons arsenal ... [T]he al-Safir facility appears to be the most significant chemical weapons production, storage and weaponisation site in Syria. Its presence indicates Syria's desire to develop unconventional weapons, either to act as a deterrent to conflict with Israel or as a force enhancer should any conflict ensue... Further expansion of al-Safir is likely to antagonize Israel and highlight mutual mistrust, even as peace talks between the two neighbors progress intermittently." In a statement, *Jane's Information Group* says: "The site contains not only a number of the defining features of a chemical weapons facility but

also that significant levels of construction have taken place at the facility's production plant and adjacent missile base... This does not suggest that Syria is arming itself for an offensive but it could have regional security implications given Syria's tension with its neighbor, Israel." [See also 10 Nov 08]

17 February In the UK, the Foreign and Commonwealth Office, the Department of Energy and Climate Change, and the Ministry of Defence (MoD) release the sixth [see 18 Feb 08] annual report on the UK's Global Threat Reduction Programme (GTRP) activities for 2008 under the Global Partnership [see 26-27 Jun 02].

With regard to the construction of the Shchuch'ye chemdemil facility in Russia, the report states that the facility has now reached "virtual completion" with the construction of a railway, funded by Canada, on which weapons will be transported from the storage facility to the destruction facility; and completion of the main elements of construction and installation work associated with the electricity supply for the facility, which was funded by the Czech Republic, Finland, Ireland, the Netherlands, Norway, Sweden and the UK. In relation to UK-managed projects, it states: "As at 31 December 2008, elements of only three major UK-managed projects remained to be completed. Completion of the installation and construction work associated with the electricity supply was due to be completed in January 2009; procurement of remaining items of destruction process equipment was also due to be completed in January 2009, except for one item planned for final procurement in mid 2009. In 2008 Russia requested the UK to procure two additional items of destruction process equipment: the Motor Control Centre, which provides the start/stop mechanisms for all of the motors associated with the Metal Parts Furnace, and a pair of extractor fans. These are to be manufactured in the US, and will be delivered to Russia later in 2009." The report notes that in 2008 one of the two destruction process buildings was completed and all the destruction process equipment installed, most of which was procured through the UK programme. Russia will now install process equipment in the second building, which has also now been completed, for the start of the second phase of operations later in 2009. Construction of the industrial and social infrastructure that will support the facility is also virtually complete. This is being funded and implemented by Russia, with major contributions from international donors, including the UK, Canada, France, Italy, and Switzerland. The report adds: "The UK assistance programme at Shchuch'ye is the largest single programme managed by the UK under the GTRP. When it is finally completed in 2009, the [...] programme will have involved expenditure of some £85 million, of which the UK will have contributed £23 million, Canada £46 million, and other donors £14 million. The total sum expended includes over £4 million of interest which has accrued on donor funds while held in UK Government accounts."

In relation to the UK's programme on the redirection of biological and chemical scientists and biological non-proliferation – which is currently supporting projects in Georgia, Iraq, Kazakhstan and Libya – the report states that "the main priority over the past year has been to put in place the essential foundations for the planned expansion of the programme, starting in 2009". In this regard, it states: "The overall strategy for the programme has been revised... [It] will be refocused towards broader non-proliferation/threat reduction. The programme will continue to include redirection projects, but will also include other activities which help to reduce the risks from dual-use biological and chemical science, and will seek to both strengthen and complement work done in support of the [BWC] and, where appropriate, the [CWC]... Biological

projects will remain the focus of the programme, with chemical projects included where appropriate... Efforts will continue to be focused on the FSU [Former Soviet Union], generally outside Russia, and further projects will primarily be established in this region. Such projects will ordinarily be carried out through the ISTC [International Science and Technology Center, Moscow] and STCU [Science and Technology Center, Ukraine]... The UK will consider supporting projects elsewhere, if there is a strong case for doing so. Possible regions for such engagement are the Middle East and South Asia... The UK will seek to complement and cooperate with the work of other partners (particularly the US, Canada, and EU partners), including by 'piggybacking'... Given the increased risks from naturally occurring new and emerging disease, consideration will be given to the additional benefits from projects which contribute to wider UK health security objectives, in partnership with the Department of Health, the Department for Environment, Food and Rural Affairs, and their agencies." The report adds that the MoD has become a 'partner' of the STCU, with a view to facilitating implementation of any future projects in Ukraine and Azerbaijan. The report notes that the MoD's first pilot biological redirection project, which is being implemented as an ISTC 'partner project', is to support the Institute of Plant Immunity in Kobuleti, Georgia "to develop an effective sustainability strategy". It adds: "The Institute continues to make progress and has recently completed a comprehensive study of plant pathogens in Georgia. In October 2008, the Institute hosted a Trans-Caucasus Plant Pathology Workshop as part of efforts to establish its continuing role in plant health in the Caucasus region... The G Eliava Bacteriophage Institute in Tbilisi is conducting a review of Soviet-era literature relating to the use of bacteriophages... Due, in part, to the amount of material under review, progress on this project has been slower than envisaged, but it hoped that the Institute will have produced a final report early in 2009... The MoD supported collaborative research into treatments for Brucellosis by the Georgian National Centre for Disease Control, Tbilisi, Dstl and the Eliava Institute. The initial results of this study were presented by scientists from NCDC at the international Brucella 2008 Conference, hosted by the [Veterinary Laboratory Agency]."

17 February *The New York Times* reports Department of Homeland Security Secretary Janet Napolitano as having ordered a review of the Top Officials (TOPOFF) exercise. After having participated in the last such exercise as governor of Arizona, Napolitano had reportedly criticized it as being too expensive, too long in planning and "too removed from a real-world scenario" [see 16-19 Oct 07].

17 February The US Department of Homeland Security (DHS) Inspector-General releases a report which concludes that removing the Federal Emergency Management Agency (FEMA) from the DHS and once again making it an independent agency "would cause considerable upheaval" to both FEMA and DHS. In his report, Richard Skinner notes that in the three years before DHS was established in 2003 – when it absorbed FEMA – FEMA and the Coast Guard conducted joint exercises on thirteen occasions; in the three years after DHS was created, fifty-nine such exercises were held.

17-20 February At OPCW headquarters, the Executive Council convenes under the chairmanship of Ambassador Oksana Tomová of Slovakia for its fifty-fifth [see 14-17 Oct 08] session.

The following delegations make statements during the general debate: Cuba (on behalf of the Non-Aligned Movement

and China), the Czech Republic (on behalf of the European Union and associated countries), South Africa (on behalf of the African Group), Japan, Russia, China, Brazil, Iran, India, the USA, South Korea, Sudan and Iraq (observer).

The Chinese national statement includes this: "My delegation has taken note of the report on the performance of the modified methodology for the selection of OCPFs for inspection, which the DG submitted to the Council [see below]. The performance has shown that there is still room for making the methodology more reasonable and effective. My delegation is of the view that this methodology is but a transitional measure, and that we should restart consultations as soon as possible on the selection methodology for OCPF inspection, in order to reach a proper solution which meets the requirements of the Convention."

The statements on behalf of the African Group and the NAM reportedly denounce Israeli use of chemical weapons in Gaza [see 4 Dec 08], as does the Iranian national statement, which speaks of the responsibility of the OPCW for preventing similar events in the future.

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]. The Council considers and notes two national papers each by Libya, India, Russia and the USA on the status of their destruction obligations; two national papers by China on the status of chemical weapons abandoned by Japan in China, and two national papers by Japan on the current status of the abandoned chemical weapons projects in China.

The Council notes the part of the Director-General's opening statement on the current destruction figures as of the end of the previous month [see 31 Jan]. The statement notes that India, Libya, Russia and the USA submitted their sixth and seventh reports on the progress made towards completing the destruction of their Category 1 chemical weapons in a timely manner. In addition, China and Japan each submitted two reports on the progress made towards the chemdemil of weapons abandoned by Japan on the territory of China. The statement says that following a request by Russia, the Technical Secretariat has agreed on an adjustment of the figure reported by Russia for the aggregate quantities of chemical weapons initially declared. The adjustment relates to thickeners forming part of viscous chemical agents. The statement says that China and Japan "have just completed the first trial excavation at Haerbaling", the results of which are expected to provide more information on the condition of buried abandoned chemical weapons. Both countries have now begun discussions with the Technical Secretariat regarding a draft facility agreement and detailed plan for verification. With regard to the lewisite chemical weapons production facility (CWPF) in Dzerzhinsk, Russia, the statement notes that in January 2009, once all conditions for certification of the destruction of the facility had been met, the Technical Secretariat issued a certificate of destruction for it.

The Council notes from the opening statement of the Director-General that 67 industry inspections have been completed since its last session, including two at Schedule 1 facilities; 10 at Schedule 2 plant sites, of which two were with sampling and analysis; eight at Schedule 3 plant sites; and 47 at other chemical production facilities.

The Council notes from the Director-General's opening statement the submission to the Council of a status report on the timely submission of declarations under Article VI for the period 1 January to 31 December 2008. The statement notes that during that period, "more than 80 per cent of the CWC parties that did so submitted their annual declarations of

anticipated activities for 2009 on time, and all those that were unable to meet the deadline indicated the difficulties that were encountered in meeting the deadline". Fifteen parties have yet to submit or complete their initial declarations.

The Council decides to consider at its next regular session recommendations contained in a note previously issued by the Secretariat regarding the nature of continued verification measures at the converted chemical weapons production facility (CWPF) at CRP Portreath (formerly Chemical Defence Establishment, Nancekuke), Cornwall, UK. The Council considers and notes a note by the Secretariat on the update on progress in converting a former CWPF for purposes not prohibited under the CWC. It also considers and notes a note by the Director-General on the notification by an unidentified State Party on changes at the CWPF converted for purposes not prohibited under the Convention.

The Council decides to consider at its next regular session a report by the Director-General on the status of implementation of Article X as at 31 December 2008 and a note by the Secretariat to evaluate the effectiveness of current programmes undertaken under Article X.

The Council decides to consider at its next regular session a report by the Director General on the status of implementation of Article XI as at 31 December 2008. The Council emphasizes the importance of the early appointment of a facilitator with a view to resuming consultations on the full implementation of Article XI.

The Council considers a facility agreement with the USA regarding on-site inspections at a Schedule 1 facility and decides to consider it further at its next regular session. The Council considered two notes by the Secretariat on amendments and modifications to the facility agreement with Iran for a Schedule 1 protective purposes facility, together with the amendments, and decides to consider them further at its next regular session.

The Council considers and notes a Note by the Secretariat on the optimisation and efficiency of verification activities. It also considers and notes the Supplement to the 2007 Verification Implementation Report.

The Council further considers a Note by the Secretariat on enhancing information on the characteristics of plant sites in other chemical production facilities (OCPF), and a note by the Director-General concerning information on the enhancement of OCPF declarations, both of which the Council had previously received at its fifty-third session [see 24-27 Jun 08]. It also receives an oral report from the facilitator, Marthinus van Schalkwyk of South Africa, on the progress made during consultations on the matter.

The Council considers a report from the Director-General on the performance of the modified OCPF site-selection methodology at the end of the first year of its implementation. The Council had requested the Director-General to compile the report at its fiftieth session [see 25-28 Sep 07]. The Council receives an oral report on the progress made from Giuseppe Cornacchia of Italy, the facilitator for the consultations on low-concentration limits.

The Council notes a Note by the Secretariat on the review of operational requirements and technical specifications of the inspection equipment, which was first approved by the Conference at its first session [see 06-24 May 97].

The Council considers a Note containing lists of new validated data and approves the lists.

19 February In London, there is a meeting on *New Approaches to Biological Risk Assessment*, which is jointly organized by the Royal Society's Science Policy Centre and the International Council for the Life Sciences. Participating

in the meeting are twenty international experts in infectious disease, international security and risk assessment. They examine both naturally occurring disease and the deliberate misuse of biological agents, and discuss considerations for further developing risk assessment methodologies.

20 February In Doha, Qatar, Islamic scholar Shaykh Yusuf al-Qaradawi delivers a sermon in which he says: "A few days ago someone asked me whether we may possess chemical, biological, or nuclear weapons. I replied: 'yes we may possess them, but we should not use them. We acquire them to terrify God's enemies. If we possess nuclear weapons, they will be afraid to attack us. This is armed peace'." It is unclear whether the statement, which is reported by the Doha *Al-Sharq*, is referring to the Qatari government or Muslims in general.

23 February In Shenzhen, China, two men are sentenced to death for contaminating food in a snack bar with sodium nitrite in February 2008, which led to the two deaths and sixty-one people needing medical treatment. According to Xinhua news agency, the poisoning was masterminded by Zhu Yuanlin to pressurize the local government into demolishing a nearby market that had taken business from his shopping outlets. Zhu entered a business arrangement with Zhang Zhenhua in which Zhang would, within four weeks, find a way of getting the government to demolish the market. Zhang talked with his friend Ke Bizhi and in a separate business arrangement agreed on a large-scale food poisoning of the market's snack bars. Ke then purchased a consignment of sodium nitrite and instructed Wang Yingde to contaminate food at one of the market's snack bars with it. The death sentences are handed to Ke Bizhi and Wang Yingde, while Zhu Yuanlin is sentenced to life imprisonment and Zhang Zhenhua to 15 years imprisonment. Xinhua reports that "health experts warned that 0.2 grams of sodium nitrite could poison an adult and three grams were enough to kill".

23 February South Korea publishes its defence white paper for 2008, which amongst other things, states that North Korea possesses 2,500 to 5,000 tonnes of chemical weapons. This statement is a repeat of that made in its white paper two years previously [see 29 Dec 06].

24 February In Vienna, OPCW Director-General Rogelio Pfirter says that countries may now find it more difficult to provide the funding needed to meet the 2012 chemdemil deadline under the CWC given the global economic crisis. Speaking to reporters on the sidelines of a conference at the Diplomatic Academy, Pfirter says: "I would say it will cost tens of billions of dollars for the United States, and several billions for Russia [to complete their destruction operations]." In his address to the conference, Pfirter provides an overview of the CWC and the work of the OPCW.

24 February In Baltimore, Maryland, the American Society for Microbiology holds its seventh annual Biodefense and Emerging Diseases Research Meeting. Included in the meeting is a plenary session at which scientists directly involved in the investigation of the anthrax letter attacks [see 15 Oct 01] present their analysis and conclusions. The purpose of the meeting is to bring together individuals undertaking research on defending against the threat of bioterrorism with policymakers who are involved in setting the future agenda for biodefence research. During the meeting, Joseph Michael, a materials scientist at Sandia National Laboratories in Albuquerque, New Mexico presents analyses of three letters

sent to the *New York Post* and to the offices of Senators Tom Daschle and Patrick Leahy. The journal *Nature* quotes him as saying that the spores from two of the letters displayed a distinct chemical signature that includes silicon, oxygen, iron and tin, while the third letter had silicon, oxygen, iron and possibly also tin. The significance of this, according to Michael is that bacteria retrieved from Bruce Ivins' RMR-1029 flask did not contain any of those four elements [see also 6 Aug 08]. However, *Nature* quotes Jason Bannan of the FBI's Chemical Biological Sciences Unit as saying that the RMR-1029 culture was created in 1997, and the mailed spores could have been taken out of the flask and grown under different conditions, resulting in varying chemical contents. Among the other presentations given is one by Paul Keim of Northern Arizona University, on the procedure for sequencing the genome of the Ames strain of *Bacillus anthracis*. *Nature* also quotes spokeswoman for the National Academy of Sciences Christine Stencel as saying that the FBI has asked the Academy to establish a panel of experts to review the data relating to the anthrax investigation. [See also 16 Oct 08]

25 February The London *Financial Times* reports the French, German and UK governments as having proposed a list of additional sanctions to be imposed on 34 Iranian entities and ten individuals allegedly linked to "Iran's covert nuclear or biological programmes". A "confidential document", seen by the *Times* and the Italian *Il Riformista*, identifies one of the listed entities as the Razi Institute for Serum and Vaccine, which according to the *Times* is Iran's "biggest producer of serum and vaccine". The *Times* reports unidentified "European diplomats" as differing over the reasoning behind the new list, with some saying it is aimed at giving the USA more muscle in its dealings with Iran over the latter's nuclear programme, while others say its aim is to influence a tougher outcome of the upcoming review by the USA of its Iran policy.

25 February In the USA, the Advisory Committee on Immunization Practices decides unanimously that anthrax vaccinations for military personnel and others should involve the injection of five doses into muscle tissue as opposed to the customary six doses beneath the skin. The Committee also recommends altering the schedule for delivering injections so that the second shot be administered four weeks after the original dose, with follow-up injections given six, twelve and eighteen months after the first shot. Under the previous guidelines, three shots were given in the first month and three boosters were administered at six-month intervals from the start of the treatment. The Committee also makes a number of other recommendations regarding the guidelines, which are subject to approval by the director of the Centers for Disease Control and Prevention and the director of the Department of Health and Human Services. In a statement, Tom Skinner, a spokesman for the Centers for Disease Control and Prevention, says the new procedure would only allow recipients of the anthrax vaccine to receive injections beneath the skin when an intramuscular shot could cause health complications. According to the Center for Infectious Disease Research and Policy, the Committee reached its decision using data from the interim results, released four months previously, of an ongoing clinical study. That study found that volunteers who received either three or four intramuscular doses over six months had about the same antibody responses at seven months as did volunteers who received the standard series of vaccinations, involving four subcutaneous doses in the first six months. In addition, those who received intramuscular doses had fewer side effects at the injection site than those who received subcutaneous doses. Two months thereafter,

the Food and Drug Administration subsequently approves the five-dose intramuscular injection schedule, following a request to do so by Emergent BioSolutions, the manufacturer of the vaccine BioThrax. [See also 23 Oct 08]

26 February Russian Federal Department for the Safe Storage and Disposal of Chemical Weapons Head Valery Kapashin says “if the financing [of the Russian chemdemil] programme is cut by more than 15 per cent, Russia will be unable to honour its international obligations”. Speaking during a meeting of the Federal Agency for Special Construction of Russia, Kapashin adds: “We expect the funding of all tasks and facilities to be reduced by 3 per cent to 15 per cent due to the complicated situation in the country amid the global financial crisis... If this happens Russia will only be able to implement the (project’s) third stage with great effort.” [See also 28 Jan and 24 Feb]

26 February In The Bahamas, there is a second [see 11 Dec 08] national consultative meeting on the ratification of the CWC by Bahamas, the purpose of which is to familiarize stakeholders with the obligations that will follow ratification. Attending the meeting are representatives from the ministries of environment, national security and foreign affairs as well as a number of other public and private enterprises. A number of international experts also attend to offer advice and guidance. Speaking to reporters at the end of the meeting, Bahamian Under-Secretary for the Ministry of Foreign Affairs Marilyn Zonicle says: “We’ve done all the leg work in terms of what is required of us under the convention... That includes legislation, a national authority or focal point body to liaise between The Bahamas and the UN body that administers the convention.” In view of the fact that the parliament still needs to adopt the legislation, Zonicle says the steering committee felt it best to meet with all stakeholders beforehand to make sure that all the mechanisms are in place.

26 February In the US House of Representatives, Director of Natural Resources and the Environment, Government Accountability Office (GAO) John Stephenson testifies before the Energy and Commerce Subcommittee on Commerce, Trade, and Consumer Protection on options for enhancing the effectiveness of the Toxic Substances Control Act 1976. His testimony – which is based on previous investigations undertaken by the GAO – addresses implementation of the Act by the Environmental Protection Agency. It also assesses options for obtaining information on the risks posed by chemicals to human health and the environment, controlling such risks, and publicly disclosing information provided by companies under the Act.

26 February In Washington DC, Senators Richard Burr and Edward Kennedy reintroduce legislation – similar to that which lapsed in the Senate last year – aimed at increasing the safety and security of facilities handling materials that could be used in acts of bioterrorism. If passed, the Select Agent Program and Biosafety Improvement Act of 2009 would assess federal oversight of high-security biological research laboratories, heighten training at the sites and create a system for reporting safety or security lapses. It would also reauthorize funding for the Select Agent Program, which sets rules governing the movement and use of potential biological-weapon agents, for which authorization expired in September 2007. In his press release, Burr says: “We must support scientific research while also making sure select agents are kept out of the hands of terrorists and are used safely and securely in our laboratories... Reauthorizing the Select Agent Program is vital

to ensuring our nation’s safety and security, and I look forward to working with my colleagues to reauthorize and improve the program.” Kennedy adds: “The bill that we introduce today helps protect Americans from biological threats, while also protecting scientific freedom and integrity.”

26 February US President Barack Obama transmits to Congress his proposed budget for FY 2010 [see also 4 Feb 08]. The budget, according to the Associated Press, increases funding for the Department of Defense by 4 per cent, to \$533.7 billion. The State Department’s budget for WMD non-proliferation programmes would be increased to \$51.7 billion. Meanwhile, the Department of Homeland Security would receive \$42.7 billion, a 1.2 per cent increase, however, its funding for deploying and maintaining biological agent detection equipment would be reduced by 75 per cent under the proposal.

26 February In Washington DC, the Institute of Bioscience and International Security Policy holds its first workshop at Georgetown University on *International Initiatives for Reducing Bioviolence Dangers*. The Institute was launched two weeks previously by Barry Kellman of the DePaul University College of Law and Executive-Director of the Global Resource Initiative Kimothy L Smith “to focus expertise on opportunities and security challenges associated with advancing bioscience”. The Institute, with the support of the US Department of Homeland Security, is currently preparing a report on the need for international security policies to promote the potential of bioscience and to reduce its dangers.

March In the USA, the National Research Council Committee on Prevention of Proliferation of Biological Weapons in States beyond the Former Soviet Union releases *Countering Biological Threats: Challenges for the Department of Defense’s Nonproliferation Program Beyond the Former Soviet Union*. The study – which was required under the National Defense Authorization Act 2008 – considers a number of issues relating to US cooperation in the field of prevention of proliferation of biological weapons with developing countries, other than states of the former Soviet Union (FSU), within the framework of the Department of Defense’s (DoD) Biological Threat Reduction Program. Specifically, it assesses the capacity of developing countries to control dual-use technologies; assesses cooperative non-proliferation approaches used in the FSU that could be used in other countries; reviews other international programmes that could contribute to non-proliferation; and recommends steps for integrating DoD’s non-proliferation activities with other relevant US government programmes outside the FSU.

2 March In Israel, the parliamentary subcommittee of the State Comptroller releases its annual report, which concludes that the public is highly vulnerable to a chemical-weapon attack because the government has made a “continuing mess” of plans to collect and maintain aging supplies of gas masks and other materials. Five years ago, the government decided to collect protection kits – containing gas masks, filters, syringes with an antidote for nerve gas, and powder for neutralizing chemicals – distributed to the public in 1990 and to store and maintain them centrally [see 15 Feb 04 and 6 Jun 04]. According to the Associated Press, however, the collection of the kits has yet to be completed. The report says: “The low incidence of functioning protection kits will not allow the provision of protection to most of the citizens of Israel in the event that the country is attacked.” [See also 14 Aug 08]

2 March The US Supreme Court upholds an earlier ruling by the Second Circuit Court of Appeals in New York dismissing three cases brought against Dow Chemical Co, Monsanto Co and thirty-five other companies for having manufactured Agent Orange, later used by the US during the Viet Nam War [see 22 Feb 08]. The Appeals Court had dismissed the first case – brought by the Vietnamese Association for Victims of Agent Orange/Dioxin – on the grounds that the claimants had failed to show that use of herbicide violated international law as it was used to protect US troops from ambush and not as a weapon against the civilian population. The claimants had also failed to prove their health problems were linked to the herbicide. The other two cases, brought by US veterans and their relatives – Isaacson v Dow Chemical Co and Stephenson v Dow Chemical Co – were dismissed owing to government contractors being protected under federal law.

2 March In the US House of Representatives, Representative Rush Holt introduces a bill that would establish a congressional commission to investigate the 2001 anthrax letters attacks [see 15 Oct 01] and the federal government's response to and investigation thereof. Under the Anthrax Attacks Investigation Act 2009, the commission would make recommendations to the President and Congress on how the country can best prevent and respond to any future bioterrorist attack. In his press release Holt says: "All of us – but especially the families of the victims of the anthrax attacks – deserve credible answers about how the attacks happened and whether the case really is closed...Myriad questions remain about the anthrax attacks and the government's bungled response to the attacks." The Commission's final report would be released eighteen months after it commences operations.

2-4 March In Dar-es-Salaam, Tanzania, there is a sub-regional training course for customs authorities in East and Southern Africa on technical aspects of the CWC's transfers regime. The course, which is the first of its kind in Africa, is conducted under the auspices of the OPCW's programme to strengthen co-operation with Africa and is part-funded by voluntary contributions from the governments of the Netherlands and Norway. Attending are 49 participants from the following 20 CWC parties: Burundi, Comoros, Democratic Republic of Congo, Djibouti, Eritrea, Ethiopia, Kenya, Madagascar, Malawi, Mozambique, Namibia, Rwanda, Seychelles, South Africa, Sudan, Swaziland, Tanzania, Uganda, Zambia and Zimbabwe. In addition, participants from Angola, a non-party, also attend. The course offers an overview of the rights and obligations that the CWC confers on parties. It also provides practical training on implementing its provisions and ways to eliminate discrepancies between the quantities of scheduled chemicals declared by importing and exporting parties with regard to the same transfers. A number of practical exercises also take place as well as group discussions. There are also opportunities for customs authorities to share information about their efforts in implementing the provisions of the transfers regime.

2-6 March In Singapore, the first regional training course on emergency response to chemical incidents for CWC parties in Asia takes place at the Civil Defence Academy. Participating in the course – which is jointly organized by the Singapore national authority, the Singapore Civil Defence Force and the OPCW – are a total of 16 participants from 13 CWC parties in Asia. Participants receive training on building support teams in civil protection and de-contamination operations; the use of personal and collective protective equipment; and the

use of monitoring, detection and decontamination tools. Also included in the course is a visit to the recently opened Tuas Protective Analytical Facility at Singapore's Tuas border crossing [see 20 Jan].

2-6 March In Nairobi, Kenya, there is a course on 'The Running and Interpretation of GC-MS Spectra' at the Jomo Kenyatta University of Agriculture and Technology. It is jointly organized by the Pan Africa Chemistry Network, Kenya, with support from the Royal Society of Chemistry, UK. Among those attending the course are five candidates from Africa who are sponsored by the OPCW under its Laboratory Assistance Programme.

3 March Canadian Minister of National Defence and Minister for the Atlantic Gateway Peter Gordon MacKay announces that Canada is to invest more than CA\$35 million for twenty-four new research projects to enhance Canadian security, including ones to strengthen Canada's ability to deal with threats from chemical and biological weapons.

3-4 March At OPCW headquarters, the Validation Group convenes for its twenty-ninth session to discuss the evaluation of new analytical data for possible inclusion in the OPCW Central Analytical Database and related matters.

5 March In southern Laos "a few years ago", the corroded remains of a US aircraft bomb encountered during international de-mining work were subsequently found to contain traces of degradation product of sarin nerve-gas. This story is now related by Evgeny Belenkiy writing for *Russia Today* from Vientiane, who states: "Most probably the bomb was 'misplaced' during the infamous 'Operation Tailwind' [see 7 Jun 98 and 9 Jun 01] in 1970 and lost by a bomber that was hit by anti-aircraft fire". Belenkiy, whose article was about the aftermath of the 1968-75 war in Laos, continued thus:

"The discovery became known to a BBC colleague and me through an American charitable organisation in Laos, associated with Veterans for Peace. There definitely was a story in it – it may have taken independent expert analysis of the [bomb remains], a bit of research and a lot of talking to the local villagers in order to find out about any impact on their health and livelihood. We were both prepared to do it. By then the [de-mining] volunteers had already run the story on the internet, but no mainstream media had it yet.

"Several days into the process a Lao friend invited me to a meeting with the holder of one of the higher offices in the Lao government. The official told me: 'I hear that you are going to run the sarin story ... I cannot order you not to, and there's no point in preventing you from doing it, you will give it to someone else. Instead I am asking you to try to understand us. The war is over. It's been over for thirty years. It is not in our character to dig up something rotten and stick it into the face of a foreign government only because their remote predecessors dropped it on our soil. I know it can create a scandal, but what will be the use of it for Laos?'

"The same night we discussed the matter between us: one Russian journalist, one British journalist and one American veteran, all three long-time 'Asia hands'. We decided against running the story. That act could have been described as spin, silent spin, on our part. But I'm still sure we did the right thing."

5 March In Udayarkattukulam, northern Sri Lanka, government forces discover seventeen gas masks and sixteen chemical-resistant costumes at a captured camp belonging to the Tamil Tigers (LTTE), according to a report issued by the Ministry of Defence, quoting unidentified "defence sources".

The Ministry says that the costumes would have been intended for a direct assault supported by chemical weapons. It adds: "The types of armoury found from the liberated areas of Wannai in recent times exposed the great disaster that Sri Lanka as a nation has been heading since the 2002 ceasefire. The LTTE had been allowed to import aircraft, heavy artillery, high-tech communication equipment, chemical weapons, etc. during the ostensible peace cherished by the short-sighted political leaders." A subsequent release from the Defence Ministry repeats what it had asserted many times previously, that "the LTTE has been acting as the unofficial Research and Development (R&D) department of the global terrorist network".

Four weeks later, TamilNet quotes unidentified "LTTE sources" as saying the Sri Lankan Army "extensively used chemical weapons on LTTE combatants at Puthukkudiyiruppu" during its ongoing offensive against the last remaining Tamil strongholds. The sources do not identify the type of chemical weapon allegedly used and do not mention whether there were any casualties. The Sri Lankan Army responds by issuing a statement strongly denying the allegations. [See also 11 Aug]

Eleven weeks later, the *Tamil Independent* quotes unidentified "sources" as saying that the Sri Lankan Army has again, over a two-day period, used chemical weapons against the Tamil population, as a result of which civilians have reported vomiting, difficulty in breathing, dizziness and fainting. The sources are reported as saying that the number of civilian casualties is expected to exceed at least the 1500 civilians believed to have been living in the areas affected. The Army has reportedly "rushed to clean up the bodies due to the visible burnt marks in these dead bodies due to chemical expose". Quoting other media sources, the *Independent* says: "It is known that the Sri Lankan Government purchased chemical weapons in 2001."

5 March In Russia, the Shchuch'ye chemdemil facility [see 17 Feb UK] commences operations with destruction of rocket warheads filled with sarin (GB). Completion of the second Main Destruction Building, which will bring the overall Shchuch'ye destruction capacity up to 1600 tons/year or more, is not expected for another year or so.

5 March The Canadian military is to create seven units within its reserve forces specialized in handling an array of domestic threats, including responding to CBRN attacks, arctic catastrophes and natural disasters, so reports the Toronto *National Post*. The order to set up the units was issued earlier in the year and the process is expected to be completed within two to three years. Speaking to the *Post*, Ontario army commander Brigadier General Jean Collin says: "There is a recognition, certainly within the military and we have heard the government say, that domestic security is the No. 1 priority...The reality is an army needs to train, an army needs to equip itself and an army needs to be ready."

5 March In the USA, a specialist in cleanup operations for the Army says that owing to budget constraints it is unlikely that the Department of Defense will meet the congressionally-mandated deadline of the end of FY 2009 to identify all its underwater chemical and conventional munitions dump sites around the US coast. Speaking to the Association of State and Territorial Solid Waste Management Officials, J C King says that to meet the requirement, the Army and Navy are currently taking an inventory of sites in an effort to list them in the Department's 2010 annual environmental report to Congress. However, he says: "[W]e are not going to make that, especially for conventional weapons."

5 March The US Congressional Research Service releases *Oversight of High-Containment Biological Laboratories: Issues for Congress*. The report focuses on the federal government's regulation of high-containment laboratories. It explains the concepts of biosecurity and biosafety, including the mechanisms by which the federal government oversees their implementation; describes the proliferation of high-containment laboratories; discusses issues facing federal policymakers; and identifies policy options for congressional consideration. Amongst other things, it states that "as of February 2009, approximately 390 entities had been issued with permits to work with select agents, and 15,300 staff were given security clearance to enable them to have access to select agents".

6 March Russian head of Rostekhnadzor (Federal Service for Ecological, Technological and Nuclear Monitoring) says that as of 1 March 2009 "12,000 tonnes or over 30 per cent of the stockpile of toxic agents had been destroyed [by Russia]". Speaking during a meeting of Rostekhnadzor, he adds; "The third phase of the programme should be completed in 2009 – up to 45 per cent of [the stockpile of] toxic agents should be destroyed." [See also 10 Nov 08 and 31 Jan]

6 March In the USA, the Federal Bureau of Investigation (FBI) issues a press release in response to questions raised at a recent meeting of the American Society for Microbiology [see 24 Feb] regarding two scientific analyses conducted during the course of the anthrax letters investigation [see 16 Oct 08]. "While this information is not new", the FBI says, "it is important for the FBI to clarify the science since these findings continue to be misinterpreted by various media outlets".

The first matter relates to the elemental analysis of the anthrax spores conducted by Joseph Michael, a materials scientist at Sandia National Laboratories. On this matter the FBI responds thus: "At the conference, Dr Michael presented analyses of three anthrax letters (Leahy, Daschle, and *New York Post*). He concluded that the anthrax powder in the three letters shared a chemical fingerprint but did not match the chemical fingerprint of spores in Ivins' flask. Spores from the letters showed a distinct chemical signature that included silicon, oxygen, iron, tin, and other elements. Spores from Ivins' RMR-1029 flask did not contain those elements in quantities that matched the letter spores. This is not unusual considering that Ivins' RMR-1029 preparation had been submerged in water and other chemicals since 1997 and was a mixture of 34 different spore preparations. The letter spores were dried spores, produced from two separate growth preparations as indicated by differences in the New York and Washington DC mailings. Although the chemical fingerprint of the spores is interesting, given the variability involved in the growth process, it was not relevant to the investigation. It is important to note that the genetic profile of the spores from the letters and the spores from Ivins' RMR-1029 flask was identical. Ivins' RMR-1029 spore preparation had the same combination of anthrax mutations found in the letters. Only eight of the anthrax samples collected during the course of the investigation matched the genetic profile in the letter material and all were linked back to RMR-1029. This conclusion was the most significant and relevant scientific finding in the case."

The second matter relates to the isotopic analysis of the anthrax letters [see 24 Feb]. The FBI makes the following statement on this: "Media reports indicated that FBI scientists had concluded in 2004 that out of many domestic and foreign

water samples analyzed only water from near Fort Detrick, Maryland, where Dr Ivins worked, had the same isotopic signature as the water used to grow the mailed anthrax. This statement is incorrect. While water isotopic analysis was researched, the FBI concluded that there were too many confounding variables to precisely match bacteria that were grown using different materials and recipes. This technique was not relevant to the investigation. While we have full confidence in our scientific approach, an additional independent review will provide further validation and thus benefit the larger scientific community. Consideration of an outside review began before any public disclosure of the scientific aspects of the investigation. This follows our approach throughout the investigation: to bring in external scientists to review and provide advice on our methodologies.”

6 March In the USA, the National Research Council Committee on Strengthening and Expanding the Department of Defense Cooperative Threat Program releases *Global Security Engagement: A New Model for Cooperative Threat Reduction*. The National Defense Authorization Act 2008 requested that the National Academy of Sciences recommend ways to strengthen and expand the Department of Defense’s Nunn-Lugar Cooperative Threat Reduction Program. In the report, the Committee – which was co-chaired by David Franz of the Midwest Research Institute and Ronald Lehman of Lawrence Livermore National Laboratory – says that “expanding the nation’s cooperative threat reduction programs beyond the former Soviet Union, as proposed by Congress, would enhance US national security and global stability” [see also Mar]. It also suggests that the programme “should be [...] updated in form and function [...] and supported as an active tool of foreign policy by engaged leadership from the White House and the relevant cabinet secretaries”. Under this new approach – which the report calls the CTR 2.0 model – the White House should engage a number of government agencies over and above those traditionally associated with security, such as defense, state, and energy. It should also engage academia, industry, and other organizations, and seek international partnerships, including under the G8 Global Partnership Against Weapons and Materials of Mass Destruction [see 26-27 Jun 02].

Seven weeks later, Senator Richard Lugar introduces the Nunn-Lugar Cooperative Threat Reduction Improvement Act of 2009, the purpose of which is to facilitate the implementation of the recommendations in the report. In a press release, Lugar points out that whilst the US administration could implement many of the recommendations without congressional action, the bill would give the Program legal authority to carry out its mission more effectively.

9 March The UK Defence Ministry, which has been investigating the possibility of residual mustard-gas contamination at one of the Second World War storage sites — near Barnard Castle at RAF Bowes Moor, where stores had later been incinerated – announces its latest findings at a public meeting of Bowes residents. Additional areas of contamination had been discovered but, given the existing patterns of land use, the levels of contamination were not high enough to affect people. The full report is to be made available in the coming months.

9 March US President Barack Obama transmits to the heads of government agencies a memorandum “for ensuring the highest level of integrity in all aspects of the executive branch’s involvement with scientific and technological processes”. The memorandum orders the Director of the Office of Science and Technology Policy to

develop, within 120 days, recommendations for Presidential action “designed to guarantee scientific integrity throughout the executive branch”. These recommendations shall be based on the following principles:

- (a) “The selection and retention of candidates for science and technology positions in the executive branch should be based on the candidate’s knowledge, credentials, experience, and integrity;
- (b) Each agency should have appropriate rules and procedures to ensure the integrity of the scientific process within the agency;
- (c) When scientific or technological information is considered in policy decisions, the information should be subject to well-established scientific processes, including peer review where appropriate, and each agency should appropriately and accurately reflect that information in complying with and applying relevant statutory standards;
- (d) Except for information that is properly restricted from disclosure under procedures established in accordance with statute, regulation, Executive Order, or Presidential Memorandum, each agency should make available to the public the scientific or technological findings or conclusions considered or relied on in policy decisions;
- (e) Each agency should have in place procedures to identify and address instances in which the scientific process or the integrity of scientific and technological information may be compromised; and
- (f) Each agency should adopt such additional procedures, including any appropriate whistleblower protections, as are necessary to ensure the integrity of scientific and technological information and processes on which the agency relies in its decision-making or otherwise uses or prepares.”

9-19 March In South Korea, there is the annual US-South Korean combined military training exercise, which includes WMD response operations by specialist units. During exercise ‘Key Resolve’ – and the combined field-training exercise ‘Foal Eagle’ – the Combined Joint Task Force for the Elimination of WMD responds to a simulated WMD attack on South Korea and other nations. The Combined Force comprises the US Joint Task Force for the Elimination of WMD and the South Korean Nuclear, Biological and Chemical Defense Command. According to head of the Combined Force Brigadier General Jeffrey J Snow, the exercise provides “an excellent opportunity for the US and [South Korea] WMD elimination forces to share CBRNE tactics, techniques and procedures”. [See also 23-24 Jun 08]

10 March In the US Senate, the Armed Services Committee convenes for a meeting on the current and future worldwide threats to the national security of the USA. Testifying before the committee, Defence Intelligence Agency Director Michael Maples says: “Al Qa’eda continues efforts to acquire chemical, biological, radiological or nuclear materials and would not hesitate to use such weapons if the group develops sufficient capabilities.” With regards to Syria, he says: “Based on the duration of Syria’s long-standing biological warfare program, we judge some elements of the program may have advanced beyond the research and development stage and may be capable of limited agent production... Syria is not known to have successfully weaponized biological agents in an effective delivery system, but it possesses a number of conventional and chemical weapon systems that could easily be modified for biological agent delivery.” In his testimony Director of National Intelligence Dennis C Blair says: “We assess countries that are still pursuing WMD programs will

continue to try to improve their capabilities and level of self-sufficiency over the next decade. Nuclear, chemical, and/or biological weapons or the production technologies and materials necessary to produce them may also be acquired by states that do not now have such programs; and/or by terrorist or insurgent organizations; and by criminal organizations, acting alone or through middlemen... Over the coming years, we will continue to face a substantial threat, including in the US Homeland, from terrorists attempting to acquire biological, chemical, and possibly nuclear weapons and use them to conduct large-scale attacks... [T]errorists who are determined to develop CBRN capabilities will have increasing opportunities to do so, owing to the spread of relevant technological knowledge and the ability to work with CBRN materials and designs in safehavens... Most terrorist groups that have shown some interest, intent, or capability to conduct CBRN attacks have pursued only limited, technically simple approaches that have not yet caused large numbers of casualties... In particular, we assess the terrorist use of biological agents represents a growing threat as the barriers to obtaining many suitable starter cultures are eroding and open source technical literature and basic laboratory equipment can facilitate production. Terrorist chemical attacks also represent a substantial threat. Small-scale chemical attacks using industrial toxins have been the most frequent type of CBRN attack to date... Al-Qa'ida is the terrorist group that historically has sought the broadest range of CBRN attack capabilities, and we assess that it would use any CBRN capability it acquires in an anti-US attack, preferably against the Homeland. There also is a threat of biological or chemical attacks in the US Homeland by lone individuals." [See also 12 Feb]

10-11 March At OPCW headquarters, there is a training course on project management and evaluation, which is held in the context of the continuing work by the International Cooperation and Assistance Division of the Secretariat on the possible upgrading of the assessment and evaluation of its programmes.

11 March In Iraq, Ali Hassan al-Majid, also known as 'Chemical Ali', is sentenced to fifteen years imprisonment for aiding and abetting the execution of forty-two people in 1992 over alleged business abuses. Al-Majid has previously been sentenced to three death sentences, one of which related to his ordering the use of chemical weapons against Iraq's Kurdish population during Operation Anfal [see 24 Jun 07]. The other two related to the crushing of a Shiite uprising in 1991 [see 2 Dec 08] and the killing in 1999 of Grand Ayatollah Mohammed Sadeq al-Sadr. [See also 26 Jan]

Six days later, the office of the government spokesman announces that the government is seeking approval to carry out the executions of al-Majid and other convicted members of the former government. A statement by the office reads thus: "The Cabinet is calling on the [three member] presidential council to respond to Iraqi people's will and ratify all death sentences against the criminals." Last year, with regard to the Operation Anfal case, the presidential council approved the execution of al-Majid, but refused to approve the death sentences of former defence minister Hashim Ahmad al-Tai and former armed forces deputy operations director Hussein Rashid Mohammed [see 29 Feb 08]. Previously, it had refused to approve the executions of the three, following Sunni objections that al-Tai and Mohammed had only followed the orders of Saddam Hussein under duress [see 4 Sep 07]. However, Iraqi Prime Minister al-Maliki subsequently said he would not approve the execution of Majid unless the Council also endorsed the executions of al-Tai and Mohammed [see 29 Feb 08].

11 March The Tel Aviv District Court refuses a request by Israeli businessman Nahum Manbar for a hearing to consider his early release, after upholding an earlier decision by the parole board rejecting such a move on the grounds that Manbar remains a threat to Israeli national security [see 28 Aug 07]. Manbar had requested that his sentence of sixteen years imprisonment be reduced by a third for good behaviour. To reinforce his claim, Manbar's lawyers submitted three new opinions, including psychological evaluations. However, the court says "there is nothing in the new opinions submitted to cause us to change the parole board's ruling". Manbar was convicted of, amongst other things, selling military equipment to Iran, which included equipment and information intended for use in building a mustard and nerve gas factory [see 17 Jun 98]. He was subsequently sentenced to sixteen years imprisonment [see 15 Jul 98].

11 March Libyan officials have complained that the USA has failed to deliver on its side of the bargain following Libya's agreement to abandon its weapons of mass destruction programmes [see 19 Dec 03], so reports *The New York Times*. In return, Libya reportedly wants access to civilian nuclear technology, conventional weapons and support for destroying its stockpile of chemical weapons. Libyan Ambassador to the United Nations Abdelrahman Shalgham is quoted by the *Times* as saying: "We gave some devices, some centrifuges, for example for America, but what do you give us? Nothing... That's why we think North Korea and Iran are hesitating now to have a breakthrough regarding their projects." However, an unidentified "high-level" official of the US administrations is quoted as saying that Libyan officials "were being unrealistic in their expectation for how quickly the relationship could improve". The official adds: "[If the] Libyans carry on with good behavior, I think the possibilities for civilian nuclear cooperation will improve." In such case, says the official, Libya might reasonably expect more technology sharing and chemical weapons destruction help. [See also 8 Jun 07]

11 March The UK House of Lords European Union Committee releases *Civil Protection and Crisis Management in the European Union*, which analyses crisis management in the European Union. Amongst other things, the report criticises the failure of the UK to participate fully in international exercises designed to test preparedness for CBRN attacks. It states that between 2000 and 2008 the UK has been involved to some extent in only 11 of 31 EU or NATO CBRN exercises and that it did not deploy teams in any of the NATO exercises, and only one in the EU exercises. The report describes the current rate of UK participation as "unacceptably low", and calls for it to play a full part in all future major exercises. Separately, the Committee points out that the roles of EU Monitoring and Information Centre and NATO's Euro-Atlantic Disaster Response and Coordination Centre are similar, but there is practically no contact between them. Therefore, the Committee says it would be in the interests of the EU, NATO and the members of both organizations to support and complement each other's work rather than duplicating it. It adds that in the event of a serious natural or man-made disaster, the failure of the two bodies to cooperate could have serious consequences.

11 March US President Barack Obama signs a \$410 billion bill to fund various government operations through the remainder of the fiscal year, which amongst other things includes funding for pandemic preparedness. The Center for Infectious Disease Research and Policy quotes Richard Hamburg, government affairs director for Trust for America's

Health, as saying that the bill includes more than \$700 million in pandemic spending that former President George Bush had sought for the Department of Health and Human Services (DHHS), however, none of this is for state and local public health agencies. Hamburg says that the bill additionally provides \$467 million for vaccine production operations; \$40 million for medical countermeasures for DHHS personnel and its contractors; \$648.7 million for the Food and Drug Administration for food safety efforts, which represents a \$141 million increase from the 2008 level; and \$971.5 million for the Department of Agriculture's Food Safety and Inspection Service, which represents an increase of \$41 million over last year's amount.

11 March US Defence Secretary Robert Gates says that as a result of the failure by the USA to find weapons of mass destruction in Iraq, or to anticipate the counter-insurgency, stricter criteria would need to be met on the threat faced and intelligence used before the USA could consider launching any future pre-emptive strike. Talking to Public Broadcasting Service, Gates says: "One of the biggest lessons learned in this is, if you are going to contemplate pre-empting an attack, you had better be very confident of the intelligence that you have." He adds: "The lessons learned with the failure to find the weapons of mass destruction and some of the other things that happened will make any future president very, very cautious about launching that kind of conflict or relying on intelligence... [Future presidents are going to] ask a lot of very hard questions and I think that hurdle is much higher today than it was six or seven years ago... I think that the barrier, first of all, will be 'are we going to be attacked here at home?'"

12 March Iraq submits to the OPCW its initial declaration of its stockpile of chemical weapons [see also 13 Jan]. In his statement to the fifty-sixth meeting of the OPCW Executive Council six weeks later, Director-General Rogelio Pflirter says: "Iraq [...] has declared two bunkers with filled and unfilled chemical weapons munitions, some precursors, as well as five former chemical weapons production facilities (CWPFs). The Secretariat is now analysing this declaration and continuing its work with Iraqi representatives on certain issues related to it." In a subsequent interview with Global Security Newswire, OPCW spokesman Michael Luhan says the declaration contained no surprises and refers to the fact that production facilities were "put out of commission" by air-strikes during the 1991 conflict and that thereafter UNSCOM dealt with the chemical munitions in the bunkers. "These are legacy weapons, remnants", he says. Luhan declines to discuss the quantity and type of weapons stored in the bunkers, though according to Global Security Newswire they "are not believed to be in a usable state".

12 March In Moscow, during a meeting with the OPCW Director-General Rogelio Pflirter, Chairman of the Russian State Commission for Chemical Disarmament Grigoriy Rapota says that "Russia would fulfil all its [chemdemil] obligations under the [CWC] by the end of April 2012". He adds, that "according to the plan for the destruction of chemical weapons, by the end of 2009 about 45 per cent of [the stockpile of] all toxic chemical agents would be destroyed in Russia". [See also 26 Feb]

12 March In Lebanon, the Arab Islamic Resistance completes a three-day military exercise, which included intensive training on protection from chemical and biological weapons as well as the use of new tactics and non-

conventional weapons, so reports the London-based *Elaph*. The 'Day of Judgement' exercise is reportedly the largest to have been undertaken by the group, which is affiliated to the Islamic Arabic Council in Lebanon, since its formation. The Council's Secretary-General Muhammad Ali al-Husayni is quoted as saying that the training involved elements that would surprise Israel if it thought of attacking Lebanon.

12 March The UK Cabinet Office releases copies of a series of emails between government and intelligence officials involved in drafting the dossier used by the government to justify supporting the US-led invasion of Iraq [see 20 Mar 03]. The documents, which are released following a request under the Freedom of Information Act, show that disagreements existed between the officials with regard to Iraq's chemical and biological weapons activities [see 24 Sep 02]. In one email, dated 11 September 2002, Head of the Cabinet Office Defence Secretariat Desmond Bowen wrote to Head of the Joint Intelligence Committee John Scarlett: "You will clearly want to be as firm and authoritative as you can be. You will clearly need to judge the extent to which you need to hedge your judgments with, for example, 'it is almost certain' and similar caveats... I appreciate that this can increase the authenticity of the document in terms of it being a proper assessment, but that needs to be weighed against the use that will be made by the opponents of action who will add up the judgments on which we do not have absolute clarity." In an apparent acknowledgement that there was no "imminent danger" of Iraq attacking the UK with weapons of mass destruction, Bowen goes on to say: "The question we have to have in the back of our mind is: 'Why now?' I think we have moved away from promoting the ideas that we are in imminent danger of attack and... intend to act in pre-emptive self-defence." He argues instead that the government should stress Iraq's disregard for international law and its continuing desire to acquire WMD. In another email, dated 16 September 2002, an intelligence official whose name has been erased, suggests the draft dossier included exaggerated claims. It says: "I note that the paper suggests that Saddam's biotech efforts have gone much further than we ever feared... '[Iraq] has assembled specialists to work on its nuclear programme' – Dr Frankenstein I presume? Sorry." The official goes on to say that he agreed with another unidentified official's proposed changes to the text, but adds: "[W]e have suggested moderating the same language in much the same way on drafts from the dim and distant past without success... Feel free to try again!" In another email, an unidentified intelligence official says that a section of the dossier on chemical and biological weapons would be "likely to give a misleading impression". In yet another email, an unnamed intelligence official says: "[T]here is nothing we can point to that we know for sure is going to the BW programme." [See also 18 Feb 08 and 27 Jan]

12 March In the US Senate, there is a public educational briefing on *Security in Biological Research: Current Oversight of High-Containment Laboratories*. During the meeting, three speakers – representing academia, government contracting and the pharmaceutical industry – describe their experiences with federal regulations affecting laboratories, pathogens and scientific personnel. The event is co-hosted by the Center for Science, Technology and Security Policy, American Association for the Advancement of Science and the Center for Biosecurity, University of Pittsburgh Medical Center.

13 March The US Centers for Disease Control and Prevention releases updated versions of basic questions and

answers for the general public relating to the smallpox vaccine. The questions and answers cover: pre-event smallpox vaccination, post-event smallpox vaccination, smallpox vaccination while pregnant or breastfeeding, smallpox contraindications and screening, and smallpox vaccine storage and distribution.

16 March India completes the destruction of its entire known stockpile of chemical weapons, thereby becoming the third CWC party to do so [see 11 Jul 07 and 10 Jul 08].

Ten days later, India notifies the OPCW Technical Secretariat thereof. Announcing the development three weeks later during the fifty-sixth meeting of the OPCW Executive Council, OPCW Director-General Rogelio Pflirter says: "I wish to sincerely, warmly, and emphatically congratulate India on this laudable achievement, which is the result of a consistent and unwavering commitment shown by India since entry into force of the convention. This attainment further strengthens the convention as an effective instrument for promoting the objectives of peace and security." [See also 31 Jan]

16 March In Berlin, German Research Minister Annette Schavan and US Homeland Security Secretary Janet Napolitano sign a treaty on scientific and technological cooperation in the field of civil security under which between EUR 10 million and EUR 20 million will be made available until 2012. The areas of cooperation, according to the Hamburg *Der Spiegel*, are understanding, prevention and detection of threats to civil security; forensic science; protection of critical infrastructure and key resources; and crisis response, 'consequence management' and damage control in the event of serious incidents. The treaty provides for exchanges of staff and technologies as well as the development of common standards and priorities.

16 March In Brussels, there is workshop on *War Remnants and Pollution at Sea*, which is organized by the European Parliament's Foreign Affairs Subcommittee on Security and Defence. The workshop includes presentations by John Hart of SIPRI on the political and technical challenges posed by sea-dumped chemical and conventional weapons in the Baltic Sea, and by Jeffrey Osborne of the Verification Division, OPCW on the difficulty of monitoring dumped chemical weapons owing to the fact that under the CWC there are no requirements for parties to declare weapons which were buried before 1977 or which were dumped before 1985.

16 March At UN headquarters in New York, there is a commemoration of the chemical attack of Halabja [see 18 Mar 88] on the occasion of its 21st anniversary. The Iraqi Ambassador to the United Nations, Hamid al-Bayati, says: "I will call on the international community, especially the UN, to commemorate this day every year to make it the day of genocide, the day of chemical weapons used against the people of Kurdistan – and to remind the world every year that such kind of attack by chemical and other kind of gases should be studied to see the effect of these kind of weapons." Among other speakers is Qubad Talabani, the US representative for the Kurdistan Regional Government.

16 March US Director of National Laboratories, Department of Homeland Security (DHS) Jamie Johnson says that DHS has increased its estimate of the costs for constructing the National Bio- and Agro- Defense facility in Manhattan, Kansas from \$450 million to between \$650 million and \$725 million [see 5 Dec 08]. The *Kansas City Business*

Journal quotes Johnson as saying that most of the financing should come from the sale of the facility at Plum Island.

16-20 March In Spiez, Switzerland, the fourth advanced training course on assistance and protection against chemical weapons takes place at the NBC Training Centre. The course, which is the first of its kind with a new training curriculum, is organized following an offer made by Switzerland under Article X of the CWC.

17 March Czech Commander of the 31st Liberec-based chemical warfare brigade Miroslav Knopp says a total of 105 troops from the brigade will join the KFOR mission in Kosovo next year, while others will continue operating in Kabul [see 1 Jul 08]. Speaking to CTK news agency, Knopp adds that from 2011-2012, troops from the brigade will again take command of the CBRN defence battalion, established by NATO six years ago [see 3 Dec 03].

17 March The US Food and Drug Administration (FDA) announces the completion of a "proof-of-concept" study using nanoparticles, which react to an antigen produced by anthrax bacteria, to speedily and accurately detect the presence of anthrax. In a press release, FDA researcher Indira Hewlett, says: "The FDA findings could form the basis of a test that allows earlier diagnosis of anthrax infection than currently possible... The earlier those infected with anthrax can be treated, the better." The study – which appears in the March issue of *Clinical and Vaccine Immunology* – involved researchers from the FDA, the US National Institute of Allergy and Infectious Diseases, and the Laboratory of Biophysics, University of Turku, Finland.

18 March At OPCW headquarters, a meeting jointly organized by the OPCW and the United Nations Interregional Crime and Justice Research Institute (UNICRI) takes place on the subject of 'Multilateral Approaches to Non-Proliferation: The Chemical Dimension'. Attending are delegations from CWC parties and representatives from a number of international and regional organizations, including the European Commission, IAEA, EUROPOL and the Southeast European Cooperative Initiative (SECI) Center. The meeting – which is opened by OPCW Director-General Rogelio Pflirter and UNICRI Director Sandro Calvani – includes presentations on the role of the OPCW in the field of the illicit trafficking of chemical material, and a visit to port facilities in Rotterdam to familiarize participants with regard to effective counter-measures for preventing illicit trafficking of CBRN material. In addition, UNICRI gives a presentation on a new portal to be used primarily by national and international experts to communicate their priorities and update their knowledge in the area of CBRN trafficking.

19 March In the UK House of Commons, the Public Administration Select Committee, in its ongoing inquiry on *Leaks and Whistleblowing in Whitehall*, hears testimony from a number of former civil servants on the different actions when faced with a situation they believed to be wrong. Among those testifying is Dr Brian Jones, the former head of the Defence Intelligence Staff's Scientific and Technical Directorate, and Carne Ross, a former British diplomat who voiced concerns that claims in the UK government's dossier were inaccurate [see 14 Dec 06]. Jones says that he "thought the intelligence services were going to be crucified" given the difference between the foreword by the Prime Minister and the contents of the government's dossier on Iraq's alleged WMD pro-

grammes [see 24 Sep 02], however, he instead found that most members of parliament supported the government. "I feel that you gentlemen [members of parliament] have been either deliberately or accidentally misled and these incidents have not been followed up. I think that there has been a great deal of laxity and that won't encourage people like me or my colleagues to come to you."

20 March Indonesian Health Minister Siti Fadillah Supari says that medical institutions in Indonesia should undertake virus and DNA research without foreign funding so as to avoid the possibility of a future biological attack against it. "I'm truly afraid the world will use our viruses or DNAs to create a mass biological weapon that may be used to attack us", she says. Supari also says that children should no longer be vaccinated against meningitis, mumps and some other diseases. She says she wants "scientific proof" that shots for illnesses like pneumonia, chicken pox, the flu, rubella and typhoid were "beneficial" otherwise "they have to be stopped" as Indonesia should not be used as a "testing place for drugs, as has been the case in Africa". Supari says she will, however, continue to advocate immunizations against measles, polio, tetanus, hepatitis B. [See also 6 Feb 08]

20 March Cambodia approves a draft law prohibiting the production, recycling, receiving, transferring, storing, transportation and use of chemical, biological and radioactive materials that can be used to manufacture weapons of mass destruction. A statement issued by the Council of Ministers, Cambodia's Cabinet, states: "The draft law will help guarantee security, public orders, environment protection and welfare of our people, and also contribute to protecting security and peace in the region and in the whole world." [See also 19 Jul 05 and 12 Sep 07]

23 March In Fort Detrick, Maryland, in a few days time the Army will commence capping a number of abandoned munitions dump sites, including unlined trenches where waste from the Army's biological warfare programme was dumped during the 1940s to the 1960s. According to the Associated Press, around 100,000 tons of soil will, over the next eight weeks, be transported to construct impermeable caps over the sites.

23-27 March In Paris, the seventh [see 23-31 Oct 07] basic course for personnel of national authorities involved in the implementation of the CWC takes place at the Training Centre for the Prohibition of Chemical Weapons (CEFFIAC). Participating in the course, which is jointly organized by the French national authority and the OPCW, are twenty-five representatives from the following twenty-six CWC parties: Afghanistan, Azerbaijan, Bangladesh, Belgium, Benin, Cameroon, Chile, Cuba, Djibouti, Ecuador, France, Gabon, Georgia, Ireland, Kyrgyzstan, Lebanon, Morocco, Senegal, Serbia, Sierra Leone, Trinidad and Tobago, Tunisia, Ukraine, Uzbekistan, the Netherlands and Turkey. The course offers proficiency training to personnel of national authorities to help them appreciate the obligations of national authorities under the CWC and with regard to the national implementation action plan [see 20-24 Oct 03].

24 March The Tokyo District Court sentences four former business executives to suspended prison sentences after they were found guilty of defrauding the government of \$3 million by misusing government funds assigned for the chemdemil of chemical weapons abandoned in China by the

Japanese Imperial Army [see 23 Apr 08]. Presiding Judge Toshihiko Sonohara says the four – former Pacific Consultants International (PCI) president Masayoshi Taga, former PCI executives Tsutomu Kurihara and Nobuo Kuga and Hiroyuki Endo, a former head of a PCI branch – would not be sent to prison because they had already paid compensation equal to the amount of the fraud.

24 March In the UK House of Commons, Prime Minister Gordon Brown and Home Secretary Jacqui Smith release *Pursue Prevent Protect Prepare: The United Kingdom's Strategy for Countering International Terrorism*. The 174-page document updates the government's Counter-Terrorism Strategy (CONTEST), which was previously updated in 2003. On the subject of weapons of mass destruction, the report says that the intelligence agencies should pay particular attention to the possibility of terrorists acquiring such weapons as in recent years the likelihood of such an occurrence has increased. The report states: "Contemporary terrorist organizations aspire to use chemical, biological, radiological and even nuclear weapons... Changing technology and the theft and smuggling of [WMD] materials make this aspiration more realistic than it may have been in the recent past." To combat the threat, the strategy recommends four policy goals: pursuing terrorists before they can attack, preventing people from becoming or supporting terrorists, protecting against possible attacks, and preparing for handling an event should one occur. The document states that groups such as al-Qaeda had always aspired to use CBRN materials in an attack, however, a number of factors have now "increased the risk" that such weapons might be so deployed. It says that al-Qaeda was the first international terrorist organization that tried to acquire such materials and it has shown some progress in doing so. The report cites how, in 2003, al-Qaeda had developed a device to produce hydrogen cyanide gas, intended for use in crowded urban spaces [see 18 Jun 06], and how in 2007 al-Qaeda in Iraq deployed explosive devices using chlorine gas cylinders [see 17 Mar 07 and also 29 May 07]. The document identifies three other factors as increasing the likelihood that terrorists could acquire CBRN with a view to launching an attack on the UK. Firstly, it says there has been "a significant increase", since the end of the Cold War, in the trafficking of material that could be used in radiological weapons as well as potentially in nuclear weapons. Secondly, since 1993, the IAEA has recorded more than 1,300 incidents of transactions involving nuclear or radioactive materials. Thirdly, the Internet has made information widely available on the technology of CBRN devices and the materials that could be used to develop them. In her statement to Parliament, Smith says that countering terrorism would involve training tens of thousands of citizens to look out for potential terrorist activities and to react appropriately to an attack. She says that "terrorists will try to stay one step ahead of us" and that counter-terrorism was "no longer something you can do behind closed doors and in secret". Asked whether there was now a greater threat of a CBRN attack than five years ago, Smith says: "There is the potential, given the international situation, what we believe to be the aspirations of some international terrorists, that it could be." She adds: "Failed states, conflict, technology – both in terms of the ability to use materials and the ability to learn about how materials are used – contribute to our concern about that as a threat, including what we know about what terrorists may have previously planned to do and may be planning to do."

24 March In the UK House of Lords, the findings of *Gulf War Illness and the Health of Gulf War Veterans*, which

is the latest report from the US Research Advisory Committee on Gulf War Illnesses [see 17 Nov 08], are presented at a symposium facilitated by Lord Morris of Manchester [see 17 Nov 04], honorary parliamentary adviser to The Royal British Legion, and by the Society of Chemical Industry (SCI). The presentations are by members of the Advisory Committee — James Binns (Committee chair), Dr Lea Steele (outgoing scientific director) of Kansas State University, Dr Roberta White (incoming scientific director) of the Boston University School of Public Health, and Dr Robert Haley of the University of Texas South Western Medical Center. The opening address is by Lord Morris, who reviews the slender and now outdated efforts of the UK Ministry of Defence (MoD) to investigate Gulf War illnesses, noting also the failure of MoD thus far to comment on the Committee's report. After discussion of the presentations, the closing address is by Marshal of the Royal Air Force Lord Craig of Radley, who commends the report, the speakers and the organizers of the symposium while deploring the absence of MoD participation. [Note: questioned later, ministers denied having received the invitations to the symposium that the SCI had conveyed to them.] However, Lord Craig states that an "external reference group" (ERG) has now been established to monitor the new arrangements involving MoD and other government departments that are being introduced for the longer-term care and support of veterans and their families in Britain. The ERG is to report annually to the Prime Minister and the Defence Secretary.

24 March The *British Medical Journal* publishes the main findings of two studies assessing whether the risks of cancer or mortality are higher in UK military personnel who participated in tests of chemical warfare agents over several decades at Porton Down compared with those who did not. The findings result from a study that the Ministry of Defence commissioned the Medical Research Council to undertake in 2003 and which was completed in 2007 [see also 17 Jul 06]. The first study analyses military personnel records and national death records and cancer records held at Porton Down of 18,276 male service members who participated at least once between 1941 and 1989 in experimental research related to chemical warfare agents at Porton Down. The authors of the study found that Porton Down veterans suffered a 6 per cent higher rate of death compared with a control group of 17,600 similar veterans — followed-up to 31 December 2004 — who had not taken part in the tests. However, while mortality was "slightly higher" in the Porton Down veterans, it was "not possible to attribute the small excess mortality to chemical exposures" since the studies lacked lifestyle information such as whether the subjects had smoked or served overseas. In the second study, the researchers used the same records to determine cancer morbidity in members of the armed forces who took part in tests between 1941 and 1989, excluding those known to have died or whose records had been lost prior to 1 January 1971, when the UK cancer registration system commenced. In total, the authors analysed 17,013 male service members who participated in test and a control group of 16,520 veterans — followed-up to 31 December 2004 — men who did not take part in the tests. The authors concluded that overall cancer morbidity in Porton Down veterans is no different from that in non-veterans.

Six days later, in the UK House of Commons, Parliamentary Under-Secretary of State for Defence Kevan Jones says he welcomes the publication of the findings, which "fulfil the commitment made by [the] Government to investigate whether the long-term health of Porton Down veterans was degraded by their participation in the tests". [See also 26 Mar 08]

24 March In the USA, the RAND Corporation releases *Initial Evaluation of the Cities Readiness Initiative*. The authors of the study say that the Cities Readiness Initiative — which was launched by the Centers for Disease Control and Prevention (CDC) in 2004 to assist jurisdictions in improving their ability to provide antibiotics and other medications in the event of a large-scale bioterrorist attack or naturally occurring disease outbreak — has helped increase the number of local public health staff members working on medication dispensing planning, strengthened partnerships between public health officials and local first-responder agencies, and has helped pay for new equipment such as mobile drug dispensing units. The authors encourage the CDC to extend the programme and to re-evaluate it in two to three years. They point out that under the programme around \$300 million has been spent in 72 metropolitan areas since the beginning of 2004. [See also 9 Dec 08]

25 March In Zhejiang Province, China, the Yiwu municipal civil administration approves the establishment of a society by a group of Chinese individuals who claim to have been victims of Japanese biological weapons experiments during the Second World War. The purpose of the society, according to Xinhua news agency, is to investigate cases of biological warfare and to generally support victims. [See also 9 May 07]

25 March The Israeli High Court of Justice clears for publication a report by a committee of the Israel Medical Association (IMA), which concludes that anthrax vaccine experiments conducted on Israel Defense Force (IDF) soldiers over a seven-year period from the early 1990s were "unnecessary" and that the subjects were not adequately warned of the risk [see 19 Jan]. In total, 716 soldiers from a pool of 4,000 participated in the experiment, nicknamed 'Omer 2', which was conducted by the IDF Medical Corps and the Ness Ziona Biological Institute. *Haaretz* quotes the report — of which some central paragraphs have been removed on grounds of national security — as saying: "No scientific justification was found for the experiment, scientific background was lacking, the experiment's design and execution did not suit its goals, and no result would have justified those goals. Also, conventional guidelines were not followed, risks and possible side effects were not thoroughly investigated, and a follow-up mechanism to keep track of participating soldiers was not set up." The report also states that even while the experiment was taking place "an accelerated effort to produce large quantities of the vaccine was underway a year prior to the experiment, and by the time the experiments were launched, Israel had enough vaccines to cover the civilian concerns". This, the committee says, raised the concern that the experiments were unnecessary. The report also states that the experiments did not follow the guidelines of the 1975 Helsinki Convention on Human Medical Experimentation Accords. Five weeks previously, the Court had again deferred a decision on whether to allow the publication of the report. Justice Asher Gronis, who headed the three-judge panel, had said that on reading the report he did not think that its publication would prejudice national security, though the Defense Ministry may have had legitimate reason for objecting thereto. Among the documents submitted to the court is a joint statement issued three weeks previously by the Defense Ministry, Health Ministry and IDF in which they said they took "full responsibility" for all side effects suffered by participants in the experiment. The statement adds: "Thanks to Omer 2, Israel has a medical response for the general public against a most severe threat."

The next day, the *Jerusalem Post* quotes the Defense Ministry as saying that every effort was made to conduct the experiments in “a transparent manner” notwithstanding the lack of civilian medical supervision required by the Helsinki Convention. The Ministry adds that “it would not oppose calls” by soldiers to set up a governmental committee of inquiry to further investigate the issue.

The IMA – which comprises doctors, a legal advisor, and a scientist from the Weizmann Institute of Science – was established on the recommendation of the IMA ethics committee and approved by the IDF Medical Corps.

25 March Israel “deliberately or recklessly” used white phosphorus shells in violation of the laws of war, causing “needless civilian deaths” during its recent operations in Gaza [see 4 Dec 08], according to a report released by Human Rights Watch. The 71-page report entitled *Rain of Fire: Israel’s Unlawful Use of White Phosphorus in Gaza*, is based on witness accounts of use of the shells, as well as ballistics evidence and official Israeli documents. The report concludes that the Israeli military “repeatedly exploded white phosphorus munitions in the air over populated areas, killing and injuring civilians and damaging civilian structures, including a school, a market, a humanitarian aid warehouse and a hospital”. Following publication of the report, *The (London) Guardian* quotes the Israeli military as saying in a statement: “Based on the findings at this stage it is already possible to conclude that the [Israel Defense Force] IDF’s use of smoke shells was in accordance with international law... These shells were used for specific operational needs only and in accord with international humanitarian law. The claim that smoke shells were used indiscriminately, or to threaten the civilian population, is baseless.”

The previous day, Israeli government spokesman Mark Regev rejected as “one-sided” a report by United Nations special rapporteur on the Palestinian territories Richard Falk criticizing Israel’s three-week offensive in Gaza. In the report, Falk said that if Israeli forces were unable to differentiate between civilian and military targets then “launching the attacks is inherently unlawful, and would seem to constitute a war crime of the greatest magnitude under international law”. Pointing out that the attacks were carried out in densely populated areas, he said: “On the basis of the preliminary evidence available, there is reason to reach this conclusion.”

25 March At OPCW headquarters, the Open-Ended Working Group on Terrorism convenes for a meeting [see also 10 Jul 08]. The guest speakers are Abdulrahman Alhadlaq of the Saudi Arabian Interior Ministry and Mohamed Almatrafi, Secretary of the Saudi Arabian CWC national authority. The Group was established by the Executive Council decision at its 27th session with a view to examining the contribution of the OPCW to global anti-terrorism efforts.

25 March In the UK House of Commons, Foreign Secretary David Miliband announces that the government is to establish an official inquiry into the Iraq War, which will include a review of the run-up to the conflict. The committee will commence its proceedings soon after the majority of UK forces return from service in Iraq this summer. Miliband says the inquiry would include a “comprehensive look at the planning and the conduct of the war as well as the conduct of the peace-building afterwards”. Though he does not give specific details regarding the nature of the inquiry, he refers to the “advantage” of having one conducted along the lines of the Franks inquiry set up after the Falklands War, which was held in private by privy counsellors. “The fact that it was conducted

in private meant that it had access to all the relevant papers,” says Miliband. According to *The (London) Guardian*, there are currently around 4,100 UK troops still based in Iraq, who will begin to be withdrawn at the end of May. By 31st July fewer than 400 troops are expected to remain.

Eleven weeks later, in the House Commons, Prime Minister Gordon Brown makes the following statement: “I am today announcing the establishment of an independent, privy-counsellor Committee of Inquiry. It will consider the period from summer 2001 before military operations began in March 2003, and our subsequent involvement in Iraq until the end of July this year... The inquiry will, I stress, be fully independent of government... The scope of the inquiry is unprecedented – covering an eight year period, including the run-up to the conflict and the full period of conflict and reconstruction... The Committee of Inquiry will have access to the fullest range of information, including secret information. In other words their investigation can range across all papers all documents and all material. So the inquiry can ask for any British document to come before it and any British citizen to appear. No British document and no British witness will be beyond the scope of the inquiry... And I have asked the members of the inquiry that the final report of the inquiry will be able to disclose all but the most sensitive information, that is, all information except that which is essential to our national security... The inquiry will receive the full co-operation of the Government – with access to all Government papers and the ability to call any witnesses – with the objective to learn the lessons from the events surrounding the conflict... Taking into account national security considerations [...] evidence will be heard in private. In this way also evidence given by serving and former ministers, military officers and officials will, I believe, be as full and candid as possible... The inquiry will take into account evidence submitted to previous inquiries [see 28 Jan 04 and 14 Jul 04]... I can announce today that the Committee of Inquiry will be chaired by Sir John Chilcot and include: Baroness Usha Prashar, Sir Roderick Lyne, Sir Lawrence Freedman; and Sir Martin Gilbert... [T]he committee will start work as soon as possible after the end of July, and given the complexity of the issues it will address, I am advised it will take one year... As I have made clear, the primary objective of the committee will be to identify lessons learned. The committee will not set out to apportion blame or consider issues of civil or criminal liability.” Days later, in a letter to Brown, Chilcot says: “I believe it will be essential to hold as much of the proceedings of the inquiry as possible in public, consistent with the need to protect national security and to ensure and enable complete candour in the oral and written evidence from witnesses.” BBC News Online quotes Brown as responding to Chilcot thus: “I believe your proposals will manage to meet both the need not to compromise national security but also enable the independent inquiry also to hold public sessions helping to build public confidence.”

25 March The US Department of the Army releases *The United States Army Concept Capability Plan for Combating Weapons of Mass Destruction for the Future Modular Force 2015-2024*. The document, which is meant as a “reference guide”, sets out the capabilities required for the future Modular Force to effectively implement the National Military Strategy to Combat WMD from 2015 through 2024. To this end, it provides a conceptual framework to guide the conduct of Army tactical and operational missions charged with combating WMD in future joint operating environments and identifies the capabilities required to implement the concept with regard to doctrine; organization; training; materiel; leadership and education; personnel; and facilities. The document is not

intended to serve as “the enduring and final Army input to future revisions of the various joint capabilities based assessments dealing with WMD, but is meant to provide a common starting point and context for Army staff officers providing input to future joint combating WMD efforts”.

26 March The US Department of Health and Human Services Office of the Inspector-General releases a report which, amongst other things, says that poor record keeping by food companies could threaten the ability of investigators to identify the source of illnesses arising from accidental or intentional contamination of food. In the report, Inspector-General Daniel R Levinson says that whilst companies are legally obliged to maintain detailed records of food supplies, investigations revealed that only five of forty foods – including eggs, oatmeal and fruit juice – could be fully traced through the supply chain to their original source. The report also says that 70 out of 118 food facilities did not meet the record keeping requirements of the Food and Drug Administration (FDA) with regard to information on suppliers, shippers and customers. The report recommends that the FDA should consider seeking stronger legal powers to improve the traceability of food.

26-27 March In The Hague, there is a seminar on ‘Effective Implementation of the Chemical Weapons Convention as a Contribution towards the Implementation of United Nations Security Council Resolution 1540 [see 28 Apr 04]’ at the Netherlands Institute of International Relations Clingendael. The event aims to demonstrate how effective implementation of the CWC contributes directly towards fulfilling the obligations enunciated under resolution 1540 with respect to chemical weapons.

27 March The Dominican Republic deposits its instrument of ratification of the CWC with the UN Secretary-General. In thirty days, it will become the 187th [see 13 Jan] party to the Convention. An OPCW press release states that following ratification by the Dominican Republic only the following eight states remain outside the Convention: Angola, the Bahamas [see 25 Feb], Egypt, Israel, North Korea, Myanmar, Somalia and Syria.

27 March In Washington DC, the US Court of Appeals for the District of Columbia Circuit upholds a decision to dismiss a \$50 million claim for compensation brought against the government for the destruction of a Sudanese pharmaceutical plant in 1998 on the grounds that it was associated with the al-Qaeda and was manufacturing an essential ingredient used to produce a nerve gas [see 20 Aug 98]. According to the Paris *Sudan Tribune*, the court rules that the case involves reviewing a presidential decision to authorize the missile strikes, which the judiciary is prevented from doing under the US Constitution. The case was brought by the owner of the plant, Salah Idriss, who disputed claims by the Clinton administration that the plant was owned by the Sudan Military Industrial Complex Corporation which did not manufacture commercial products and was instead involved in the production of chemical weapons. [See also 11 Feb 01]

27 March In the USA, further civil-society recommendations are put forward to the Obama administration on biosecurity policy [see 12-13 Jan Cato Institute, 15 Jan HSP and 15 Jan CACNP], this time by the Center for Biosecurity of the University of Pittsburgh Medical School. The recommendations are responsive to the biosecurity priorities that, on Inauguration Day, were posted on the agenda page of the White House website [see 20 Jan]. They cover

the biosecurity budget, prevention of biological weapons, biosurveillance, public health preparedness, community engagement, and the development and production of medical countermeasures.

29 March In Canada, CBC Newsworld broadcasts ‘Anthrax War’ as part of its ‘The Passionate Eye’ series. Amongst other things, the documentary, which is directed and co-written by filmmaker Bob Coen, analyses the history of biological weapons and programmes, and the role of public and private laboratories undertaking biological weapons research. On his travels, Coen interviews former head of the South African biological weapons programme Wouter Basson [see 12 Aug 08] and investigates the deaths of some of scientists who had once worked with anthrax, including Dr David Kelly [see 14 Mar 08] and Dr Bruce Ivins [see 6 Mar]. Coen says he was prompted to make the documentary following the anthrax letter attacks [see 15 Oct 01]. It took him seven years to complete.

30 March In Valletta, Malta, Charles Savona Ventura gives a lecture on the medical aspects of the Great Siege of Malta in 1565, in which he refers to the Knights of Malta and the Maltese using biological warfare in their resistance fight against the Ottoman Turks. He says that prior to the Siege, Jean Parisot de la Valette, the Grand Master of the Knights of Malta and leader in the resistance campaign, ordered that all wells and cisterns in the countryside, as well as the springs at Marsa, be poisoned. The contaminants used included hemp. By 27 May 1865, ten days after the Siege began, many Turks at Marsa had fallen ill with dysentery. The lecture, which takes place at the Maltese Foreign Ministry, is part of a series of lectures given once a month by various speakers to members of the Malta Historical Society and the general public on different aspects of the Great Siege.

30 March The US Department of Justice announces that a Yemeni doctor, whom the Bush administration had at one time accused of participating in an anthrax programme for al-Qaeda, is to be released from detention at Guantanamo Bay. Ayman Saeed Abdullah Batarfi is the third detainee to be released from the camp under a review of cases instituted by President Barack Obama in preparation for its closure.

30 March-1 April At OPCW headquarters, the Scientific Advisory Board convenes for its thirteenth session. The meeting includes two briefings on the basics of nanotechnology and on principles relating thereto. The Board also discusses the review of operational requirements and technical specifications for inspection equipment.

31 March North Korea last year attempted to obtain, from Germany, gas detectors and devices for measuring and analyzing chemical compounds, amongst other things, so reports the Tokyo *Sankei Shimbun*, quoting the President of the German Federal Office for the Protection of the Constitution. In an interview with the *Sankei Shimbun*, Heinz Fromm says the North Korean embassy in Berlin made preliminary moves to obtain the equipment, however, owing to “systematic data gathering” by the BfV (German intelligence agency) on companies manufacturing equipment with potential for proliferation, the companies affected were able to nip the problem in the bud.

31 March In the UK Ministry of Defence, Defence Analytical Services and Advice releases a ‘statistical notice’ presenting summary statistics on the causes of deaths that

occurred among the UK veterans of the 1990-91 Gulf conflict for the period 1 April 1991 through 31 December 2008. The statistics are based on a review of the mortality rates of 53,409 UK Gulf veterans compared to those of a control group, the 'era cohort'. The control group consisted of 53,143 UK armed forces personnel of similar age, gender, service, regular/reservist status and rank who were in service on 1 January 1991, but who were not deployed to the Gulf. The findings include those who died while in service and those who died after they had left service. The review found that there were no statistically significant differences in the total number of deaths between the Gulf veterans and the control group, or for any of the main groups of cause of death; there were 997 deaths among the Gulf veterans as compared to 1,041 deaths in the control group, representing increases of 79 and 83 respectively since the last review in March 2008, resulting in an estimate of 1,008 deaths in the age-adjusted control group; and the 997 deaths among Gulf veterans compare with approximately 1,609 deaths which would have been expected in a similar sized cohort taken from the general population of the UK with the same age and gender profile. Presenting the statistics in the House of Commons the following day, Parliamentary Under-Secretary of State for Defence Kevan Jones says: "These statistics continue to confirm that UK veterans of the 1990-91 Gulf conflict do not suffer an excess of overall mortality compared with service personnel that did not deploy."

31 March In the USA, a federal court rejects a claim for \$12 million in compensation by a former post room worker for the Department of State who was hospitalized after handling the anthrax letter addressed to Senator Patrick Leahy [see 16 Nov 01]. David Hose, who worked as a contract supervisor, spent more than two weeks in intensive care after handling the letter at the Department's postal facility in Sterling, Virginia. District Judge Paul Friedman rules that the Virginia's Workers' Compensation Act prevents Hose from bringing the lawsuit against the government. [See also 8 Apr 02 and 2 Oct 06]

April The US Department of Defense transmits to Congress its 2009 annual report on its Joint Chemical and Biological Defense Program (CBDP). As in previous years, the report includes discussion of new threats in the chemical and biological area. The report states that from FY 2010 to 2015 CBDP will focus on developing new defensive tools such as research into active measures for chemical and biological stand-off detection, advanced materials for improved filtration and protection systems, advanced decontaminants and multi-functional smart materials for defence capabilities, and advanced decontaminants and biological pre-treatments aimed at improving readiness for existing and future threats from weapons of mass destruction. Other priorities listed in the report include biological pre-treatments and viral vaccines, animal model development, radiological counter-measures, medical chemical defence, and diagnostics and therapeutics. The report also states that the Department of Defense will continue to develop new defensive capabilities "in anticipation of the continued evolution of WMD threats and potential threats, including genetically-engineered biological pathogens and next-generation chemical agents", so as to make sure that US forces are prepared to operate in CBRN environments.

1 April In Russia, the Kambarka chemdemil facility has now destroyed its stockpile of 6.4 tonnes [sic] of lewisite stored in bulk containers, so reports ITAR-TASS news agency quoting a team of OPCW inspectors who have just completed an inspection of the facility. [See also 12 Nov 08]

1 April At OPCW headquarters, Director-General Rogelio Pflirter issues a Note on the current status of the laboratories that have been designated for the analysis of authentic samples, following the completion of the twenty-fourth [see 4 Sep 08] OPCW proficiency test. In total, nineteen laboratories from the following sixteen member states are designated: Belgium, China (2), Finland, France, Germany, India (2), Netherlands, Poland, Russia, Singapore, South Korea, Sweden, the UK and the USA (2). The Laboratory for CWC Verification, Military Institute of Chemistry and Radiometry, Poland and the Chemical Analysis Laboratory, CB Department Agency for Defence Development, South Korea are, however, temporarily suspended "having performed unsuccessfully in a proficiency test".

1 April In Utah, the Deseret chemical depot begins processing its stockpile of 4.2 inch mortars filled with HT mustard agent. A press release by the Chemical Materials Agency (CMA) states: "There are two types of mustard agent filled 4.2-inch mortars at Deseret Chemical Depot – HT mustard, which has a lower freezing point and makes up the majority of these munitions and HD, or distilled mustard." According to the Agency, the Tooele chemdemil facility is expected to complete the destruction of the HT stockpile near the end of 2009. The CMA says that "because [the depot's] HD mortars are likely to contain elevated concentrations of mercury, they will not be processed until the [facility's] new mercury filtration and capture system is operational". The system is currently being installed and is expected to be ready for testing in the autumn.

Five days later, the CMA announces that it has halted the processing of the HT-filled mortars after the discovery of higher than anticipated levels of mercury in the furnace exhaust, although the mercury emissions were within the permitted limits. It states that disposal of the mortars will resume in the autumn once the mercury filtration and capture system is operational at the Tooele facility. The facility has now resumed the destruction of mustard agent stored in bulk containers [see 1 Nov 07].

2 April In Morocco, the second largest party in the coalition government has called for damages from Spain for using chemical weapons during its offensive in the Rif region in the 1920s, so reports *Deutschen Presse-Agentur*. In a statement, Moustapha Mansouri, of the National Rally of Independents and parliamentary president, says: "It is our right to demand compensation for the victims of the Spanish chemical war... We have documents proving the horrors committed in the Rif." Eighteen months previously, a Spanish parliamentary committee considered, but ultimately rejected, a proposal to debate whether Spanish planes dropped phosgene, chloropicrin and mustard gas during the offensive [see 14 Feb 07]. [See also 22 Oct 08]

2-3 April In Casablanca, Morocco, more than 100 participants from 37 countries convene for the second [see 12-15 Nov 07] annual Biosafety and Biosecurity International Conference (BBIC) on *Healthier and More Secure Communities in the Middle East and North African Region*. The general aim of the conference is to build upon the first conference in promoting the development of a framework for a regional biosafety and biosecurity strategy in the Middle East and North African region. Issues discussed include: the development of biosafety and biosecurity strategies in the Middle East and North Africa region; the creation of biosafety and biosecurity regional training centres; the establishment of a regional biosafety association; practical measures for bringing about

national strategies for improving health security; educating and training biotechnology professionals; enhancing disease surveillance and rapid diagnostics to ensure early detection of disease outbreaks; and strengthening human and infrastructure capacities to enable more effective and immediate responses to biological incidents. The conference also establishes a committee – which will hold its first meeting in Amman in July – to examine the possibility of establishing regional biosafety and biosecurity training centres in Abu Dhabi, Jordan and Morocco, and also to develop a common code for training policy makers, company directors and safety instructors on matters relating to biosafety and biosecurity. The event is co-hosted by the Moroccan Ministry of Education, Higher Education, Training and Scientific Research and the International Council for Life Sciences, and is additionally sponsored by the Environment Agency of Abu Dhabi and the Royal Scientific Society of Jordan.

3 April In Pretoria, South Africa, the first basic analytical chemistry course in Africa concludes at Protechnik Laboratories. The course, which commenced two weeks previously, is jointly organized by the OPCW, the South African National Authority, Protechnik Laboratories in South Africa, and the Finnish Institute for the Verification of the Chemical Weapons Convention (VERIFIN). In total, twelve African chemistry professionals from eleven African countries attended the course. According to OPCW Director-General Rogelio Pfirter, the course is of particular significance to the OPCW, as it is the first activity covered by the Africa Programme to be undertaken at an African institution to provide assistance to nationals from African parties to the CWC.

4-5 April In Dubrovnik, Croatia, an *International Industry and Academic Workshop on the CWC, BTWC and UN Security Council Resolution 1540* [see 28 Apr 04] takes place. The event is jointly organized by the government of Croatia and the OPCW. Presentations are made on: the role of the United Nations in non-proliferation of WMD; the CWC's contribution to the non-proliferation of WMD and to global anti-terrorism efforts and the role of OPCW; the contribution of resolution 1540 to the non-proliferation of WMD; the BWC's contribution to the non-proliferation of WMD; the implementation of Article X of the CWC; the role of the chemical and bio-industries in national implementation of the CWC and the BWC, the role of scientific communities, academia and civil society in national implementation of the CWC and the BWC; national experiences in implementing the provisions of the CWC and the BWC in relation to chemical and biological safety and security; and lessons learned on how to further the implementation of the CWC and the BWC.

6 April In Pakistan, testifying before a standing committee of the National Assembly, head of police in Pakistan's North West Frontier Province Malik Navid says that al-Qaeda and the Taliban have "developed some expertise in making bio-chemical weapons", so reports *The Times of India*. In a subsequent interview with the London *Daily Telegraph*, Navid says the report he presented to the committee "was an in-house report, it was not supposed to reach the press". He adds: "It was based on information we have received."

6-10 April In Dubrovnik, Croatia, there is the fifth [see 16-20 Apr 07] *World Congress on Chemical, Biological and Radiological Terrorism*, which is the sixth meeting in the Chemical and Biological Medical Treatment Symposium series (CBMTS – Industry VI). The purpose of the event, which is organized by the government of Croatia, is to explore the

scientific, medical and policy aspects of chemical, biological and radiological terrorism. Those participating in the event include industry representatives, government officials, academics, medical and public health professionals, first responders and specialists in hazardous materials.

7 April In Baltimore, Maryland, five Iraqi expatriates and the Kurdish National Congress of North America file a federal lawsuit against three US companies claiming that materials supplied by them in the 1980s were subsequently used by Iraq to produce chemical weapons which were later used to attack its Kurdish population during Operation Anfal. The companies in question are VWR International LLC of Pennsylvania, Thermo Fisher Scientific Inc. of Massachusetts and Alcolac Inc. of Maryland. Additionally, the Republic of Iraq is also listed as a defendant. According to the Associated Press, the lawsuit – which seeks class certification for an estimated 100,000 Kurds – states that thousands of Kurds continue to suffer long-term health problems resulting from exposure to the materials, and requests unspecified compensation and establishment of a programme supported by the companies to monitor the health of those affected as well as family members and their heirs. The Associated Press says that during a federal prosecution in 1989, Alcolac acknowledged that it had illegally exported the mustard-gas precursor thiodiglycol, which eventually reached Iran. The lawsuit alleges that during the 1980s, Alcolac's predecessor company shipped more than 300 tons of thiodiglycol to Iraq through a Jordanian intermediary, Nu Kraft Mercantile Corp. The lawsuit further alleges that in 1986, VWR, then called BDH, sold chemicals to Iraq that were later used to make chemical weapons; and that in 1986 Thermo Fisher's unit based in Cambridge, UK sold laboratory material to Iraq that was subsequently used to make chemical weapons. [See also 10 Mar]

7 April In the USA, the National Institute for Occupational Safety and Health (NIOSH) has revised its 'Recommendations for the Selection and Use of Respirators and Protective Clothing for Protection Against Biological Agents', according to the Center for Infectious Disease Research and Policy. NIOSH Associate Director John Decker says the revised guidelines include breathing apparatus assessed to protect against CBRN materials, and revise National Fire Protection Association protective clothing standards. He adds: "A lot of this has changed over the last several years... In 2001 [when the recommendations were first released] we didn't have CBRN respirators. This was part of a general review of our site and which documents needed to be updated as part of a routine process." The guidelines, which the NIOSH says are "oriented toward acts of terrorism", state that emergency responders should use CBRN respirators and the highest quality protection suits available when the nature of an airborne agent or its method of release is uncertain. Fewer precautions are necessary when, for example, the type of agent has been ascertained and has been found in "a letter or package that can easily be bagged". The guidelines also address the use of non-CBRN respirators, techniques for the decontamination of protective equipment, precautionary vaccine regimens and medical treatments and checkups following exposure to harmful agents.

8 April In Brussels, the European Commission adopts an indicative budget of EUR 225 million for its Instrument for Stability – launched in 2007 – for the period 2009-2011, the indicative programme of which will address the broad range of threats outlined in the European Security Strategy, including those under the EU Strategy Against

Proliferation of Weapons of Mass Destruction. A memorandum issued by the Commission states: "EU assistance in critical areas such as redirecting scientists, export controls and illicit trafficking will as appropriate be consolidated in the former Soviet Union and significantly extended to new regions of WMD risks and threats, including South and South-East Asia, the Middle East and Africa... A number of 'Centres of Excellence' will be created to enable the development of coherent assistance packages tailored to the needs of countries in the region concerned and relying on existing capacities in the EU at Community and Member States level... Specific attention will be paid to the development of a safety and security culture with regard to chemical, biological, radiological and nuclear materials, in particular in the Middle East, South and South-East Asia and China, where rapid economic development increases proliferation risks, particularly in the nuclear and biological fields."

8 April The US Department of Homeland Security announces final allocations of nearly \$970 million for ten federal disaster-preparedness grant programmes. In a press release, the Department says the FY 2009 allocations bring the total amount provided from 2003 through 2009 to more than \$26.7 billion "to strengthen our nation's ability to prevent, protect, respond and recover from terrorist attacks, major disasters and other emergencies".

9 April Russian Chairman of the State Commission on Chemical Disarmament Grigory Rapota says that as of the beginning of the year Russia had received nearly \$584 million in international funding for its chemdemil operations, which amounted to just 46 per cent of the amount expected under the Global Partnership Against the Proliferation of WMD [see 26-27 Jun 02]. Speaking at a meeting of the State Commission on Chemical Disarmament in Leonidovka, Rapota adds that "due to the financial crisis the amount of international help [for Russian chemdemil] will reduce, and Russia will have to rely on itself... There are certain obligations, which were assumed by the Chemical Weapons Convention states parties voluntarily and are reflected in chemical disarmament plans. And if these obligations are not being met, this puts us in a difficult situation [see also 26 Feb]." Rapota also repeats his recent statement that Russia reaffirms its commitment to meet its obligations under the CWC to destroy all its chemical weapons stockpiles by 2012 [see 12 Mar].

14 April In Bristol Crown Court, UK, a man is sentenced to nine years imprisonment after earlier being found guilty of spraying his own urine and faeces over food in two supermarkets in Gloucester, as well as in a bookshop and pub, during a campaign in May last year. According to *The (Gloucestershire) Citizen*, the court heard how Sahnoun Daifallah – an Algerian national who has a degree in industrial chemistry – "had fantasies about biological weapons and wanting to cause public alarm". On raiding his house, police found messages on the walls referring to biological weapons and the smuggling of uranium into the UK. *The Citizen* quotes Judge Carol Hagen as saying that security agencies had labelled Daifallah as "high risk" to the public. To spray the slurry, Daifallah used a 1.5 litre weed-killer container concealed in a laptop bag that had been modified to enable the protrusion of the pipe's nozzle. Proceedings to have Daifallah deported have now commenced.

15 April Russia has reduced the funding of its chemdemil programme by 7.5 billion roubles, as part of a 33 billion rouble, or 26 per cent, reduction in the 2009 defence budget for targeted development programmes, so reports

Interfax-AVN military news agency, quoting a State Duma defence committee member speaking on condition of anonymity. Five days previously, Interfax-AVN quoted an unidentified Defence Ministry source as saying that funding of chemdemil, amongst other programmes, would be reduced. [See also 9 Apr]

15 April In the USA, a federal grand jury has ended its investigation into alleged misconduct at the Blue Grass Army Depot without issuing any indictments after finding there to be insufficient evidence to support allegations by a number of former employees of the facility of criminal misconduct, so reports the *Richmond Register*. The investigation by the grand jury started in 2006 after the employees alleged, amongst other things, a failure to conduct adequate monitoring of the air for the potential escape of chemical warfare materials and improper management of wastewater. The matter has also been investigated by the Kentucky Department of Environmental Protection and by the Office of the Inspector-General of the Army. Additionally, a Department of Labor administrative tribunal has presided over the claims by two whistle-blowers that they had been wrongfully dismissed for having raised concerns regarding safety issues at the facility. The case of Kim Schafermeyer [see 10 May 07] was dismissed on appeal, while that of Donald VanWinkle remains under appeal.

16-17 April In Istanbul, Turkey, there is a workshop on the universality of the CWC in the Mediterranean basin and the Middle East region. The workshop – which is jointly organized by the government of Turkey and the OPCW, and supported by a European Union Joint Action [see 19 Mar 07] – aims to promote universality of the CWC through constructive engagement with non-parties. More than thirty CWC parties attend the workshop, including ten from the Mediterranean basin, together with representatives from the League of Arab States, UN Office for Disarmament Affairs, UN Security Council 1540 Committee and NATO. Two of the three non-parties in the Middle East, Egypt and Israel, are also represented as is Myanmar.

20 April In Ramat Hasharon, Israel, agents from the Defense Ministry's Malmab security unit arrest a former scientist of the Israel Institute for Biological Research, Ness Ziona, after raiding his house and confiscating a computer and other documents. Yehoshua Gozes is later taken to Malmab headquarters for questioning on suspicion of leaking classified information. He is subsequently released after refusing to answer questions about his ties with another former employee of the Institute. Speaking to *Haaretz* after his release, he says he has "no doubt that this is revenge for my past activities" and denies any involvement with the leaking of state secrets. According to *Haaretz*, the investigation of Gozes began in June 2008, following a series of articles published in *Haaretz* about anthrax vaccine experiments conducted on Israel Defense Force soldiers in the early 1990s at the Institute. [See also 25 Mar]

21 April The Japanese Supreme Court has rejected an appeal by a former member of Aum Shinrikyo against his sentence of life imprisonment for having been the driver of a getaway car for one of the members who released sarin on the Tokyo underground railway network [see 28 Jul 04], so reports Kyodo news agency. Shigeo Sugimoto was also found guilty of involvement in the conspiracy to kill two Aum members a year before the sarin attack [see 20 Mar 95]. The Supreme Court rejects his arguments that he was in "a subservient position" in the sarin attack and had since felt regret over the incident. [See also 11 Nov 08]

21 April In Malaysia, the Army's Third Division Nuclear, Biological and Chemical Defense Unit – which was established in January 2007 – is conducting an exercise which involves responding to an attack in a crowded dining area, so reports the *Malaysia Star*.

21 April Across Turkey, police have arrested fifteen people suspected of having ties to al-Qaeda, following warnings by US intelligence officials and Interpol that they were planning to attack foreign targets and that followers were being trained to use biological weapons, so reports the Kuwaiti KUNA news agency.

21 April The Bahamas deposits its instrument of ratification to the CWC with the UN Secretary-General. In thirty days, it will become the 188th [see 27 Mar] party to the Convention. A press release by the OPCW says that following ratification by the Bahamas only the following seven states remain outside the Convention: Angola, Egypt, Israel, North Korea, Myanmar, Somalia and Syria.

21 April The US Government Accountability Office transmits to Congress *Defense Management: DOD Needs to Improve Program Management, Policy, and Testing to Enhance Ability to Field Operationally Useful Non-lethal Weapons*. The report identifies the extent to which the Department of Defense (DoD) and the Joint Non-Lethal Weapons Program have developed and fielded non-lethal weapons since the Program was created in 1996; how the DoD has established and implemented policy, doctrine, and training for non-lethal weapons; and the ways in which DoD has conducted testing and evaluation prior to fielding non-lethal weapons. The report sets out a total of eight recommendations that the Defense Secretary should take to assist with gauging the extent to which capability gaps are filled; better incorporating logistics and supportability considerations; developing performance criteria and improving oversight of the Program; clarifying non-lethal weapons policy and doctrine; and finalizing a risk assessment methodology for non-lethal weapons testing and evaluation.

21-24 April At OPCW headquarters, the Executive Council convenes for its fifty-sixth [see 17-20 Feb] session, which is chaired by Ambassador Oksana Tomová of Slovakia.

The following delegations make statements during the general debate: the Czech Republic (on behalf of the European Union and associated countries), Cuba (on behalf of the Non-Aligned Movement and China), South Africa (on behalf of the African Group), Japan, China, the Russian Federation, Algeria, the Republic of Korea, Iraq (observer), Mexico, India, Pakistan, Saudi Arabia, Brazil, Bosnia and Herzegovina (observer), the USA, Serbia (observer), and Iran.

The US statement refers to the search for a new Director-General that the Executive Council had launched in February: "The Council set out a process that is simple, transparent, and democratic, with the possibility for highly qualified candidates to come forward from all regions of the world. A number of distinguished candidates have already been nominated by their governments, and we hope to see more before the deadline in early July. ... My delegation looks forward to meeting all of the candidates at the next session of the Executive Council in July and to hearing them address the Council with their vision for the future of the Organization. That will provide an important opportunity to evaluate the candidates as the Council begins the difficult task of reaching consensus on the very best from a well-qualified group to become our next Director-General."

The US statement also announces that 59 percent of the US CW stockpile has now been destroyed, including 96 percent of the holdings of nerve gas.

The Council considers a Note by the Technical Secretariat on a proposal for general guidelines on the nature of continued verification measures at converted chemical weapons production facilities (CWPFs) and decides to consider it further at its next regular session. It again considers a Note by the Secretariat on its recommendations regarding the nature of continued verification measures at the converted CWPF located at CRP Portreath (formerly Chemical Defence Establishment, Nancekuke), Cornwall, UK and decides to consider the matter further at its next regular session. The Council also considers a Note by the Director-General on notification by Russia of changes at the former CWPF (Iewisite production, second train) Open Joint Stock Company "Sibur-Neftekhim" "Kapolaktam" Plant, Dzerzhinsk, Russia.

The Council considers and notes a Note by the Director-General on the progress made by those CWC parties that have been granted extensions of deadlines for chemdemil.

The Council welcomes the completion by India of destruction operations [see 16 Mar].

The Council considers and notes a Note by the Director-General on the adjustments to the schedule for submission by the States Parties of the reports on their destruction activities during the extension period after 29 April 2007.

The Council considers and notes a report by the Director-General on the status of implementation of Article X, further to a recommendation by the Second Review Conferences [see 18 Apr 08] that the Technical Secretariat evaluate the effectiveness of current programmes under the article. In this regard, the Council receives an oral report from the facilitator, Maciej Karasinski of Poland, on the progress made during the intersessional period. The Council requests the Secretariat to make the evaluation of the effectiveness of the current Article X programmes an integral part of the status of implementation reports, taking into account the views expressed by and the needs of the CWC parties.

The Council considers a report by the Director-General on the status of implementation of Article XI of the CWC and decides to consider it further at its next regular session. The Council again emphasizes the importance of the early appointment of a facilitator with a view to resuming consultations on the full implementation of Article XI.

The Council considers and approves a facility agreement with the USA regarding on-site inspections at a Schedule 1 facility.

The Council considers and notes two Notes by the Technical Secretariat on amendments and modifications to the facility agreement with Iran for a Schedule 1 protective purposes facility, and approves the amendments, which were submitted separately to the Council.

The Council considers and again decides to continue consideration at its next regular session a Note by the Technical Secretariat on enhancing information on the characteristics of plant sites in other chemical production facility (OCPF) declarations and a Note by the Director-General concerning information on the enhancement of OCPF declarations. The Council again considers a report by the Director-General on the performance of the modified methodology for the selection of OCPFs for inspection, and, noting the interim character of the measure, again decides to remain seized of the matter. The Council emphasizes the need for the early appointment of a facilitator in order to resume consultations on the OCPF site-selection methodology as a matter of urgency, with a view to reaching an early decision by CWC parties, in accordance with CWC Verification Annex. The Council also asks the

Director-General to provide a comprehensive report to the Council on the performance of the modified methodology at the end of the second year of its implementation.

The Council considers a Note by the Technical Secretariat relating to the recommendation by the Second Review Conference that the Secretariat evaluate the programme for implementation support, and decides to consider it further at its next regular session.

The Council considers and approves the lists of new validated data for inclusion in the OPCW Central Analytical Database as contained in a Note submitted to it by the Director-General.

The Council again notes the report of the twelfth session of the Scientific Advisory Board (SAB) and the Note by the Director-General in response to that report. The Council also receives a report from the Chairperson of the Council on the meeting of governmental experts to review the report of the SAB submitted to the Second Review Conference. The Council welcomes the intention of the Director-General to provide it with advice on how to enhance the interaction between the SAB and CWC parties as well as the policy-making organs, in accordance with the report of the Second Review Conference.

The Council notes that part of the Director-General's opening statement relating to destruction activities. The statement says: "As at 31 March 2009, the aggregate amount of Category 1 chemical weapons destroyed by all possessor State Parties together was approximately 30,199 metric tonnes, or approximately 43.42 per cent, of the declared quantity of this category of chemical weapons. The amount of Category 2 chemical weapons destroyed to date is 915 metric tonnes, or 51.84 per cent of the total amount declared, while all Category 3 chemical weapons declared have been already destroyed... As at 31 March 2009, the Russian Federation had destroyed 12,065 metric tonnes of its Category 1 chemical weapons, or 30.1 per cent, of the aggregate amount declared... As at 31 March, the United States has destroyed about 16,466 metric tonnes of Category 1 chemical weapons, or 59.3 per cent of its declared stockpile. [See also 31 Jan]

[Note: Assuming the OPCW's arithmetic is correct, these percentage figures yield the following quantitative information about initial declarations of CW stockpiles – initial declarations that are evidently [see 17-20 Feb] open to subsequent revision by agreement between the Secretariat and individual possessor states:

- Category 1 CW, Albania, India, Libya, Russia, South Korea plus the USA: 69,551 tonnes of chemical.
- Category 2 CW, all six countries: 1,765 tonnes of chemical.
- Total category 1+2, all six countries: 71,316 tonnes of chemical.
- Category 1, Russia only: 40,083 tonnes of chemical.
- Category 1, USA only: 27,767 tonnes of chemical.
- Category 1, Russia and USA only: 67,850 tonnes of chemical
- Category 1, Albania, India, Libya and South Korea only: 1,701 tonnes of chemical.]

The Council notes that part of the Director-General's opening statement which says that since the last session of the Council, forty Article VI inspections have been completed. This number includes three inspections at Schedule 1 facilities, five at Schedule 2 plant sites – of which one was with sampling and analysis – seven at Schedule 3 plant sites, and twenty-five at OCPF's.

The Council notes that part of the Director-General's opening statement announcing the release of the revised version of the Handbook on Chemicals and the Declarations Handbook, the latter of which is now available in all official

languages [see 28-30 Nov 08]. The 2009 edition of the Handbook now contains information on over 1,300 scheduled chemicals and riot control agents that have been declared to the Secretariat.

The Council notes from the opening statement of the Director-General that as at 1 April 2009, 57 annual declarations for 2008 have been received on past activities. "This", the statement says, "shows a significant improvement compared with last year, when the corresponding figure was only 38".

The Council notes from the Director-General's opening statement that with the notification of the designation by Congo of its national authority, the number of national authorities has now risen to 179. It notes, therefore, that there remain seven CWC parties that have not yet notified the OPCW of the designation of their national authority.

22 April In Krasnoarmeysk, Russia, a company presents a "non-lethal tear gas grenade" designed for use against pirates, at a testing range on the outskirts of Moscow, so reports ITAR-TASS news agency. The grenade, which was developed by Bazalt, is fired from the DP-64 portable anti-saboteur grenade launcher, which has a maximum range of 400 metres. ITAR TASS quotes Bazalt Director-General Vladimir Korenkov as saying: "When an unidentified vessel is approaching a ship, we do not know for sure whether there are pirates aboard, therefore it is unacceptable to use combat weapons right away. For this purpose, we have developed a non-lethal tear gas grenade. It generates a screen over the adjacent water area and deters potential pirates."

22 April The Israeli military issues a briefing paper which concludes that its use of white phosphorus during its three-week offensive in Gaza was undertaken in accordance with international law [see 4 Dec 08]. The paper is one of five briefing papers issued that set out the conclusions of five internal investigations into Israel's conduct during the offensive. The military says that it used two types of munitions containing white phosphorus: incendiary shells for marking and range-finding, which it said were used in limited quantities; and non-incendiary types of munitions used to create smoke screens. Both types, it says, were used in open areas only and in accordance with international law. Regarding the use of white phosphorus in densely populated residential areas, Amnesty International rejects the army's assertions that "no phosphorus munitions were used on built-up areas" and that the "pieces of felt dipped in phosphorus... are not incendiary". Amnesty says its researchers "found hundreds of white phosphorus-impregnated felt wedges in residential areas all over Gaza, still smouldering weeks after they had been fired". In addition, they "found dozens of artillery shells which had delivered the white phosphorus all over Gaza". As regards the use of white phosphorus and artillery strikes on the United Nations Relief and Works Agency (UNRWA) headquarters in Gaza City on 15 January 2009, Amnesty questions the Army's contention that "it appears that fragments of the smoke projectiles hit a warehouse located in the [UNRWA] headquarters" and that the "results could not be predicted". Amnesty points out that the briefing does not mention that white phosphorus shells also landed on the Palestine Red Crescent Society al-Quds hospital compound on 15 January 2009, causing fire damage and forcing the hospital to be evacuated. It says its researchers "found material evidence of the use of such weapons: a white phosphorus carrier artillery shell and remains of burned-out white phosphorus lumps". [See also 25 Mar]

Two weeks later, United Nations Secretary-General Ban Ki-moon transmits to the Security Council a summary of the report by a four-member UN Board of Inquiry into incidents

relating to UN personnel, premises and operations during the conflict. At a press conference, Ban points out that the Board “does not make legal findings and does not consider questions of legal liability”. The summary accuses the Israeli army of “varying degrees of negligence or recklessness with regard to United Nations premises and to the safety of UN staff and other civilians within those premises, with consequent deaths, injuries and extensive physical damage and loss of property”. Amongst other things, the Board criticizes Israel’s use of white phosphorus shells, which the UN says caused the incineration of its main food warehouse in Gaza. More generally, it says the Israeli military took “inadequate” precautions to protect UN premises and civilians inside and recommends further investigation into possible war crimes and that the UN should take appropriate action to seek reparation for all deaths and injuries involving its personnel and property. The conclusions of the Board are rejected by Israeli Defence Minister Ehud Barak as being biased. BBC News Online quotes him as saying: “We have the most moral army in the world... IDF [Israeli Defense Force] commanders and soldiers made every effort to avoid hurting uninvolved civilians.” Meanwhile, AlJazeera quotes Israeli President Shimon Peres as saying that the report was “one-sided” and that he hoped the Secretary-General would take Israel’s response to it into account.

According to AlJazeera, earlier in the month an unidentified spokesperson for the Israeli foreign ministry said that Israel would not co-operate with a separate UN Human Rights Council investigation into alleged war crimes by Israel during its offensive in Gaza. The investigation is to be led by Justice Richard Goldstone, former chief prosecutor at the International Criminal Tribunal for the former Yugoslavia, and at the International Criminal Tribunal for Rwanda [see also 25 Mar].

22 April In the USA, the *Journal of Agriculture and Food Chemistry* publishes an article on ‘From Yellow Rain to Green Wheat: 25 Years of Trichothecene Biosynthesis Research’, by Anne E Desjardins of the US Department of Agriculture (USDA) Mycotoxin Research, National Center for Agricultural Utilization Research, Peoria. Desjardins says that trichothecene biosynthesis at Peoria commenced in 1984 following concerns about the use of trichothecenes – toxic metabolites producing *Fusarium*, a genus of filamentous fungi – in biological warfare, but has since been undertaken in the context of contamination of human foods and animal feeds. In her article, Desjardins refers to a number of studies undertaken in the mid-1980s in which independent analyses of alleged yellow rain samples from Southeast Asia failed to detect trichothecenes, and that more extensive surveys showed that trichothecene-producing fungi and trichothecene contamination occurred naturally in the region. Referring to the fact that some of the samples taken were shown to contain high amounts of pollen likely deposited by honeybees, she says: “The yellow rain controversy highlights the difficulty of proving that biological warfare is the source of trichothecenes, or any naturally occurring toxin, in an environmental sample.”

23 April In the USA, a coalition of non-profit and business groups file a federal lawsuit claiming that the Department of Homeland Security (DHS) improperly selected Kansas State University as the site to build the new National Bio- and Agro-Defense Facility [see 5 Dec 08]. In the lawsuit, the Texas Biological and Agro-Defense Consortium alleges that DHS acted “unreasonably, arbitrarily and capriciously” in selecting the Kansas site, and requests that the court name Texas Research Park in San Antonio as the preferred alternative. The lawsuit also alleges that the selection of the Kansas site resulted from “improper and unfair political

influence” as DHS officials had met with Kansas state and federal lawmakers, including Kansas Senators Pat Roberts and Sam Brownback, without the presence of counsel as required by DHS policy. Meanwhile, *Congress Daily* reports that a group of seventeen members of the House of Representatives from Texas and Georgia have asked the DHS Inspector-General to conduct an investigation of the process used for selecting the site. The Consortium comprises the Texas Research and Technology Foundation, Southwest Foundation for Biomedical Research, Brooks City Base, the University of Texas Health Sciences Center at San Antonio and the University of Texas at San Antonio. [see also 16 Mar]

23 April In the USA, the Center for Biosecurity, University of Pittsburgh Medical Center releases *Hospitals Rising to the Challenge: The First Five Years of the US Hospital Preparedness Program and Priorities Going Forward*. The purpose of the report, which was sponsored by the Department of Health and Human Services (DHHS), is to assess the operations of the DHSS Hospital Preparedness Program since its launch in 2002 through 2007. Although the report notes a number of positive developments, it also states that “the US healthcare system is not currently capable of effectively responding to a sudden surge in demand for medical care that would occur during catastrophic events”. It continues: “Emergencies of this magnitude would overwhelm the medical capabilities of communities, regions, or the entire country and require drastic departures from customary healthcare practices.”

24 April In the USA, the Public Policy School at the University of California, Berkeley launches an online portal where scientists undertaking dual-use research can obtain advice on whether their work raises any security concerns, and if so, how such concerns can be addressed. Stephen Maurer, who set up the facility, says that written advice from a three-member panel of experts – each of which will comprise at least one biologist and one security expert – should then be provided within two weeks. ‘Experiments of concern advice portal’ can be accessed at: <http://tinyurl.com/bccnu>.

25 April In Geneva, an emergency committee of the World Health Organization (WHO) convenes for its first meeting to assess the situation regarding the recently reported cases of swine influenza (H1N1) that has so far killed at least 81 people in Mexico and has now spread to the USA. In a statement issued following the meeting, WHO Director-General Margaret Chan says the committee “agreed that the current situation constitutes a public health emergency of international concern” under the [International Health Regulations] [see 15 Jun 07]. On the advice of the committee, she recommends, amongst other things, that “all countries intensify surveillance for unusual outbreaks of influenza-like illness and severe pneumonia”.

The next day, during a media call, WHO Assistant Director-General for Health Security and the Environment Keiji Fukuda says “there are no signs we are dealing with purposeful actions”. As is commonly the case in such situations, there had been media suggestions that the disease outbreak originated in deliberate release of virus.

Two days later, the emergency committee raises the alert level for the virus from three to four – two levels short of declaring a full pandemic. Fukuda says the move signals a “significant step towards pandemic influenza”, but adds “we are not there yet”. He says the committee did not recommend closing borders or restricting travel. “With the virus being widespread [...] closing borders or restricting travel really has

very little effects in stopping the movement of this virus,” says Fukuda. Meanwhile, BBC News Online quotes Mexican Health Minister Jose Angel Cordova as saying that the suspected death toll from the virus has now risen to 149, of which 20 have been confirmed as such. Cordova adds that nearly 2,000 people have now been hospitalized since the first case of was reported on 13 April, however, half have now been discharged.

Sixteen days later, in an interview on Bloomberg television, Fukuda says the World Health Organization is currently reviewing a study submitted to it days earlier by an Australian researcher, which concludes the virus may have been created as a result of human error. Bloomberg quotes Adrian Gibbs as saying that having analysed the genetic makeup of the virus he concluded that the virus may have accidentally evolved in eggs scientists use to grow viruses and pharmaceutical companies use to make vaccines. Three days thereafter, News-Medical.net reports Fukuda as dismissing the possibility notwithstanding that Gibbs’ theory was “taken very seriously”. Fukuda is quoted as saying that the evidence suggests the virus is a naturally occurring virus as opposed to having originated in a laboratory.

Six weeks later, Chan announces that on the advice of the emergency committee the WHO has now declared a global flu pandemic. In a statement, she says: “Spread [of the virus] in several countries can no longer be traced to clearly-defined chains of human-to-human transmission. Further spread is considered inevitable. On the basis of available evidence, and these expert assessments of the evidence, the scientific criteria for an influenza pandemic have been met... I have therefore decided to raise the level of influenza pandemic alert from phase 5 to phase 6... The world is now at the start of the 2009 influenza pandemic.”

25 April The US Army Chemical Materials Agency (CMA) has now destroyed 60 per cent of the US declared stockpile of chemical weapons under the CWC. A CMA press release, issued three days later, quotes CMA Project Manager for Chemical Stockpile Elimination Robert Billington as saying: “It took eight years to destroy the first 10 per cent of agent, including agent destroyed before the CWC entered into force. Back then, the Johnston Atoll Chemical Agent Disposal System (JACADS) was our first operating facility, and we were still mastering operations... Since then, we have systematically applied the lessons learned from JACADS and our other operating sites to continually improve our efficiency.” The press release notes that the CMA reached the 50 per cent destruction milestone at the end of 2007 [see 10 Dec 07] and the complete chemdemil of VX and GB nerve agents at the end of last year [see also 5 Nov 08 and 24 Dec 08].

26 April Israel has in recent years invested heavily against the possibility of terrorists or hostile regimes attacking it with biological weapons, but the threat remains “huge”, so reports the *Jerusalem Post*, quoting the former head of the Israeli National Security Council. Giora Eiland says: “I will say that Israel has the best solution to this threat in the world... I can say with certainty that Israel has prepared a series of steps designed to deal with biological warfare.” [See also 10 Nov 08]

27 April-1 May In Istanbul, Turkey, there is a plenary session of the 12th World Congress of Public Health Associations, which is organized by the World Federation of Public Health Associations. Among those addressing the Congress is OPCW Director-General Rogelio Pflinter, who speaks on the subject of “The Organisation for the Prohibition of Chemical Weapons and Public Health”.

28 April *The Jerusalem Post* runs a wide-ranging interview with Israeli Foreign Minister Avigdor Lieberman in which Lieberman says that Iranian President Mahmoud Ahmadinezhad is “steadily moving towards reaching the end of his programme to be a nuclear power with unconventional weapons... not only nuclear weapons, but biological”.

28 April In Kiev, Ukraine, the deputy head of the parliamentary committee for health services says former chief sanitary doctor Nickolay Prodanchuk had agreed with the US Department of Health and Human Services to establish a “very dangerous laboratory” of which “the matter is about biological weapons”, so reports Media International Group (MIG) News. Speaking during a meeting of the Prosecutor General’s Office, Viktor Korzh makes his comments in the context of strong criticism by him of the Health Ministry’s failure to improve the state of the country’s health service.

28 April In The Hague, the tenth OPCW inspector training course concludes, having commenced thirteen weeks previously. The course – which was supported by the governments of Belgium, France, Italy, Netherlands, Slovakia, Switzerland and the USA – was completed by sixteen trainee inspectors from the following fifteen countries: Canada, China, Colombia, Finland, India, Iran, Japan, New Zealand, Pakistan, Russia, Serbia, South Africa, Sweden, Tunisia, and USA. The new recruits will now join a team of more than 180 OPCW inspectors. According to an OPCW press release, since entry into force of the CWC in April 1997, the OPCW has devoted a total of 193,724 inspector-days to inspecting some 1,400 military and industrial facilities.

28 April The US Department of Defense (DoD) is proposing to increase its chemdemil funding over the next six years with a view to completing operations at the Pueblo Chemical Depot, Colorado, by 2017 and at the Blue Grass Army Depot, Kentucky by 2021, so reports *Defence Environment Alert*, quoting an unidentified “informed source”. Currently, Pueblo is scheduled to complete its destruction operations by 2020 and Blue Grass by 2023. In January 2009, officials from the DoD’s Assembled Chemical Weapons Assessment (ACWA) programme reportedly briefed senior congressional staff, suggesting increases of more than \$200 million per annum for the fiscal years 2010 through 2015 budget for the facilities, making a total increase of \$1.2 billion over the period. The total costs for the ACWA programme are expected to be around \$8.2 billion. According to the source, during the congressional briefing ACWA managers promoted the use of ‘cross-leveling’, under which the Blue Grass stockpile would be transported to the Anniston chemdemil facility, so as to save money and enable operations at Blue Grass to be completed by 2015. However, congressional staff rejected the idea as “dead on arrival”, particularly given the illegality of transporting chemical weapons or agents across state lines. Discussions are reportedly ongoing as to whether neutralized chemical agent should be sent off-site for secondary processing or done on-site.

Nine days later, the DoD releases its FY 2010 budget request under which the ACWA programme would indeed receive \$550.4 million next year, up from the \$300.4 million it was projected to receive. *Defence Environment Alert* quotes a “budget document” released by DoD as saying the goal now is to destroy 90 per cent of the US stockpile of chemical weapons by 2012 and that the budget increase for the ACWA programme was requested “in order to complete destruction of the remaining 10 per cent [...] as close to 2017 as possible.” According to *Defence Environment Alert*, the overall FY 2010

budget request by DoD for its chemdemil programme amounts to \$1.71 billion, which includes \$1.15 billion for operation and maintenance, \$401.27 million for research and development, and \$12.69 million for military construction.

Fourteen days later, the DoD transmits to Congress a report stating that a review of on-site versus off-site options for treatment and disposal of hydrolysate wastewater from the Pueblo facility indicated that no significant cost or time savings would be achieved by off-site treatment. As a result of this, says the report, a treatment plant will now be constructed at the facility.

Sixteen days later, the Louisville *Courier-Journal* quotes Deputy Assistant to the Defense Secretary for Biological Defense and Chemical Demilitarization Jean Reed as saying that Blue Grass would start destroying its stockpile in 2019 and complete operations in 2021, while Pueblo will begin commencing destroying its stockpile in 2014 and complete it in 2017, five years after the deadline set under the CWC. Previously, the DoD stated that it would be unable to meet the 2012 destruction deadline as required by the CWC [see 9 May 06]. Congress subsequently passed legislation calling on the DoD to meet a destruction deadline of 2017 [see 12 Sep 07]. Thereafter, DoD released a report considering various options with regard to speeding up its chemdemil operations [see 30 Jun 08]. [See also 30 Sep 08]

29 April From UN headquarters, Secretary-General Ban Ki-moon issues a message on the occasion of the Day of Remembrance for all Victims of Chemical Warfare. In it he says: “[W]e must bolster international efforts to prevent access to chemical weapons by terrorists or other nonstate actors. Governments, international organizations and the private sector must all join forces to translate the Convention’s provisions into action... The United Nations will continue to work together with the [OPCW] and the international community to promote full implementation and universal adherence to the convention. In my capacity as depositary, I urge those states that have not yet ratified or acceded to the convention to do so as soon as possible.” The Day of Remembrance, which is also commemorated today at OPCW headquarters, falls on the anniversary of the entry into force of the CWC in 1997. [See also 29 Apr 08]

29 April In the USA, the National Science Advisory Board for Biosecurity (NSABB) releases *Enhancing Personnel Reliability among Individuals with Access to Select Agents*. The report sets out the recommendations of the NSABB with regard to steps the government should take to increase personnel responsibility among individuals with access to select agents and toxins [see 10 Dec 08]. Among the series of recommendations, the NSABB recommends that researchers who work with select agents and toxins should monitor one another and report any signs of suspicious behaviour. In this regard it states: “All individuals in an institution that conducts research with select agents, not just those with access to select agents, must be aware of surrounding activities and understand that it is their individual and collective responsibility to report if a colleague appears to be behaving in ways that are inappropriate for work with select agents.” The NSABB was charged with conducting the study after the Federal Bureau of Investigations identified former US Army researcher Bruce Ivins as having been behind the 2001 anthrax letters attacks [see 6 Aug 08]. Earlier in the month the NSABB held a public meeting in Bethesda, Maryland to discuss how to balance scientific integrity and security with regard to those working in biodefence laboratories.

29 April-1 May In Port-Vila, Vanuatu, a United Nations workshop on implementing United Nations Security Council resolution 1540 [see 28 Apr 04] is scheduled to take place. The purpose of the workshop is to enhance national capacities for the management of export-control processes, improve information and experience-sharing between participating states, and facilitate assistance with regard to implementation of the resolution. Participating in the workshop will be officials from the Cook Islands, Fiji, Kiribati, Marshall Islands, Federated States of Micronesia, Nauru, Niue, Palau, Papua New Guinea, Samoa, Solomon Islands, Timor-Leste, Tonga, Tuvalu and Vanuatu, as well as representatives of a number of international, regional and sub-regional organizations. The event is being organized by the UN Office for Disarmament Affairs with financial assistance from the European Union and the governments of New Zealand and Norway. It is the third such workshop on implementation of resolution 1540 organized by the UN Office for Disarmament Affairs since the adoption of Security Council resolution 1810 [see 25 Apr 08]. The two previous workshops were held in Brazil in November 2008 for members of MERCOSUR, and Qatar in March 2009 for Arab states. Previously, workshops were held at a number of locations, including Jamaica [see 29-30 May 07], UN headquarters [see 11-12 Jul 07], Jordan [see also 4-5 Sep 07], Kyrgyzstan [see 16-17 Oct 07] and Botswana.

30 April The Armenian parliament approves an arrangement reached days earlier between Armenian and US defence officials to extend an agreement under which the US supplies Armenia with equipment and training aimed at improving Armenian border controls to prevent the proliferation of WMD in exchange for assisting with the visa entry process for US experts. The agreement was signed nine years previously [see 24 Jul 00] and was due to expire in November 2009. According to ARMINFO news agency “the terms of the extension was not immediately known”. [See also 14 Mar 05]

30 April The US Department of State releases its 2008 edition [see 30 Apr 08] of its country reports on terrorism, which identifies the current threat from terrorism in each country, state sponsors of terrorism, and the threat of WMD terrorism. On the subject of WMD terrorism, the report states that “the nexus of weapons of mass destruction (WMD) and terrorism poses one of the gravest risks to the national security of the United States and its global partners”. With regard to the threat from chemical weapons, it states: “Today’s chemical terrorism threat ranges from the potential acquisition and use of chemical warfare agents and military delivery systems, to the production and use of toxic industrial chemicals and improvised dissemination systems, such as those used in the 1995 attack conducted by Aum Shinrikyo in the Tokyo subway system [see 20 Mar 95]... Terrorists also have sought to acquire and use commercially available materials, such as poisons and toxic industrial chemicals. The growth and sophistication of the worldwide chemical industry, including the development of complex synthetic and dual-use materials, may make the task of preventing and protecting against this threat more difficult... Preventing chemical terrorism is particularly challenging as terrorists can, with relative ease, use toxic industrial chemicals and other commonly available chemical agents and materials as low-cost alternatives to traditional chemical weapons and delivery systems, though likely with more limited effects.” On the threat from biological weapons, it states: “Developing a bioterrorism capability presents some scientific and operational challenges. However, the necessary technical capabilities are not beyond the expertise of motivated

scientists with university-level training... Among present-day terrorist organizations, al-Qa'ida (AQ) is believed to have made the greatest effort to acquire and develop a bioterrorism program. US forces discovered a partially built biological weapons laboratory near Kandahar after expelling the Taliban from Afghanistan. Although it was not conclusive that AQ succeeded in producing a biological weapon, the discovery demonstrated a concerted effort to acquire a biological weapons capability." More generally, the report concludes that "Iran remained the most active state sponsor of terrorism", while also listing Cuba, Sudan and Syria as sponsoring terrorism.

30 April In the US District Court for the Central District of Illinois, a man pleads guilty to one count of conspiracy to provide material support to al-Qaeda, including gathering information on agents such as cyanide. Ali al-Marri, a Saudi-Qatari dual national who has been held in the USA without charge since 2003, also admits to having attended numerous Pakistani terrorist training camps between 1998 and 2001. A press release by the Department of Justice states: "Al-Marri [...] conducted online research of various cyanide compounds, including hydrogen cyanide, potassium cyanide, and sodium cyanide. He reviewed toxicity levels, locations where these items could be purchased, and specific pricing of the compounds. He also explored obtaining sulfuric acid, a well-known binary agent used in a hydrogen cyanide binary device to create cyanide gas. Al-Marri agrees that the government would prove at trial this is the method taught by al Qaeda for manufacturing cyanide gas. Al-Marri agrees that the government would prove at trial that his research into cyanide compounds is consistent with research conducted by persons trained in camps teaching advanced poisons courses to terrorist organizations, including al Qaeda. He also agrees that the government would prove at trial that an almanac recovered in his residence was bookmarked at pages showing dams, waterways and tunnels in the United States, consistent with al Qaeda attack planning regarding the use of cyanide gases." The press release quotes Assistant Head of the National Security Branch of the Federal Bureau of Investigation Arthur Cummings as saying that after entering the USA on 10 September 2001, al-Marri "researched the use of chemical weapons, potential targets and maximum casualties". According to Agence France-Presse, al-Marri could face up to fifteen years imprisonment when he is sentenced in three months time.

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

Forthcoming Events

24-28 August

Geneva, Switzerland
BWC Meeting of Experts 2009

25-27 September

Wiston House, Sussex, UK
Wilton Park Conference *Preventing and mitigating the next use of chemical and biological weapons*
details: www.wiltonpark.org.uk

13-16 October

OPCW Headquarters, The Hague
58th Session of the OPCW Executive Council

28-30 October

The Hague, Netherlands
CBRNe Convergence Conference
details: www.cbrneworld.com

30 November - 4 December

OPCW Headquarters, The Hague
14th Session of the Conference of the States Parties

5-6 December

Geneva, Switzerland
30th Workshop of the Pugwash Study Group on Implementation of the CBW Conventions (*to be confirmed*)
By invitation only

7-11 December

Geneva, Switzerland
Meeting of the States Parties to the BWC 2009

Recent Publications

What follows is taken from entries since the last Bulletin into our electronic CBW Publications Database, which records and classifies substantial new acquisitions by the Sussex Harvard Information Bank. All such recorded items are held in hard copy in SHIB, which is open to visitors at the University of Sussex by prior arrangement. For access please apply to HSP Sussex.

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