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News Chronology

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What follows is taken from issue 48 of the Harvard Sussex Program CBW Chronicle, which provides a fuller coverage of events during the period under report here and also identifies the sources of information used for each record. All such sources are held in hard copy in the Sussex Harvard Information Bank, which is open to visitors by prior arrangement. For access to the Chronicle, or to the electronic CBW Events Database compiled from it, please apply to Julian Perry Robinson.

1 February In Japan, the Public Security Examination Commission announces in a government gazette that the cult Aum Shinrikyo, which recently changed its name to Aleph [see 18 Jan], continues to pose a threat to society and that security authorities are instructed to place the sect under surveillance for up to three years in accordance with the recently enacted surveillance law. Aleph leader Fumihiko Joyu tells a news conference that the surveillance is unconstitutional and that a lawsuit against it is being planned.

2 February In the Israeli Knesset, the first-ever debate on the country's nuclear-weapons capability takes place, amidst much acrimony, on a motion forced through by Issam Mahoul, a Hadash member of the parliament. At the start of his speech he says: "All the world knows that Israel is a vast warehouse of atomic, biological and chemical weapons that serves as the anchor for the Middle East arms race. ... I hope that today's debate will symbolise the breaking of the wall of silence and the beginning of an intensive debate in the Knesset and among the public on this subject." Later on, he says that Israel is producing "biological warfare" material at an institute in Ness Ziona [see 27 Feb 99 and 7 May 99]. Responding, government minister Haim Ramon states that Mahoul had been "talking nonsense" and that Israel's nuclear policies have not changed: "Israel won't be the first to introduce nuclear weapons to the Middle East".

2 February In Pretoria High Court, during the trial of Brig Dr Wouter Basson, forensic auditor Hennie Bruwer continues his testimony [see 24–28 Jan]. He has now been in the witness stand for ten days.

In relation to Charges 11, 12 and 13, which refer to the alleged purchase of DNA probes, peptides and the peptide synthesizer, Bruwer gives evidence on the US \$3.2 million involved. There had been authorization for the purchase in Switzerland of an "industrial scale" peptide synthesizer [see also 12 Nov 99], but a letter from Basson dated 22 June 1989 to the Co-ordinating Management Committee of Project Coast had stated that the deal was not going according to plan. A later communication to the CMC said that the purchase would not take place at all but that a quantity of thymus peptide could be obtained immediately; whereupon its purchase was authorized. As to the 1992 Croatian deal, in which a peptide synthesizer had supposedly been traded for 500 kg of

methaqualone [see 26 Nov–1 Dec 99], Bruwer states that he had found no evidence that the Croatian methaqualone had ever existed nor that the synthesizer had ever been purchased.

Other supposed technology acquisitions referred to in Bruwer's testimony include transactions during the first half of 1993 on manufacturing methods for the rapid-acting opiate etorphine, which is used in veterinary practice for immobilizing large animals.

2 February In Geneva, at the eighteenth session of the BWC Ad Hoc Group [see 17 Jan], the US delegation distributes an informal paper on the provisions now being mooted for inclusion in the BWC Protocol rolling text regarding "transparency visits", which have recently been proposed as an alternative to the "randomly selected visits" that the United States has opposed. The paper does not reject altogether the idea of "transparency visits", but it does oppose the concept that validation of declarations can or should be done through such visits.

2 February At Harvard University, in the Belfer Center for Science and International Affairs, Public Safety Group President Jack McGeorge speaks on *Weaponization of Biological Agents: Concepts and Issues* at a session of the HSP Cambridge CBW Colloquium. He observes that 202 different BW weapons were designed during the former US programme, but that most of them never left the drawing board: there were only two standardized BW munitions when the programme was terminated in 1969.

2 February In the US Senate, the Select Committee on Intelligence conducts its *Annual Assessment of Security Threats against the United States*, with a public hearing in the morning and a closed session in the afternoon. Testifying are the Director of Central Intelligence, George Tenet [see 26 Jan], the Director of the Defense Intelligence Agency, Rear Admiral Thomas Wilson, and the Assistant Secretary of State for Intelligence and Research, Ambassador Stapleton Roy.

Admiral Thomas, in his prepared statement, presents a grim assessment of the proliferation of weapons of mass destruction

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(WMD), believing it to be favoured by the post-cold-war environment: "New alliances have formed, providing pooled resources for developing these capabilities, while technological advances and global economic conditions have made it easier to transfer materiel and expertise. The basic sciences necessary to produce these weapons are widely understood. Most of the technology is readily available, and the raw materials are common. All told, the prospects for limiting proliferation are slim, and the global WMD threat to US allied territory, interests, forces, and facilities will increase significantly. ... Chemical and biological weapons are generally easier to develop, hide, and deploy than nuclear weapons and will be readily available to those with the will and resources to attain them. I expect these weapons to be widely proliferated, and they could well be used in a regional conflict over the next 15 years. I am also concerned that sub-national groups or individuals will use chemical or biological agents in a terrorist or insurgent operation. Such an event could occur in the United States or against US-allied forces and facilities overseas. The planning for such 'smaller-scale' incidents would be extremely difficult to detect and, consequently, to deter or warn against."

DCI Tenet and Admiral Wilson repeat much of their testimony next day during an Armed Services Committee hearing on *Threats to US National Security*.

2 February In the US House of Representatives, a further [see 31 Oct 97] hearing on *Persian Gulf War Illnesses* takes place before the National Security, Veterans' Affairs and International Relations Subcommittee of the Government Reform Committee. Chairman Christopher Shays observes that, since 1997, government agencies have spent more than \$121 million on research into the illnesses, more than 150 studies being funded. The General Accounting Office, asked to examine the effectiveness of this effort, has issued a report whose findings he says "confirm our worst fears about the pace and prospects of the search for answers for sick Gulf War veterans". The purpose of the hearing is to ascertain that "all federal research in the Gulf War illnesses is well designed, vigorously pursued and keenly focused on the most promising hypothesis". There are three panels of witnesses. The first is from the General Accounting Office, and is critical of the efforts of the Defense Department Office of the Special Assistant for Gulf War Illnesses (OSAGWI). The second comprises officials from the Departments of Defense, Veterans' Affairs and Health & Human Services, whose testimony is criticized by the chair for its unresponsiveness to the GAO findings. The third panel comprises independent researchers who have been investigating the illnesses: Iris Bell of the University of Arizona College of Medicine, Claudia Miller of the University of Texas Health Science Center, and Howard Urnovitz of the Chronic Illness Foundation. Mohamed Abou-Donia of Duke University Medical Center had also been expected for this panel.

3 February In Nuremberg, two veteran Jewish resistance fighters are under investigation on charges of attempting to poison the bread of some 2,000 imprisoned former SS troopers and Nazi functionaries in April 1946. Leipke Distel and Joseph Harmatz, fighting as partisans in the forests of eastern Poland had, in 1944, been among those who had formed Nakam (Hebrew for Revenge), the group committed to hitting back at the Nazis even after the war. Nuremberg senior state prosecutor Klaus Hubmann is today quoted as saying: "If somebody attempts a murder then we are obliged to open a case".

3 February In the US Defense Department, the Defense Threat Reduction Agency is tasked to conduct a three-year

Advanced Concept Technology Demonstration, *Restoration of Operations* (RestOps), on the better preparation of fixed military sites for their protection against, and recovery from, the consequences of chemical or biological attack. The RestOps ACTD will develop improved CB defence tactics, techniques and procedures, and apply emerging technologies to address operational concerns before, during and after a chemical attack.

4 February In Geneva, the Ad Hoc Group of states parties to the Biological Weapons Convention concludes its eighteenth session of work on the BWC Protocol [see 17 Jan]. A new rolling text for the Protocol is adopted, the eleventh version thus far, in Part I of the procedural report of the session. Part II contains the now customary Annex IV — the compilation of papers prepared by Friends of the Chair setting out proposals for further consideration in the form of annotated (redline/strike-out) Part I text. The next session is scheduled for 13–31 March. Conceptual differences between delegations on such issues as compliance measures (e.g. how to validate declarations) and technical cooperation (e.g. how to reconcile it with the Australia Group) remain wide. Delegations, however, reportedly describe the pace of progress as "modest but steady"; on the technical-cooperation issue, for example, the concept of a Cooperation Committee has emerged from its square brackets. Consultations during the session among delegations on whether to proceed with the high-level meeting that Australia had proposed as a means for boosting the Protocol negotiation, a meeting that would coincide with the 25th anniversary of BWC entry into force, indicate that the prevailing circumstances would not yet be opportune, though some delegations anticipate visits by their ministers to the next session of the Ad Hoc Group.

4 February In Stockholm, at the Swedish Foreign Ministry, former IAEA Director-General Hans Blix [see 26 Jan] speaks at a press conference about his new duties, which he will take up on 1 March, as Executive Chairman of UNMOVIC, which is the new UNSCOM-follow-on agency [see 17 Dec 99]: "I have no magic formula to apply. ... I have no plans presently to go to Iraq [from which UN arms inspectors have been excluded since December 1998]. ... [The Iraqis] have said they do not accept the resolution [of the UN Security Council, establishing UNMOVIC] and, as for the chairman, they don't seem to like anyone. However, this might not be the last word. I think the unanimity in the Security Council is a very important factor." He says he has not yet decided on staffing for the new agency and that he will not permit staff members to take instructions from any government. If confrontations develop with Iraq, he will defer to UN headquarters for their resolution.

The following week, the official Iraqi news agency quotes Vice-President Taha Yassin Ramadan thus: "There shall be no return of the so-called inspection teams. We reject the infiltration [of our country] by spies using such cover." The remark was made to a visiting Russian envoy, Nikolai Kartuzov, who is said to have been tasked with persuading Iraq to cooperate with UNMOVIC. Iraqi Foreign Ministry Under-Secretary Nizar Hamdoon subsequently says on CNN television: "Compromise will only be done when the [UN Security] Council itself gets engaged with Iraq in a discussion. It has not happened yet."

4–5 February In San Diego, California, a conference on *Bioterrorism: The Medical and Public Health Response* is attended by some 300 physicians, scientists, public officials and law-enforcement agents. Among the principal speakers is

D A Henderson, director of the Johns Hopkins Center for Civilian Biodefense Studies, which is one of the conference sponsors. He says: "To remain unprepared is to invite disaster. We are a long way from being even modestly prepared, but we are doing a lot more now than we did twelve months or even six months ago. ... We're likely to see an attack within the next five to ten years."

5 February In Japan, government sources are quoted on plans for a mission on abandoned chemical weapons [see 30 Jul 99] that is to go to China in September. By May, a specific programme for the mission is to be developed during consultations with China. A team of about 50 people, including Self-Defence Forces personnel, doctors and academic experts is to conduct the mission. Assisted by Chinese workers, the team will disinter some 1500 shells that had been buried at Beian, in Heilongjiang Province, by the Japanese Imperial Army. The retrieved munitions will then be classified, sealed and placed in a special storage facility near Beian pending their destruction. There is still disagreement between Japan and China on details of the destruction programme.

5 February The British Broadcasting Corporation has been trying since 10 December to send ten sets of individual protective equipment to its reporters and crew-members in North Ossetia who are covering events in Chechnya, so the London *Guardian* reports, saying that the equipment is to provide protection against "the primitive chemical weapons believed to be in use by Russian troops and Chechen rebels" [see 5 Jan]. The Department of Trade and Industry has required the BBC to obtain an export licence, but issuance of this is being delayed, so a DTI spokesman is quoted as saying, because of "difficult security issues".

6 February US Defense Secretary William Cohen, writing in the *Washington Post* about his department's Anthrax Vaccine Immunization Program [see 14 Jan], says: "Anthrax is a highly lethal biological agent that at least 10 countries have in their arsenals or are in the process of acquiring".

7 February In Russia, Deputy Prime Minister Ilya Klebanov, who has defence-industry responsibilities, tells reporters that implementation of the programme to destroy 20 percent of the country's chemical weapons by April 2002, as required under the Chemical Weapons Convention, is lagging because of insufficient financing. He says that a Russian delegation will be visiting the OPCW in The Hague at the end of February, adding: "Today, we have agreed with [Acting President] Vladimir Putin the stands of this delegation". He also says that he has discussed with the Acting President the problem of settling the state's debt to enterprises of the defence complex, a debt which is now estimated at R18-20 billion.

7 February President Clinton transmits to the Congress his administration's budget request for FY 2001. The Defense Department is seeking \$291.1 billion in budget authority including \$277.5 billion in outlays, of which \$836 million in procurement and RDT&E funding would be "to continue to improve protection of DOD forces and activities from terrorist or adversary use of chemical-biological agents". For the interdepartmental Expanded Threat Reduction Initiative [see 30 Nov 99 The Hague], \$974 million is sought, including \$141 million for State's ETRI programmes. For the administration's "domestic preparedness" counter-terrorism programmes, \$11.1 billion is sought, a billion dollars up on the previous year. The Department of Agriculture is reportedly seeking \$340 million to

spend over seven years boosting animal-disease research, including some \$40 million for the new Plum Island facility [see 14 Sep 99], in response to fears of terrorism directed against the US livestock industry.

7-16 February In Pretoria High Court, during the continuing trial of Brig Dr Wouter Basson, proceedings are interrupted by the state launching an application for Justice Hartzenburg to recuse himself from the trial on grounds of bias and prejudgement of the case, as evidenced particularly in statements he had made in court on 4 February. After nearly three days of argument, the judge dismisses the application as frivolous, mind-boggling, absurd and "unfounded in its totality". In giving this ruling he also presents his understanding of the case thus far. He says that, as he understood the fraud section of the case, it was common cause that Basson had been ordered to develop both an offensive and defensive CBW capacity for South Africa. The project was top secret and managed by the SADF's Coordinating Management Committee, on which served a handful of the most senior military officers. The need-to-know basis was religiously enforced and General Knobel had testified that, if it took theft, bribery or any other normally unacceptable means to acquire what was needed for the project, Basson was to get the goods. The CMC did not want to know where or how he did so, nor the names of people or countries involved, nor when, how and to whom payments were made. To this end, Basson had been issued with three false passports by the SADF to support his cover as a wealthy international businessman with chemical interests.

9 February In Australia, the pharmaceutical group CSL Ltd announces a deal with the Anglo-US company DynPort LLC [see 12 Nov 97] to manufacture its Q-fever vaccine for the US Defense Department. The vaccine is registered in Australia but not yet with the US Food and Drug Administration. Clinical trials are to begin in the United States within a year. Sales on the order of US\$20-25 million are expected.

9 February In Seoul, the Association of Vietnam War Veterans Suffering from Exposure to Agent Orange announces that a further 1,890 former South Korean soldiers and farmers have registered as Agent Orange victims since the acknowledgement two months previously by the US and South Korean governments that Agent Orange and two other herbicides had been sprayed along the North Korean border during 1968-69 [see 15 Nov 99]. The Association is already suing two US manufacturers of Agent Orange — Dow Chemical and Monsanto — for \$4.3 billion in compensation for alleged injuries to health, and the US government for a further \$1 billion [see 2 Dec 98]. The new border-area registrants are forming a separate group to sue for compensation; 20 of them have already filed suit in Philadelphia against Dow, Monsanto, Uniroyal and four other US chemical companies [see 8 Dec 99].

9 February In Iran, the Council for the Victims of the Weapons of Mass Destruction has written to some European embassies in Tehran to report the deaths during 15-19 January of five further veterans of the Iraq-Iran war who had been disabled by Iraqi chemical weapons. The Council letter also states: "The world knows well that the criminal regime in Iraq was provided with weapons of mass destruction by the Western countries, including Germany, which claim to be supporters of human rights". And, according to the *Tehran Times*, it calls on German officials "to identify and expose those involved in providing Iraq with chemical weapons, apologize to

the Iranian nation for such support and compensate for the harm and injury suffered by the victims”.

9 February The US intelligence community has recently produced a new National Intelligence Estimate on the ballistic missile threat to the United States through the year 2015. The National Intelligence Officer for Strategic and Nuclear Programs — Robert Walpole [see 9 Apr 97] of the CIA — now testifies in detail on the new estimate at a hearing of the Senate Governmental Affairs Subcommittee on International Security, Proliferation, and Federal Services. He says that “North Korea, Iran and Iraq could test ICBMs of varying capabilities — some capable of delivering several-hundred-kilogram payloads to the United States” — within the next five years, a period shorter than previous estimates, and much shorter than is commonly perceived within European NATO capitals, where the new estimate has received scant public attention, despite its having been posted on the internet at the CIA website.

NIO Walpole also offers this comment in his testimony: “Although non-missile means of delivering weapons of mass destruction do not provide the same prestige or degree of deterrence and coercive diplomacy associated with an ICBM, such options are of significant concern. Most are less expensive than ICBMs; can be covertly developed and employed; probably would be more reliable, accurate, and effective for disseminating biological warfare agent; and would avoid missile defenses.”

10 February In Rome, a report is published detailing the use of the lower Adriatic as a dump-site for chemical weapons during the period from the close of World War II until the early 1970s. The report, by the Italian marine science agency ICRAM, presents findings from a two-year study commissioned by the Italian Environment Ministry following parliamentary pressure originating in the damage being caused to local fisheries and fisherfolk: during 1946–97 there are records of at least 236 fishermen suffering what appear to have been mustard-gas injuries, with five deaths. The ICRAM report identifies the locations of some 20,000 munitions containing 24 chemical substances, including arsenicals and mustard gas, and warns that there could be as many as 200,000 munitions. At the press conference to release the report, Environment Minister Edo Ronchi says: “Other countries have used the Adriatic as a dumping ground and we are counting on sending those responsible the bill”. It seems that, besides Italy, the weapons had been dumped by Britain and the United States. A UK Defence Ministry spokesman later says: “We did dispose of chemical munitions in the sea off the coast of Bari after the war, which was the standard way to dispose of them. We have not received a request from the Italian government for help. But we always like to co-operate with a request.” The Italian Military Marine has been removing munitions of all types, from the Adriatic floor since September 1996, by now more than 64,000 including ones dating to World War I.

10 February At the US Defense Department regular news briefing, spokesman Craig Quigley states that the Department has no evidence that Iraq is reconstituting its biological-weapons capability. That Iraq might be doing so had just been argued by Milton Leitenberg of the University of Maryland Center for International and Strategic Studies. In a recently completed study based on information from former UNSCOM officials and, “a very small bit”, from two Iraqi exiles, Leitenberg had suggested that, in an unreported underground facility, Iraq had been producing a BW agent additional to those noted in published UNSCOM documents: plague bacteria,

possibly, or *Brucella melitensis*, or even a viral agent. Interviewed by reporters, he points to Salman Pak [see 2 Aug 91] as a likely location for the facility, which, so the *New York Times* reports him as saying, “might still be functioning there, detectable by ground-level air ducts camouflaged by a small shed”.

11 February In Khartoum, to which he has been invited by the Chief of the General Staff of the Sudanese Armed Forces, the Deputy Commander of the Iranian Islamic Revolution Guards Corps, Brigadier Mohammad Baqer Zolqadr, inspects the Shifa pharmaceutical factory. To reporters he subsequently describes the US missile bombardment of the factory in August 1998 as “one of the most brutal measures taken by America against the oppressed and particularly Muslim countries”.

13 February In Iraq, Hans von Sponeck, the German official who serves there as the senior representative of the Secretary-General of the United Nations responsible for coordinating humanitarian aid to the country, tenders his resignation in protest against the UN sanctions regime, just as his predecessor in office, Denis Halliday of Ireland, had done in October 1998. Halliday had said then: “The loss of life inflicted on ordinary Iraqis by the sanctions is incompatible with the United Nations Charter. The continuation of these sanctions in full knowledge of their deadly consequences constitutes genocide.” Von Sponeck says now: “I’m not at all alone in my view that we have reached a point where it is no longer acceptable that we are keeping our mouths shut.” He also says: “This experiment of sanctions on Iraq has not worked. Why must we prolong the pretence that it does?” His resignation is accepted next day. US State Department spokesperson James Rubin tells reporters: “It has long been our view that Mr von Sponeck exceeded his mandate in purporting to comment on areas that are beyond the range of his competence”. French Foreign Ministry spokesperson Anne Gazeau-Secret tells reporters: “We would like to pay tribute to Mr von Sponeck’s remarkable action. His assessment of the humanitarian situation in Iraq corresponds to the reality. It reflects beyond any doubt the views of all the observers of the situation on the ground. So he can’t be criticized for having spoken out publicly.” On 15 February the head of the UN World Food Programme in Iraq, Jutta Burghardt of Germany, resigns her post too, saying she believed sanctions were a failure and caused suffering. The *Washington Post* observes that the resignations lend force to an argument that has been gaining ground: the sanctions are counterproductive and should be abandoned.

The newspaper itself rejects it, but the argument gains further ground over the coming weeks, as is particularly evident during a special day-long session of the UN Security Council on 24 March to consider the humanitarian situation in Iraq. Here, and in such other fora as the UK House of Commons, the views expressed range between two poles: that the sanctions are destroying the basic social fabric of Iraq without effectively influencing its dictatorship; and that, without the arms-control regime that the sanctions empower, Iraq will rapidly rearm with weapons of mass destruction and again threaten international peace and security. The suffering of the ordinary people of Iraq is not in question, but, for some, sanctions are the root cause while, for others, it is misrule by the dictatorship. The latter view is expressed as follows to the Security Council by the US representative, Ambassador James Cunningham: “Sanctions by themselves are not the problem. The sanctions on Iraq have never targeted the Iraqi people and have not limited the import of food and medicine. Where there has been deprivation in

Iraq, the Iraqi regime is responsible, due both to its failure to meet its obligations under Security Council resolutions and its cynical manipulation of civilian suffering in an effort to obtain the lifting of sanctions without compliance.” The United States is coming under widespread criticism for the extent to which it is causing the UN Sanctions Committee to block Iraqi imports of potentially dual-use goods.

All speakers during the Security Council special session note the opportunity presented by resolution 1284 (1999) [see 17 Dec 99], if properly implemented, for improving the lives of ordinary Iraqis.

14 February Eritrea deposits its instrument of accession to the Chemical Weapons Convention. In 30 days time, on 15 March, it will thus become the 130th state party to the treaty.

15 February In Russia, the Tatarstan Interior Ministry is continuing its investigations into the case of two women arrested when trying to sell a box of glass ampoules containing mustard gas, lewisite and other toxic substances. The box had reportedly been stolen from the warehouse of a chemical plant where one of the two women worked. After the theft had become known, according to the Kazan *Vremya i Dengi*, officers of the Federal Security Service “in the guise of potential terrorists” had agreed to buy the ampoules for R50,000.

15 February The OPCW Technical Secretariat issues a Note on its *Proposed Verification Measures for Old Chemical Weapons Produced between 1925 and 1946*, based on informal discussions with delegations. This includes the information that Slovenia has recently joined the six other member-states that have thus far submitted declarations of old chemical weapons on their territory, namely Belgium, France, Germany, Italy, Japan and the UK [see 2 Jul 99 OPCW].

Of the seven declaring states, only four — Germany, Italy, Japan and the UK — identify their old chemical weapons as having been produced between 1925 and 1946. These are held at 20 sites, of which the Note says that only 11 “remain inspectable”; initial inspections have been conducted at all eleven, and there have been five further OPCW inspections at the eleven sites. These inspections are additional to “11 initial and further inspections for abandoned chemical weapons declared as produced between 1925 and 1946 in China”. Only Italy and the UK have yet submitted plans for destroying the old chemical weapons that they have declared.

Concerning the verification regime that is to be applied to them, old chemical weapons are differentiated from chemical weapons in the CWC on the criterion of “usability”. But consensus has not yet been reached on what makes a chemical weapon unusable. There remain two main causes of disagreement, both relating to bulk toxic chemical or precursor. First, although it is agreed that the criterion should reside in the concentration of the chemical, a common position has yet to be reached on a figure for the lower cut-off point for considering deteriorated bulk chemicals a threat. In an annex, the Note proposes a figure of 5 percent by weight. Second, there is disagreement on the question of how small a quantity of toxic chemical or precursor must be before it can no longer be considered to pose a risk of use. On this, the Note proposes a figure of 300 kilograms, unless the chemical remains contained in munitions, devices or equipment specifically designed for the delivery of toxic chemical to a target, in which case the condition of its containment should become the determining consideration. How much corrosion, deformation or other such physical damage should be decisive here is presented in another annex to the Note.

The Director-General later comments to the OPCW Executive Council about the proposed verification measures: “One of the central premises of the proposed measures is that, irrespective of the absence of a decision on the verification requirements for the destruction of old chemical weapons, the requirement for the submission of general and detailed annual plans for destruction, to be provided in accordance with the relevant provisions of Part IV(A) of the Verification Annex and Article III, subparagraph 1(a)(v) of the Convention, remains intact.”

15 February In Canada, a military court rules that ex-Sergeant Mike Kipling, who had refused an order to take anthrax vaccine in March 1998 when stationed in Kuwait City [see 2 Dec 98], and who had quit the Canadian Forces in May 1999, was for disciplinary purposes still a member of the military and should face court martial.

16 February US Defense Threat Reduction Agency Director Jay Davis, in an interview published in *Jane's Defence Weekly*, speaks of tensions with Russia over CBW elements of the Cooperative Threat Reduction (Nunn-Lugar) programme: “The Russians have not helped us with this because they have said many of their facilities we will never see to inspect, particularly in the BW area. There is a set of *Biopreparat* facilities that apparently belongs to the Ministry of Defence, and the Russians have said ‘you will never set foot in there’. That makes [assistance] hard to justify.”

17 February In Canada, the Ministry of National Defence publishes the annual report for 1999 of the committee that oversees its CBW defence programme. This, the tenth such report from the Biological and Chemical Defence Review Committee, states its conclusions in the following terms:

“The BCDRC found neither indications of duplicity within Canada’s biological and chemical program nor evidence to support the allegation that offense related activities were being conducted either on behalf of Canadian authorities or to comply with any multilateral treaty commitment.

“We remain convinced that Canada must retain a modest capability to effect essential defensive research and development to permit the conduct of conventional military and counterterrorist operations under the threat of biological and chemical weapons. We believe that Canada’s ability to respond rapidly and effectively to biological and chemical threats, domestically or off-shore, will depend upon the maintenance of core expertise in defence science within DND.” The conclusions then go on to specify the CBW defence projects that are needed and the contribution the projects may also make to “treaty monitoring, medical support, pollution control and the handling of toxic wastes”.

Based on site visits and documentation review, the annual report also covers, as usual, the implementation of the recommendations made in the Barton Report [see 25 Jan 89].

17 February In the US House of Representatives, the majority staff of the Shays Subcommittee publishes its report on the Anthrax Vaccine Immunization Program (AVIP) on which the committee had conducted a series of six hearings [see 29 Sep 99]. The report says that AVIP is “an unmanageably broad military undertaking built on a dangerously narrow scientific and medical foundation” and should be suspended “until DOD obtains approval for use of an improved vaccine. The Defense Department says it has no intention of ending mandatory anthrax vaccinations, and issues a rebuttal.

17–18 February In Pretoria High Court, during the continuing trial of Brig Dr Wouter Basson, forensic auditor Hennie Bruwer returns to the witness stand to complete his evidence-in-chief for the prosecution. In relation to Charges 65, 66 and 67, he testifies at length about financial transactions involving NBC protective clothing. He states that when, in 1994, President Mandela was briefed on Project Coast, the South African Defence Force had reported holdings of 20,000 NBC suits, which was a far smaller number than, according to Project Coast accounts, SADF had purchased through the project.

17–18 February In St Lucia, the OPCW Technical Secretariat and the Organization of Eastern Caribbean States (OECS) convene a regional workshop. Late in 1999, an OECS representative had visited the Secretariat and prepared draft CWC implementing legislation forming part of a package of legislation implementing other international toxic-chemical regimes. The purpose of the workshop is to allow OECS member-states to study the draft with a view to facilitating regional cooperation on national implementation of the CWC. Participants are from Antigua & Barbuda, Dominica, Grenada, St Kitts & Nevis, St Lucia, and St Vincent & the Grenadines.

17–22 February In Washington, DC, the American Association for the Advancement of Science conducts its annual meeting, during which it hears a presentation by Matthew Meselson of Harvard University, who speaks on the theme of biological weapons as a potential threat to the species. Later, Lt-Col George Christopher of the US Air Force speaks of the impossibility of protecting civilians against biological-warfare attack.

18 February In Taiwan, the Ministry of Defence issues a denial of the recent statement attributed to the US Defense Department that Taiwan is one of at least ten countries that have or are developing biological warfare capability. The Ministry says: "All our current research and development in biochemical warfare is for self-defence, to guard against a biochemical war waged by China".

The Ministry is apparently responding to reporting from a US Defense Department press-briefing on the recent report on the Anthrax Vaccine Immunization Program by the Shays Subcommittee of the House of Representatives. Citing a Defense Department information paper dated 15 December 1997, *DOD Biological Warfare Threat Analysis*, the Shays report had stated: "According to various unclassified DOD statements, more than ten countries 'have, or are developing, a biological warfare capability'. Those nations are: China, Iran, Iraq, Israel, Libya, North Korea, South Korea, Syria, Taiwan and Russia."

18 February Death aged 79 of Ronald Hope-Jones, the British diplomat who, while head of the Foreign Office Arms Control and Disarmament Department during 1967–69, was the driving force behind the UK negotiating initiatives on CBW disarmament.

20 February Iraq's continuing maintenance of chemical-weapons capability is evidenced, so the London *Sunday Times* reports, in the testimony of an Iraqi who, this past week, had defected from the special security organization Amn al-Has. Since 1990, his unit had been trained to guard the hidden sites of ballistic missiles and their nerve-gas warheads and to deliver them to launch sites. The newspaper quotes him as saying: "The last time we trained on the warheads was just last summer. We collected from a site near Baghdad six warheads containing sarin and also GF. We drove the trucks to

a remote desert location, where the experts prepared the warheads. I know that the warheads contain one component of the sarin gas and the GF gas. For safety reasons the rest has to be added a short time before the actual launch. In the morning we returned the warheads to the Baghdad region."

Two weeks later, in the context of prisoner-of-war talks between Iran and Iraq, an Iranian general is quoted by his country's news agency IRNA impugning the credibility of the Iraqi government because it "has concealed its chemical weapons in defiance of pressure by international organizations".

20 February From Geneva, the Swiss section of the Médecins Sans Frontières (MSF) movement publishes the report of its investigation into the bombings conducted in southern Sudan by the Sudanese Air Force. The report rests chiefly on testimony gathered from witnesses and victims among the civilian population, from MSF teams and from other humanitarian organizations working in the Province of Equatoria. This testimony is presented in the report. The MSF evaluation is as follows: "It clearly shows: (I) that the bombings are aimed at the civilian population and civilian targets, in particular hospitals and schools; (II) the use or alleged use of prohibited weapons with indiscriminate effects: cluster bombs and weapons containing chemical products; and (III) a policy of terror which provokes new displacements of the population and increases the precariousness of the civilian population." The report concludes: "MSF believes that the information contained in this report confirms that the human rights of the civilian population in Southern Sudan are regularly and deliberately violated and this must be stopped immediately."

The reports of Sudanese chemical warfare [see 31 Dec 99], which have been heard from the south of the country for at least 14 years now, are summarized thus in the Introduction to the report: "The allegations regarding the use of chemical bombs started on 23 July 1999, when the villages of Lainya and Loka (Yei County) were bombed with chemical products. In a reaction to this event, a group of non-governmental organizations had taken samples on the 30th of July, and on the 7th of August the United Nations did the same. Although the OPCW is competent and empowered to carry out such an 'investigation of alleged use', it needs an official request made by another State Party. To date, we deplore that OPCW has not received any official request from any State Party to investigate, and that since the UN samples taking, no public statement has been made concerning these samples nor the results of the laboratory tests."

The report reproduces a letter dated 16 December 1999 from OPCW Director-General José Bustani to MSF President James Orbinski explaining the inability of the OPCW to act and suggesting that the MSF should "communicate directly with the United Nations". (Bustani had just told the OPCW Executive Council about this letter, saying that it was in response to Orbinski's letter of 30 November addressed to the UN Secretary-General and only copied to him.)

20 February At Harvard University, in the Belfer Center for Science and International Affairs, Jonathan Moreno, Kornfield Professor of Biomedical Ethics at the University of Virginia, speaks on *Past Human Trials of CBW Agents* at a session of the HSP Cambridge CBW Colloquium. His talk is drawn from his recent book, *Undue Risk: Secret State Experiments on Humans*. Members of his audience subsequently challenge him on statements he had made in the book. In one case a person who had been accused of criminal and unethical behaviour in the book, Brian Davey of South Africa, who is now head of the Health & Safety Branch of the OPCW Technical

Secretariat, personally rebutted all the charges and demanded that Moreno retract his statements. Professor Moreno did not reject the charges of inaccuracy. He promised to ensure that future editions of his book were corrected.

20 February In the US chemdemil programme, 18.2 percent of the former US stockpile of 31,496 agent-tons of chemical weapons has now been destroyed.

20–29 February In Pretoria High Court, during the continuing trial of Brig Dr Wouter Basson, forensic auditor Hennie Bruwer is cross-examined by the defence, which presents argument to discredit the 800-page report from Bruwer's seven year investigation, and also charges that Bruwer had prolonged his investigation for personal financial gain. He is then re-examined by the prosecution.

The defence states that many of the missing NBC suits had in fact been donated to UNITA for its operations in Angola. On this the defence says that it had consulted the logistics officer in charge of UNITA supplies from the end of 1986 to 1992, Colonel Schutte, who had told them of a "huge" internal problem in UNITA's ranks following three genuine chemical attacks against them: the 50,000 UNITA troops in the field became so terrified, he had said, that all "the enemy" had to do was throw inert yellow smoke grenades to send the UNITA troops scurrying into the bush, fleeing for their lives. Apart from the physical protection offered, it had thus been psychologically essential that the SADF supply NBC suits to these men, and it had been common practice to keep no records of such donations to UNITA.

The defence states further that the proceeds from the sale of NBC suits had been used to purchase the proximity fuses that "the Army" needed for weaponizing Agent CR in 120mm mortar-projectiles for shipment to UNITA. Basson had stated that this weaponization was "on the specific instructions" of the late General A J (Kat) Liebenberg [see 19-25 Nov 99], and that the weapons had been dispatched to UNITA by Military Intelligence.

In relation to another allegedly fraudulent transaction, the defence states that the funds concerned had in fact been used to purchase "a large amount" of Agent BZ in a joint operation with the head of Swiss intelligence, Peter Regli [see 12 Nov 99 and 26 Nov–1 Dec 99]. The defence tells the court that about four tons of BZ had been bought but that, by 1993, "this had largely been used up". The defence also refers to the apparent existence at that time of 980 kg of Product B, described as a variant of BZ.

21 February In the United States, mediation begins aimed at settling the lawsuits involving Time Magazine and CNN that had arisen out of their reporting in 1997 and 1998 of apparent US employment of incapacitating and lethal chemical weapons during the Vietnam War, latterly in Operation Tailwind [see 2 Jun 99]. The suits include an action by CNN producer April Oliver against former Special Forces commander John Singlaub. A videotaped deposition, taken by the litigants on 17 January from Admiral Thomas Moorer, a former chairman of the Joint Chiefs of Staff who had been a key source in the original reporting, is later posted on the internet.

23 February In Viet Nam, Prime Minister Phan Van Khai signs a government decision allocating a regular subsidy to those war veterans and their children who are, in the words of the Vietnamese News Agency, "affected by toxic chemicals sprayed by the US during the Vietnam War" [see 29 May 99 and also 5 Jul 99]. A government source estimates that, under

the terms of the decision, about 150,000 people will qualify for payments, which are to come out either of local budgets or national employment-promotion and poverty-alleviation funds. The decision is retro-active to 1 January 2000.

24 February In New York, UNSCOM Deputy Executive Chairman Charles Duelfer [see 19 Jan] submits a letter of resignation to the UN Secretary-General, which is accepted and will become effective on 1 March. He offers to make himself available to UNMOVIC Chairman Hans Blix, should the latter find that useful as he sets up the UNSCOM-follow-on organization. In interview he says: "I took a decision a while back that I would stay till the very end. We have now reached that point." He says that he does not expect to be asked to join UNMOVIC.

24 February The US Senate adopts unanimously the *Iran Nonproliferation Act of 2000*, which would give the administration discretionary authority to impose sanctions on any country that supplies technology, equipment or materiel to Iran for a wide range of missile and weapons programmes, including CBW programmes. The legislation would also suspend certain payments owed by the United States to Russia for the International Space Station until the President certifies that Russia is cooperating in halting the spread of weapons technology to Iran. The Russian Foreign Ministry criticises the US Senate for its "quasi-imperial approach" and warns that it is a "serious blow" for Russian-American cooperation in the field of non-proliferation and export controls. The legislation passes the House a week later and, on 14 March, is signed into US law by President Clinton, whose previous veto of a harsher version of the bill had delayed the US CWC-implementing legislation [see 23 Jun 98].

24 February The US Defense Department Office of the Special Assistant for Gulf War Illnesses releases several new reports, among them the information paper *Planning the Gulf War Air Campaign: The Role of Modeling and Simulation in the Planning of Attacks on Iraq's Chemical and Biological Warfare Targets*. The paper says that OSAGWI investigators had found that, in preparing for the 990 aircraft sorties that were flown during the Gulf War against 23 suspected Iraqi CBW-weapons research, production or storage facilities, Coalition planners did not have the benefit of modelling or simulation studies to assess potential releases of CBW agent. Studies were being undertaken, but were not completed in time. However, OSAGWI states: "Post-war inspections have turned up no evidence of biological agent contamination and only very limited evidence that chemical agents were possibly released from four of 23 sites targeted".

25 February Russia is conducting experiments with CBW agents on Chechen prisoners held at a secret concentration camp at Mozdok in North Ossetia, according to "rather reliable sources of information" quoted by a senior Chechen rebel figure, Abu Mowsayev.

27 February In New York, Random House publishes *Cassidy's Run: The Secret Spy War over Nerve Gas* by David Wise, a Washington-based journalist who has written extensively on aspects of intelligence and espionage. The book is about a US Army sergeant, Joseph Cassidy, now living in retirement in Florida, who had been a US–Soviet double agent for twenty years. The FBI had recruited him in 1959 as a "dangle" to lure his recruitment by Soviet military intelligence, which, in 1963, asked him to furnish information about the US Army CW laboratories at Edgewood Arsenal. From then until

1969 he became central to a US deception operation intended to damage the CW programme of the USSR. He was instructed to pass to his Soviet contacts the chemical identity of what he was to describe, with supporting documentation, as a novel nerve gas designated GJ that was several times more toxic than previous nerve gases. This particular chemical, whose identity is not specified in the book, had indeed been studied at Edgewood but had been rejected as a candidate CW agent because of its instability. The idea was to lead the Soviets into thinking that the United States had nevertheless found how to weaponize it successfully (as its G-series designator implied), thereby diverting their CW-weapons and CW-defence programmes down an expensive but worthless trail. The passing of information, some bogus but some genuine, took place during 1966-69.

The book goes on to suggest that Soviet weapons-scientists somehow overcame the instability problem, perhaps by applying the binary-munition concept, whereupon Agent GJ took on new life as a Novichok agent [see 25 Oct 99]. In relation to this theory, the book quotes Vil Mirzayanov [see 25 May 99], who states, however, that the Novichok agent that had gone into limited production as a binary formulation — “probably less than a thousand tons”, with testing at Nukus during 1986-89 — had been “developed in 1973 by Pyotr Petrovich Kirpichev”, a Shikhany chemist. A subsequent commentator on the book asks why the author should suppose that Soviet scientists could not have come upon Novichok-type structures without a GJ prompt.

The book, which is based on some 450 interviews with nearly 200 people (among them such now-retired US chemical-weapons people as Saul Hormats, Benjamin Harris, William Weber and William Dee), contains some supporting information. For example, it is interesting to be told, on the authority of senior Army counter-intelligence official Taro Yoshihashi, that the designator GJ had been allocated to the deception because the G-series nerve gases already extended, at that time, up to the letter H. The book seems to identify GH as the O-isopentyl homologue of sarin, but chemistry is not one of its strong points.

27 February Death aged 71 of Rex Watson, director of the UK Defence Ministry Chemical Defence Establishment, Porton Down, during 1974-83.

28 February In Cuba, the City of Havana People's Provincial Court commences hearings on its claim against the US government for \$121 billion compensation for economic and other damage sustained from nearly four decades of US attacks and sanctions [see 2 Nov 99]. On 7 March, the Cuban Minister of Science, Technology and Environment, Rosa Elena Simeon, presents evidence of US biological-warfare attacks since 1959 [see also 14 Oct 99].

29 February Azerbaijan deposits its instrument of ratification of the Chemical Weapons Convention. In 30 days time, on 30 March, it will thus become the 131st state party to the treaty.

29 February In South Africa, Deputy Attorney General Anton Ackerman [see 29 Oct 99] issues a statement containing the following: “I am aware of media allegations referring to a former member of the South African Medical Services, Dr Brian John Davey, alleging his complicity or involvement with the charges being heard in the [Wouter Basson] case. The South African Defence Force project on chemical and biological warfare has been the subject of exhaustive official investigations spanning over a period of seven years. These investigations have

included probes by the Office of Serious Economic Offences and my office. I have had full access to the results and reports of all these investigations. I am able to certify that Dr Davey has co-operated fully with all of these investigations over that period, and that none of them have revealed any evidence of wrongdoing, unethical behaviour, or any other irregularity on his part. Should it be required, I am prepared to sign a sworn affidavit regarding the contents of this statement.”

29 February In Delaware, at Dover Air Force Base, Major Sonnie Bates [see 14 Jan] is fined \$3,200 and given a career-damaging official reprimand for his refusal to take anthrax vaccine under the Anthrax Vaccine Immunization Program (AVIP). More than 300 members of the armed services have refused to participate in AVIP; he is the most senior of them. On 30 March, he receives a general discharge under honourable conditions.

29 February–31 March In Pretoria High Court, during the continuing trial of Brig Dr Wouter Basson, the prosecution continues to call witnesses for the fraud section of its case. These include an associate of Basson's, Pieter Willem de Jager; two former Military Intelligence officers, Major Hercules Offer and Brigadier Hein Pfeil; and two other business associates of Basson's, accountant Tjaart Viljoen and banker Samuel Bosch. There is also testimony from Reserve Bank foreign-exchange manager Petrus Troskie.

During cross-examination of Viljoen, the defence again raises the matter of Basson's close relationship with Libya, stating that four Libyans had once lived in Basson's home for about six weeks, and that Basson's mother had also accommodated three Libyans. The court is not, however, told why Basson and his family had accommodated these people, nor why that was related to the financial irregularities with which he is charged. The defence also mentions that a Libyan national had stayed in the cottage used by Basson in the UK. During the cross-examination of Bosch, Basson's chief contact in Libya is said to have been Yusuf Murgham, described as a senior Libyan intelligence agent. The defence states that, in order for Bosch to be able positively to identify him, it will screen video footage of Murgham in the company of former President Mandela.

The defence continues to make reference to Basson having acted, just as “consummate perjurer” American attorney David Webster [see 24–28 Jan] had done, on behalf of the “real” principals, thus far unnamed, behind the many transactions in which he is accused of wrongdoing.

Proceedings are set to resume on 2 May, when the prosecution will present the first of about 30 witnesses on the charges of murder and human-rights violation.

1 March At OPCW headquarters, there is a visit by a delegation from the upper chamber of the Russian Parliament. It includes a number of regional governors and is led by the chairman of the Federation Council, Yegor Stroyev, who reaffirms Russian commitment to the CWC and speaks of the need to step up international cooperation with Russia in its chemdemil effort. Director-General Bustani speaks of the need to improve cooperation between the various Russian governmental agencies involved in the implementation of the Convention.

1 March At UN headquarters in New York, Hans Blix of Sweden assumes his post as Executive Chairman of UNMOVIC. He is due to submit his proposals on management, including staffing, to the Security Council on 15 April. The only

current UN presence in Iraq is the humanitarian one. At a press conference Dr Blix outlines some of his plans for what he says is "a technical job in a political minefield". He is optimistic that Iraq will ultimately agree to a resumption of inspections: "The Security Council confirms the right of UNMOVIC to unrestricted access and information and I intend to exercise that. Indeed, I think that such inspections are indispensable in order to get to credible evidence about Iraq. The Iraqis may tend to look upon inspections as a penalty which they would like to minimize. I think the way they should look at it is as an opportunity they should maximize." He would resume the practice of inspections on short notice — "the shorter, the better, because the credibility is larger" — recognising, however, that "in any inspection you cannot come to a 100-percent clarification: there will always be a residue of uncertainty". He will not lower the standards of inspection, but: "I am also determined that our role is not to humiliate the Iraqis. ... Iraq is not a country under occupation, it is under the control of the government and you cannot go on forever to take the authorities by surprise there. The inspectors are not an army. They are not a commando troop that can leap in and shoot their way to the target." As to staffing, he recognises that UNSCOM staffers had vital experience that he would want to tap, at least in the short term. "Those [UNSCOM personnel] who would like to stay should indicate their wish to do so, but we will also ask for governments to suggest names of people, and we will have a competition". His staff will largely be on UN contracts rather than on loan from governments, for that way, he says, their allegiance will be to the organization rather than their governments. However: "I don't think that any organization can completely guarantee that you will not be infiltrated. ... Even the CIA has been infiltrated in the past. ... If I discover a staff is not loyal, I will fire him." On the question of UNMOVIC accepting sensitive information from national governments, Dr Blix says in a later press interview: "I don't want to have inflows of intelligence at various points. I want to have one secure inlet". And it would be "idiotic", he says, to refuse to accept information from an Iraqi defector: such a source would be vetted by "a professional who will critically analyse and evaluate the information we get, because there is always disinformation".

1 March At Harvard University, in the Belfer Center for Science and International Affairs, Jerome Hauer [see 10 Apr 98 and 6–7 Oct 98], until recently the director of the New York City Office of Emergency Management, speaks on *Preparing for Chemical and Biological Terrorism: The New York City Model* at a session of the HSP Cambridge CBW Colloquium.

1 March The US Department of Commerce announces that it has imposed a penalty of \$200,000 on Bayer AG to settle allegations that, 57 times during the period October 1994 to January 1997, its Diagnostics division had exported glucose and other reagents to Hong Kong, Malaysia, Mexico, Singapore, South Africa, South Korea and Taiwan without having obtained the export licenses required for these substances because of their potential CBW application.

2 March In Moscow, the acting head of the EU mission, Gilbert Dubois, announces that Russia, via its Economics Ministry, is to receive Euro 7 million in two two-year TACIS-funded projects to assist its chemdemil programme. One project is for the installation of a monitoring system in the Gorny destruction facility [see 17 Dec 99]. The other is for dismantling the Kaprolactam factory at Dzerzhinsk in the Nizhny Novgorod region, where mustard gas was once made

[see 30 Jun 98 and 22 Sep 99]. Reportedly, only British and French companies are to participate in the projects.

3–5 March In Foster City, California, the International Conference on Sino-Japanese Relations convenes for its sixth session, *Sino-Japanese Relations during the Republican Era, 1912–1949*. Most of the 135 attendees are from China and the USA, and there also attendees from Canada, Germany, Italy, Japan, Russia and Taiwan. Three panel sessions deal with aspects of Japanese chemical and biological warfare on the Asian mainland during the period 1931 (when Japan occupied Manchuria) through 1945.

Li Yaquan of China, secretary-general of the society for studies of Japan's fourteen-year rule in the northeast provinces, describes materials recently uncovered in Hailar. She says that some 450 pounds of original Japanese source documents had been unearthed during excavation of a site previously part of Japan's underground defence works running along the USSR border of the northeast provinces. During the summer of 1998, a passer-by had told construction workers of his recollections regarding an underground bunker on the excavation site. What he said prompted officials to re-open the bunker, which had previously been located but thought to consist of a single level below ground. The passer-by had told of three levels, and his story was verified when the site was explored. In 1945, the retreating Japanese army had filled all three levels with documents collected from throughout the northeast provinces, and had then set fire to the collection. The entry to the bunker was closed with the fire raging inside. This closure, though, starved the fire of oxygen, as shown by the 1998 survey of the bunker complex. While the fire destroyed all materials on the upper-most level (the only level to have been surveyed previously), it left some materials on level 2 untouched. All materials on level 3 escaped. These materials were retrieved and sent for preservation, cataloguing and study. The process is slow, and materials are being provided to Chinese scholars as they come available. Li offers no opinion regarding the timeline for a full reporting of the Hailar discoveries nor for the expected contents of the materials. She states that many of the materials are flimsies of reports filed by the Japanese secret police and their collaborators. [Note: This story of the Hailar bunker discoveries may explain some of the current reporting of activities related to events during the period of Japanese occupation.]

6 March The US Deputy Assistant Secretary of Defense for Threat Reduction Policy, Susan Koch, testifies before the Senate Armed Services Subcommittee on Emerging Threats and Capabilities about the Cooperative Threat Reduction (CTR) programme, for which the FY 2001 budget request is \$458 million.

On CW elements of the CTR programme, Dr Koch says that work has begun this year "to improve safety and security at critical Russian chemical weapons storage sites". A project is being implemented to assist Russia in eliminating the chemical weapons production capabilities at Novocheboksarsk and Volgograd. Further work on the Chemical Weapons Destruction Facility (CWDF) for nerve-gas munitions at Shchuch'ye [see 13 Apr 99] has been prohibited under Section 1305 of the FY 2000 Defense Authorization Act, but repeal of this is now being sought. Dr Koch says: "Recently, the Russian Government has been making substantial progress in creating the required social infrastructure necessary to support the CWDF. Allowing this project to go forward will enable the destruction of a nerve agent stockpile of 5,450 metric tons in nearly two million highly portable artillery and rocket munitions.

If Russia lifts the current legal prohibition on movement of chemical weapons, the Shchuch'ye facility could also be used to destroy the rest of Russia's stockpile of groundlaunched nerve agent, now stored at Kizner. Furthermore, US resumption of the Shchuch'ye project will provide an opportunity for more international assistance. The Administration has strongly encouraged other nations to contribute to NIS security requirements under the ETRI, and President Clinton recently encouraged the other G-7 nations to assist specifically with the Shchuch'ye effort. To date, Canada has agreed to provide \$70,000 for infrastructure design, with additional support under consideration. The United Kingdom proposes approximately \$5 million towards social infrastructure projects, available mid-2000 (subject to final Ministerial approval). Italy has agreed to provide approximately \$8 million to support infrastructure improvements [see 20 Jan], with Shchuch'ye as a possible recipient. These offers are contingent upon resumption of the project by the US. We are continuing to urge our Allies and others to contribute more to the project."

As to BW, the FY 2001 budget request includes continued support for the Biological Weapons Proliferation Prevention (BWPP) programme, which supports 11 collaborative research projects annually, providing, as Dr Koch puts it, "increased transparency into Russian BW capabilities". She also speaks of plans "to support the dismantlement of former BW production facilities and related equipment, and help to secure research pathogen repositories and provide biological safety training to Russian scientists". Concerning the dismantlement work, she says: "We are working to destroy the former biological weapons production facility at Stepnogorsk in Kazakhstan. The equipment has been removed and demilitarized, and the final phase contract to include demolition of the production building will be awarded third quarter FY2000." She says that these BWPP efforts "are closely coordinated with other US Government activities to redirect former Soviet BW scientists to civilian research activities", continuing: "Through CTR we are also finalizing contracts with four biological facilities in Russia and two in Kazakhstan to provide security for the dangerous pathogens located there and are in discussions to secure dangerous pathogen repositories at other biological facilities — pathogens which have an essential role in peaceful research, but which also represent a serious proliferation threat."

A US General Accounting Office report released on 15 March says that the Defense Department has plans to obligate about \$57 million in CTR funds from FY 2000 through FY 2005 to help reduce the threat of biological weapons proliferation by supporting projects at the Moscow International Science and Technology Center, all US input into which is managed by the Department of State.

6 March President Clinton announces his intention to nominate Donald Mahley [see 28 Jun 99], for the rank of Ambassador during his tenure of service as Special Negotiator for Chemical and Biological Arms Control Issues.

7 March In Tehran, where German Foreign Minister Joschka Fischer is on a two-day official visit, a group of people chemically disabled during the Iraq-Iran War demonstrate outside the German embassy, protesting against German companies that aided the Iraqi chemical-weapons programme and calling for reparation. The demonstration ends when Foreign Minister Fischer receives a representative of the chemically disabled, Dr Kamran, who says to him: "Take our message of sufferings of chemically wounded Iranians to Germany, a message which conveys our wholehearted support for the ideals of the revolution, the revolution leader and the territory of

the Islamic Iran. We welcome you to the land of the withered flowers but we demand you as a responsible official to observe the boundaries of humanity and thus close and condemn plants manufacturing chemical weapons." Minister Fischer later says at a press conference that, if German companies had sold chemical weapons to Iraq, that would have been illegal: the German government strongly condemns such moves.

7 March In the United Kingdom, in response to a parliamentary question about the number of animal experiments carried out at Porton Down, the DERA Chemical and Defence Sector reports that 11,501 procedures using animals had been undertaken during 1999 [see also 22 Jul 96].

7 March In Scotland, a BBC television documentary about experiments at Porton Down using human volunteers is screened on the Frontline Scotland *Trial and Error* programme. It places emphasis on a divergence between experiments as recalled to camera by human volunteers involved and the records maintained at Porton on the toxic exposure of those individuals, who now claim an association between the experiments and their chronic health problems. Dr Alastair Hay, a chemical pathologist at the University of Leeds, is seen saying that "many of the problems that the veterans have now could very well just be the effects of ageing". Later he says: "if the agency that was doing these tests can't keep decent records, then I find it very difficult to see how the individuals can (a) prove their case or, perhaps more important, how Porton can deny that these people have a claim".

7 March In Washington, a joint report by the Center for Strategic and International Studies (CSIS) and the Chemical and Biological Arms Control Institute, *Contagion and Conflict: Health as a Global Security Challenge*, is released at a CSIS press conference. The report is about the intersection of health and national security, drawn in terms broader than the current Washington preoccupation with biological terrorism as a major new threat to the nation. The report succeeds the issuance of a new US National Intelligence Estimate that identifies global infectious diseases as a threat to the national security.

8 March In Britain, the Defence Evaluation and Research Agency informs Parliament that it is "withholding details of the Ministry of Defence estimates on the toxic doses of nerve agents including sarin ... because their disclosure would cause harm to defence". A parliamentary question to the Defence Secretary had inquired about the percutaneous lethal dose of sarin for an averagely built person [see also 19 Aug 99 UK].

8 March In Washington DC, at a joint press conference, the Japanese Foreign Ministry Director-General for Arms Control and Scientific Affairs and the US Senior Advisor for Arms Control and International Security — respectively, Norio Hattori and John Holum — announce the formation of a US–Japan Commission on Arms Control, Disarmament, Nonproliferation and Verification. This is to meet every six months to review, discuss and implement joint goals, and also to encourage collaboration between non-governmental experts within its field. [Note: The terms of reference of the Commission, though worded broadly, seem to indicate an exclusive focus on nuclear questions.]

8 March In the US Senate, legislation that would establish a new Export Administration Act [see 30 Jun 94] is withdrawn by Banking Committee Chairman Phil Gramm. Although already approved in committee, the bill, S.1712, has come under attack

on the grounds that it would liberalize export trade in dual-use goods at excessive cost to the national security.

8 March In the US House of Representatives, a hearing on *Chemical and Biological Weapons Preparedness* takes place before the National Security, Veterans' Affairs and International Relations Subcommittee of the Government Reform Committee. Chairman Christopher Shays opens the hearing as follows: "Pharmaceutical and vaccine stockpiles constitute a vital and growing element within the national domestic preparedness effort against terrorism. In the event of a chemical, biological or nuclear incident, local hospitals will need extraordinary quantities of antidotes, antibiotics and serums to treat the victims. If the right medicines do not arrive quickly, thousands could die. Today, the Department of Health and Human Services' four national medical response teams are available to deploy with medical supplies to treat up to 5,000 casualties each. The Marine Corps' Chemical-Biological Incident Response Force also maintains a supply of pharmaceuticals and equipment that could be used to support local first responders. A larger national pharmaceutical stockpile is being assembled by the Centers for Disease Control. To be useful, medical stockpiles must be carefully maintained and well managed. So we asked the General Accounting Office to assess the accuracy of current inventory tracking and the adequacy of internal controls over critical stockpile assets. GAO found inventory shortfalls, record-keeping discrepancies and security lapses that compromised the ability to respond to chemical or biological incidents. The fundamental cause of the problems is not the complexity of the terrorism threat or the logistics of a multi-event response scenario, but the lack of the most basic management controls. GAO found a critical national program running on little more than Post-it notes and a spreadsheet. The Marine Corps isn't even willing to concede that their cache is a stockpile that needs to be managed like the others. Terrorism poses any number of extremely difficult challenges to our national security. Accounting for medical stockpiles should be the easiest part. Well-recognized principles of program design, inventory management and internal control should be applied immediately to transform the current cottage industry of stockpile management into the national enterprise Congress intended. The threat of domestic terrorism demands we amass and pre-position costly medical supplies we hope never to use. We hope the very existence of stockpiles will deter terrorists. But in the tragic event we are called upon to open the national medicine cabinet, it must contain the types and amounts of supplies needed to save lives. In addition to testimony from the GAO, we will hear today from those responsible for management of the nation's stockpiles. To varying degrees, each has acknowledged GAO's findings and pledged reforms."

There are two panels of witnesses. The first is from the GAO, led by the Associate Director for Veterans' Affairs and Military Health Care Issues in the GAO Health, Education and Human Services Division, Cynthia Bascetta. The second panel comprises administration witnesses: Frances Murphy, the Acting Deputy Undersecretary for Policy, Department of Veterans Affairs; Robert Knouss, the Director of the Office of Emergency Planning, Department of Health and Human Services; Stephen Ostroff, the Associate Director for Epidemiologic Science at the National Center for Infectious Diseases, Centers for Disease Control and Prevention, Department of Health and Human Services; and the commanding officer of the Marine Corps' CBIRF, Col Carlos Hollifield. All have prepared testimony, and all are accompanied by assistants.

8 March US Defense Threat Reduction Agency Director Jay Davis is reported as saying that a new concept, Optimal Dual Delivery, based on existing stockpiled munitions, has been developed in the Agent Defeat Warhead Demonstration programme [see 1 Jul 99] for the attack of buried or hardened targets that could contain WMD facilities. In interview Dr Davis has said: "The pattern seen by the intelligence community is that most new facilities are tunnelled into mountain sides ... people no longer build [hardened facilities] with concrete, they dig holes". Describing the new attack concept, he says: "We have [completed] demonstrations of existing munitions that were modified, in which the second weapon hit the hole the first weapon made. The intent is for the first weapon to prepare the shaft and the second to hit it and do more damage further down."

8 March In Irvine, California, the city administration declares a local emergency and police evacuate some 200 residents from homes near to that of Dr Larry C Ford, who had committed suicide on 2 March and who was a suspect in the wounding of his colleague in Biofem Pharmaceutical Inc, James Riley, with whom he had founded the company. The evacuation, which continues for three days following an informant telephone call, is to allow police and FBI to search and excavate the Ford property. This is happening amidst press reports about the dead man's connections with the CIA and with the former South African CBW weapons programme. Ford's lawyer, Bryan Card, tells reporters: "The Irvine police made a comment to me that they were told he could have enough bacteria at his disposal — and this was a quote — to wipe out a country". Among the explosives, machine guns, thousands of rounds of ammunition and other items found during the search are several dozen vials of suspected chemical or biological material, which are being sent for analysis to the FBI laboratory at Quantico, Virginia. Preliminary findings, according to unidentified "law enforcement sources", include cholera and salmonella bacteria, the attenuated viability of which suggested they had been in storage for some while, possibly years. These findings are later confirmed by Orange County Health Care Agency.

9 March In Moscow, the Swedish Embassy is the venue for an international roundtable on aid to the Russian chemdemil programme.

9 March In London, at a seminar organised jointly by VERTIC and the London School of Economics, Marie Chevrier of the University of Texas at Dallas speaks on "Understanding the US position in the negotiations to strengthen the Biological Weapons Convention".

10 March UN Secretary-General Kofi Annan appoints 16 persons to be UNMOVIC commissioners, having consulted with UNMOVIC Executive Chairman Hans Blix and with the members of the UN Security Council. The commissioners are: Adigun Ade Abiodun (Nigeria), Reinhard Böhm (Germany), Ronald Cleminson (Canada), Cong Guang (China), Thérèse Delpech (France), Robert Einhorn (USA), Yuriy Fedotov (Russia), Kostyantyn Gryshchenko (Ukraine), Gunterio Heineken (Argentina), Hannelore Hoppe (UN Department for Disarmament Affairs), Takanori Kazuhara (Japan), Roque Monteleone-Neto (Brazil), Annaswamy Narayana Prasad (India), Marjatta Rautio (Finland), Paul Schulte (UK) and Cheikh Sylla (Senegal). At the associated UN press briefing, the Under-Secretary-General for Disarmament, Jayantha Dhanapala, states that not all 16 commissioners had been

government nominees: in nine instances, the Secretariat had itself “reached out to individual experts to have them appointed”. They would all be serving in their individual capacity. Three had previously served as UNSCOM commissioners. On what they are all to do, he says that that is a matter for the Executive Chairman to decide. “There is an expectation that the college [of commissioners] will meet more regularly than in the past and that they will provide advice to the Executive Chairman.” Asked whether an independent Arab expert had been considered, he replies (according to the subsequent Secretariat summary): “[N]one were, partly for the reason that initial inquiries indicated that there might not be any available to serve. Second, there were some proposals from some governments that were not accepted because the Secretariat wanted to have a balanced group of Commissioners [that] accorded with the Secretariat’s criteria.”

Meanwhile Iraq is continuing to maintain an uncooperative stance towards Security Council resolution 1284 (1999), which established UNMOVIC. On 12 March, Vice President Taha Yassin Ramadan tells an interviewer: “To say Iraq has not categorically rejected the resolution is a misleading statement”.

11 March In Colombia, the government is still considering a draft agreement between itself and the UN International Drug Control Programme (UNDCP) that would enable open field trials of a biological-control agent against coca plants. The agent is a strain of the fungus *Fusarium oxysporum*, which is expected to be capable of prolonged survival in Colombian soil without threatening plant species other than coca. The funding for the trials, estimated at around \$23 million, would come both from the UN and the United States. Related UNDCP projects include research and development in Uzbekistan of a fungal biological-control agent for use against opium-poppy cultivations [see 28 Jun 98]. Chemical-control agents, notably the herbicides glyphosate (replacing paraquat), tebuthiuron and hexazinone, have long been in use against illicit cannabis, coca and opium-poppy crops, but their environmental and other impacts have aroused concern. The future course of certain US aid programmes to Colombia is reportedly linked to Colombian acceptance of the agreement with the UNDCP.

12 March Dugway Proving Ground, Utah, is the subject of a long descriptive article in a local newspaper, the *Deseret News*, based in part on formerly classified documents obtained through Freedom of Information Act requests during the 1990s. These disclose that 1,174 open-air tests of CW agents had been conducted during the Cold War years involving the release of 494,700 pounds (nearly 225 tonnes) of nerve gases. There had also been 328 open-air BW tests, some involving BW-agent simulants, others involving live pathogens or toxins: causative agents of psittacosis, Q fever, plague, tularemia, brucellosis, botulism and anthrax. Human volunteers had been exposed during Q fever tests, and there had been instances of the clouds drifting off base towards populated areas.

13 March In Geneva, the Ad Hoc Group of states parties to the Biological Weapons Convention reconvenes for its nineteenth session of work on the BWC Protocol. Participating are 53 states parties (the same as those that participated in the eighteenth session [see 17 Jan], but with Ireland, Mongolia and Singapore in place of Albania and Iraq) and one signatory state (again Morocco). The session is due to end on 31 March.

13 March In Geneva, on the opening day of the nineteenth session of the BWC Ad Hoc Group, the representative of Portugal, which currently holds the presidency of the European

Union, speaks as follows on behalf of the EU: “The EU believes that the most appropriate manner in which to mark this [BWC entry-into-force 25th] anniversary year would be the early and successful conclusion of the negotiations on a Protocol to strengthen the implementation of the Convention. ... To achieve our goal, we must continue to improve on our working methods. ... We also now need to refine the crucial elements for an effective Protocol that are already well developed within the text before us”. After emphasizing the necessity for a comprehensive declaration regime in which the “EU maintains that it is essential that biodefensive activities and facilities, vaccine production, maximum biological containment, work with listed agents and/or toxins, and other production be declared annually”, the statement goes on to say: “The Protocol must contain an effective mechanism for follow-up of declarations in the form of visits. The concept of visits based on random selection that is now widely accepted is an important step forward. The EU emphasizes its belief that a visit regime must include such visits, selected on the basis of appropriate mechanisms of random selection, to enhance transparency of all declared facilities and activities, to promote accuracy of declarations and to ensure fulfilment of declaration obligations. In order to genuinely achieve this purpose, we believe that these visits must apply to all declared facilities.” The Protocol must include appropriate clarification procedures, provisions for rapid and effective investigations, and specific measures to further international cooperation and exchanges in the field of biotechnology. And “the Protocol must also provide for effective measures regarding transfers/export controls. Those measures, through improved transparency and confidence-building among states parties, must ensure that inadvertent transfer of materials intended for purposes prohibited by the Convention will not occur.” The statement concludes thus: “The EU Member States are ready to support initiatives that will facilitate the negotiation process in order to conclude our work in a quick and effective manner. In this context, we encourage the Chairman to present his vision of a comprehensive text for the future Protocol.”

13 March In Geneva, on the opening day of the nineteenth session of the BWC Ad Hoc Group, a further [see 27 Jan] briefing for delegations is provided by the Quaker United Nations Office in conjunction with the University of Bradford Department of Peace Studies at which three new Bradford *The BTWC Protocol* evaluation papers are presented. One of these — EP 17, by Graham Pearson, Nicholas Sims, Malcolm Dando and Ian Kenyon — proposes a complete text for the Protocol, which is described by its principal author as seeking “to introduce realism and to strike a balance between the different aspirations so as to arrive at a worthwhile and valuable Protocol acceptable to all states parties”. The other two papers, EP 15 and EP 16, are both by Graham Pearson and Nicholas Sims, and evaluate the Preamble and the confidentiality provisions of Article IV. The briefing is attended by 46 people from 32 delegations.

13 March President Clinton issues a notice of continuation of the state of national emergency with respect to Iran, stating that the “actions and policies of the Government of Iran continue to threaten the national security, foreign policy and economy of the United States”. The emergency had originally been declared in March 1995 so as to empower administration action against Iran’s “support for international terrorism, efforts to undermine the Middle East peace process, and acquisition of weapons of mass destruction and the means to deliver them”. However, the administration is reportedly considering easing

some of the trade sanctions, as by scrapping its controls on Iran's three main non-energy exports: caviar, carpets and pistachio nuts.

14 March In the UK, the investigation of CBD Porton Down by the Wiltshire Constabulary [see 19 Aug 99] had cost about £203,000 by the end of February, so Parliament is told by the Home Office. The investigation is occupying 13 police officers fulltime and one part-time. It has two civilian support staff.

14–15 March In Chechnya, Russian forces are using chemical weapons in the mountainous south-eastern region bordering Georgia, according to a press release next day from the Azerbaijan office of the Chechen Republic of Ichkeria. Over subsequent days, accounts of further episodes of alleged Russian chemical warfare in the region are carried by the Kavkaz-Tsentr news agency.

15 March German Defence Minister Rudolf Scharping confirms reports that Germany is preparing to deliver Fuchs NBC reconnaissance vehicles to the United Arab Emirates, saying, on ARD Television, that this is in fulfilment of contracts dating back to the previous government. He does not see the sale to be a violation of the Red-Green coalition treaty [see 17 Oct 98]. *Stern* magazine had reported that the Dubai leadership was buying 64 of the tanks for DM 760 million.

15 March The OPCW Conference Support Programme comes into effect, superseding all previous forms of support provided by the OPCW for participation in scientific meetings or for their organization. This activity, in implementation of Article XI of the CWC, will continue to be administered by the Secretariat's International Cooperation and Assistance division.

15 March At Harvard University, in the Belfer Center for Science and International Affairs, Kay Goss, the Assistant Director for Preparedness, Training and Exercises in the Federal Emergency Management Agency, speaks on *United States' Domestic Preparedness for CBW Incidents* at a session of the HSP Cambridge CBW Colloquium.

15 March The US General Accounting Office issues a strongly critical report on the accounting by the Defense Department to the Congress for the assistance provided to states of the former Soviet Union under the Cooperative Threat Reduction programme.

15 March The US Air Force Ranch Hand Study, which is an epidemiological investigation of possible adverse health effects of Agent Orange that has been running since 1982, receives new Congressional scrutiny at a hearing conducted by the House Government Reform Subcommittee on National Security, Veterans Affairs, and International Relations. There is testimony from the General Accounting Office that discusses the findings from the recent GAO report on the study [see 17 Dec 99].

16 March The US State Department issues a statement to mark the 12th anniversary of the Iraqi CW bombing of the Kurdish town of Halabjah. The statement includes the following: "We are working towards the day when those ultimately responsible for the decision to order the poison gas bombardment of Halabja can be brought to justice before an international tribunal, in a free and democratic Iraq, or wherever they may be found. There is no statute of limitations for Iraqi

crimes against humanity such as Halabja, and these crimes will not be forgotten." The statement's portrayal of the attack on Halabjah is notably less equivocal than earlier accounts by the Clinton administration [see 17 Feb 98]. It says: "On March 16, 1988, an estimated 5,000 civilians were killed and 10,000 injured when Iraqi air forces bombarded Halabja with mustard and other poison gases. Twelve years after the massacre, the people of Halabja still suffer from very high rates of serious diseases such as cancer and birth defects."

16 March President Clinton, during a recorded video message for the opening of the annual Carnegie Endowment international non-proliferation conference, says: "It would be foolish to rely on treaties alone to protect our security. But it would also be foolish to throw away the tools that sound treaties do offer: A more predictable security environment, monitoring inspections, the ability to shine a light on threatening behaviour and mobilize the entire world against it. So this year, we will work to strengthen the Biological Weapons Convention."

16–17 March In Washington, the Carnegie Endowment for International Peace convenes its 8th *Carnegie International Non-Proliferation Conference* on the theme "New Challenges in Asia and America". More than 400 officials and specialists from around the world participate. There are 71 speakers from 14 countries. The several concurrent sessions include one on "WMD Terrorism" chaired by John Parachini [see 16 Jul 99 and 20 Oct 99] of the Monterey Institute with, as panellists, Jerrold Post of George Washington University, Ehud Sprinzak of Hebrew University (Jerusalem) and Jessica Stern of Harvard University. There is also a session on "State Biological Weapon Threats", which is chaired by Marie Chevrier of the University of Texas and has as panellists Elisa Harris of the US National Security Council, Karen Mossenlechner of the Netherlands Foreign Ministry, and Brad Roberts of the Institute for Defense Analyses. Many of the presentations are posted on the internet, at www.ceip.org/programs/npp/.

17 March In Cape Town, Truth and Reconciliation Commission amnesty hearings of former members of the apartheid-era Civil Co-operation Bureau [see 12 Oct 99] are adjourned until 12 June. The Wouter Basson who is reportedly among those seeking amnesty is not the Wouter Basson currently on trial in Pretoria.

20 March In Tokyo, there are observances of the fifth anniversary of the release of sarin nerve-gas within the subway system by Aum Shinrikyo cultists. At a ceremony in Kasumigaseki station, Prime Minister Keizo Obuchi says that the government "will do its utmost to take care of people who are still suffering from the after-effects of the incident". It is reported that some 2,500 people still suffer from after-effects of the gassing.

20 March In Brussels, the Council of the European Union adopts a decision amending the *List of Dual-Use Goods* [see 9 Mar 99] on which rests the European Community regime established in 1994 for the control of exports of dual-use goods. The amended *List* is annexed to the decision. The decision is published in the *Official Journal* on 1 April, whereupon it enters into force, applying 30 days later.

20 March The UK Ministry of Defence tells the House of Commons: "Our assessment is that there is no significant threat

to the UK from weapons of mass destruction at present, but developments continue to be monitored closely”.

20 March In London, at the Old Bailey criminal court, the case against alleged Algerian terrorists [see 26 Oct 98] collapses when an informant for the Security Service (MI5) refuses to testify. Arrested in May 1997 after five months of MI5 surveillance, Sofiane Kabilene, Farid Boukemiche and Sofiane Souidi had been charged with possessing “chemical containers, radio equipment, manuals, documents, credit cards and sums of money which [in the words of section 16(a) of the *Prevention of Terrorism Act*, here used for the first and now possibly the last time] give rise to a suspicion that the articles were in their possession for a purpose connected with the commission, preparation or instigation of acts of terrorism”. The defendants had been said to have been shipping chemicals and other items from Britain to Algeria between 1992 and 1997, with a suggestion being voiced in the French press that, besides explosives, the chemicals were for making sarin or some other poison. But the defendants, allegedly members of the GIA (Armed Islamic Group), had claimed that the materials were needed, not for terrorism, but for self-defence against Algerian government forces, to which the MI5 informant could have testified. Judge Henry Pownall now rules that, without the testimony, the defence had no admissible evidence against this charge, which, since it placed the onus on the defendants to prove their innocence, must therefore be dismissed.

20 March In the United States, where Republican Party interests are alleging wrongdoing by Clinton fund-raiser Charles Trie, *Insight on the News* reports that leaked FBI documents record a deposition by Trie in which he says he had brokered the sale, in mid-1992, of a 500-litre fermenter made in America by Sulzer Biotech Systems to a Chinese entity, Changchun Biological Products Institute, which is suspected of being a biological-weapons facility run by the People’s Liberation Army.

20 March At Harvard University, in the Belfer Center for Science and International Affairs, Serguei Batsanov, director of the Special Projects division in the OPCW Technical Secretariat, addresses a session of the HSP Cambridge CBW Colloquium on *A Farewell to Infancy: The CWC and the OPCW 3 years on*.

20–23 March In the United States, the National Defense Industrial Association convenes *Non-Lethal Defense IV*, which is the fourth in a series of conferences [see 25-26 Feb 98] bringing together military and law-enforcement personnel with responsibilities relating to the development and application of non-lethal weapons with, as the conference brochure puts it, “industrial and government agencies that can meet their needs”. The conference, to take place in Tysons Corner, Virginia, is to be co-hosted by the Defense Department Joint Non-Lethal Weapons Directorate, the Army Research Laboratory, the National Institute of Justice, and the Oak Ridge National Laboratory. It is chaired by John B Alexander [see 24-28 Jan 94]. Among the papers advertised is one on “Chemical immobilizing agents for anti-personnel use” by Parker Ferguson [see 14-17 Nov 95], who is now with OptiMetrics Inc.

The Joint Non-Lethal Weapons Directorate is just now posting on the internet its annual report for 1999, which notes trends and accomplishments in some detail, including joint US/UK urban-operations wargaming. An unclassified publication, its mention of work on non-lethal weapons based

on toxic chemicals is confined to references to CS, pepper spray, and “calmative and malodorant payloads” (p 20). The annual report does, however, describe work on microencapsulation and on the Overhead Liquid Dispersal System. There is also a brief account of the survey of “certain biomaterials” being conducted for the Directorate at the University of New Hampshire.

20–25 March In Bonn, under the auspices of the UN Environment Programme, the Intergovernmental Negotiating Committee for an International Legally Binding Instrument for Implementing International Action on Certain Persistent Organic Pollutants reconvenes [see 6-11 Sep 99] for its fourth session, INC-4. Participating are 121 countries, 11 UN bodies and other specialized agencies, 7 other intergovernmental organizations and 81 non-governmental organizations and other bodies: a total of 501 people. The fifth and final round of negotiation is set for early December, in South Africa, to be followed by the Diplomatic Conference and signing ceremony in Sweden in May 2001.

21 March In North Korea the Foreign Ministry issues a memorandum detailing what it describes as “the truth behind the mass killings that the US forces committed against the people of the northern part of the republic during the Korean War”. The lengthy memorandum, which is subsequently publicized at press conferences in Beijing and at UN headquarters in New York, is in four main parts, of which one is entitled “Mass killings by germ and chemical weapons”. Here it is said, with additional detail, that US forces dropped germ bombs on 804 occasions during January to March 1952 in 169 regions, and that they also dropped poison-gas bombs on 33 occasions during 27 February to 9 April 1952.

21 March The US General Accounting Office releases a new report on *Combating Terrorism*. Following its earlier report [see 12 Nov 98], in which it had raised concerns about duplication in the training being given to first-responders as regards chemical, biological, nuclear or radiological terrorism, it had been asked to determine (1) the principal federal organizations that provide weapons of mass destruction training to first responders, (2) whether the training is well coordinated among federal organizations, and (3) actions being taken to improve the federal government’s role in the training. All of this the report does, and it also recommends specific steps to reduce duplication.

21 March The US Department of Energy announces that its Secretary, Bill Richardson, has appointed a blue-ribbon panel to review and assess the department’s nonproliferation programmes in Russia [see 22 Feb 99 and 15 Jun 99], and to recommend how its nonproliferation efforts can be enhanced. The panel is to be co-chaired by former White House Counsel Lloyd Cutler and former Senate Majority Leader Howard Baker.

21 March In the US Senate, the Committee on Foreign Relations begins a series of four hearings on *United States and International Nonproliferation Policy*. The series starts with a day on proliferation threats and policy formation, with a panel of witnesses on each topic.

The first panel comprises the Director of Central Intelligence, George Tenet; the director of the CIA Nonproliferation Center, John Lauder; and the CIA Deputy Director for Intelligence, John McLaughlin. DCI Tenet testifies at some length on CBW weapons proliferation. During this he says: “About a dozen states, including several hostile to Western democracies — Iran, Iraq, Libya, North Korea and

Syria — now either possess or are actively pursuing offensive biological and chemical capabilities for use against their perceived enemies, whether internal or external. Some countries are pursuing an asymmetric warfare capability and see biological and chemical weapons as a viable means to counter overwhelming US conventional military superiority. Other states are pursuing BW programs for counterinsurgency use and tactical applications in regional conflicts, increasing the probability that such conflicts will be deadly and destabilizing.”

The second panel comprises the director of the National Defense University (NDU) Center for Counter-Proliferation Research, Robert Joseph; the research director of the NDU Institute for National Security Studies, Steve Cambone; and the director of the Carnegie Endowment Nonproliferation Project, Joseph Cirincione. Ambassador Joseph testifies to the importance of the nuclear-weapons Non-Proliferation Treaty (NPT), the BWC and the CWC in asserting norms of behaviour that “make an important contribution to the goals of non-proliferation” but he distinguishes between states that do and do not respect international norms. The latter, he says, view the treaties “as an opportunity to further their weapons programs”, as “was the case for the Soviet Union when it used the BWC as a cover for an expanded offensive biological weapons program”. He continues: “Because membership in these international conventions bestows legitimacy and, at least for the NPT, access to sensitive materials and technologies, my recommendation for dealing with states such as North Korea, Iraq and Iran is not to seek their participation in these conventions but rather to keep them out. Instead of offering concessions for commitments that we know will be violated, we should practice strict containment of these regimes, beginning in our own national non-proliferation and security policies.”

21–25 March In Russia, a team led by the Chairman of the OPCW Executive Council, Ambassador Pichardo of Mexico, and including observers from four OPCW member states, meets in Moscow with Deputy Foreign Minister Gregory Mamedov and Munitions Agency Director-General Zinovy Pak. The visit follows a Russian invitation aimed at facilitating Council deliberations on the Russian request for an extension of the CWC deadline for destruction of Category 1 chemical weapons. The team visits the site where Russia’s first chemical-weapons destruction facility is being built, at Gornyy.

22 March The US Defense Department Chemical and Biological Defence Program (CBDP) is described in detail in Congressional testimony by the head of the Directorate of Chemical-Biological Defense in the Defense Threat Reduction Agency. The testimony includes a breakdown of the FY 2001 budget request of \$836 million. The request exceeds the previous year’s by more than \$100 million, most of the rise being in procurement (\$474 million as compared with \$381 million in FY 00). The FY 01 request for research, development, test and evaluation (RDT&E) funding, \$362 million, is substantially less than the previous year’s (\$410 million).

Congressional testimony from the General Accounting Office observes that, as regards non-medical chemical and biological research and development, several other military and civilian agencies are now also working in the area, overall funding having increased significantly since 1996. For non-medical basic and applied CB research and prototype development, the CBDP now accounts for less than 30 percent of total programming: its \$50.7 million in FY 01 funding is exceeded by the Energy Department’s Chemical and Biological Nonproliferation Program [see 20 Jul 99] (\$63 million for FY 01) and also by the Defense Advanced Research Projects Agency

Biological Warfare Defense Program [see 20 Apr 99]. Moreover, the interdepartmental body whose job it is to facilitate interagency research and development for combatting terrorism, the Technical Support Working Group [see 28 Feb 97], has now become a rather substantial funder in this area. The GAO cautions against ineffective coordination of the different programmes.

This day the Defense Department also releases what is its seventh Annual Report to Congress on the CBDP, as required under the FY 1994 Defense Authorization Act. The report is a 269-page document presenting fine detail, including particulars of the Department’s involvement in efforts to implement the CWC.

23 March Kazakhstan deposits its instrument of ratification of the Chemical Weapons Convention. In 30 days time, on 22 April, it will thus become the 132nd state party to the treaty.

24 March The UK Defence Ministry releases the *Report by the Academy of Medical Sciences to the Chief Scientific Adviser, Ministry of Defence on the Zinc Cadmium Sulphide dispersion trials undertaken in the United Kingdom between 1953 and 1964*. The report, from a team led by Peter Lachmann, Emeritus Professor of Immunology, Cambridge University, had been commissioned in response to concerns about possible long-term health effects of the trials, which had been conducted in order to assess the feasibility of off-target biological-warfare attack. Nearly 5 tonnes of ZnCdS particulate tracer material had been released over southern Britain from the ground, air and sea in a total of 76 trials during 11 years.

As to cadmium toxicity, the report concludes that “the cadmium exposure arising from these trials did not significantly increase the level to which the population is normally exposed”. It says: “We are also reassured by the fact that no increased incidence has been claimed for the diseases that are particularly associated with cadmium toxicity. The primary target of cadmium poisoning is the kidney. Although we have not been able to compare the incidence of kidney disease in more and less exposed areas, informal soundings ... do not suggest an unusual incidence of renal disease in Dorset where the highest ZnCdS particle numbers were recorded; and kidney disease has not given rise to any public concern in this connection. We were further reassured by discovering that the people largely involved in the dissemination of the cadmium sulphide from aircraft who will have been exposed to very much larger amounts than anybody on the ground suffered no ill effects.”

The report states its final conclusion thus: “Although we fully understand the public unease that ensued when it was discovered, many years after the event, that large areas of Britain had been subjected to this form of experimentation, the existing evidence shows that no public health danger arose”.

Notwithstanding the spin put on the report in the Ministry’s statements about it (e.g., “no evidence of increased incidence of diseases associated with cadmium toxicity”, &c &c), the report meets with criticism. Local people in Dorset who believe their health has been damaged by the trials are aggrieved at not having been consulted. The report’s estimate of cadmium dosages inhaled from the disseminated tracer clouds are stated to be a hundred times too small; and certain other aspects of the risk-assessment are described as “inadequate”.

24 March In New York, the UN Department of Disarmament Affairs jointly with the International Centre for Genetic Engineering and Biotechnology (ICGEB) hosts a symposium to mark the 25th anniversary of the entry of the BWC into force, *Strengthening the Biological Weapons Convention (BWC)*:

International Cooperation and Exchanges in the Field of Biotechnology. The co-chairmen and opening speakers are Jayantha Dhanapala, UN Under Secretary-General for Disarmament Affairs, and Adolfo Taylhardat, President of the ICGEB Board of Governors. Keynote speakers are Joshua Lederberg and ICGEB Director Arturo Falaschi on technical cooperation in biotechnology and Article X of the BWC; Tibor Toth on the work of the BWC Ad Hoc Group; Steiner Institute Director Jack Melling and Nikolai Gnuchev (Vice-Director, Institute of Gene Biology, Russian Academy of Sciences) on the role of the biotechnology industry in technical cooperation and exchange; and World Bank Lead Health Specialist Demissie Habte and WHO scientist Ottorino Cosivi on biotechnology and medicine — cooperative efforts in preventing and fighting outbreaks of diseases.

27 March In Hanoi, visiting Indian Defence Minister George Fernandes and his Vietnamese counterpart Pham Van Tra sign an agreement that will enable military cooperation between the two countries to be institutionalized. There is to be cooperation in jungle-warfare and other training, and the Indian defence research organization will, according to the Indian press release, be “placing at the disposal of Vietnam its research on countering chemical warfare effects”. India had proposed the CW element after the Vietnamese side had outlined “the major problem it was facing in overcoming the effects of Agent Orange even in third generation children after the unification war in 1975”.

27 March In Geneva, at the Palais des Nations, a seminar to mark the 25th anniversary of the entry of the BWC into force, *25 Years of the Biological and Toxin Weapons Convention: Assessing Risks and Opportunities*, is organized jointly by the United Nations Institute for Disarmament Research (UNIDIR), the Federation of American Scientists (FAS), the International Security Information Service (ISIS), the Verification, Research, Training and Information Centre (VERTIC) and the University of Bradford Department of Peace Studies. It is chaired by Ambassador Tibor Toth and includes presentations by Nicholas Sims (“The Convention in historical perspective: the first and the next 25 years”), Mark Wheelis (“Biological weapons in the 21st Century: the Convention, the Protocol, and the changing science”), Minister Antonio de Aguiar Patriota of the Brazilian UN Mission (“The importance of technical co-operation for the Biological and Toxin Weapons Convention”) and UNIDIR Director Patricia Lewis (“Putting the BTWC in the wider disarmament context”).

27 March In Britain, the Police Complaints Authority release their report *CS Spray: Increasing Public Safety?*, which is based on a survey of police forces in England and Wales during the year ending October 1999. Assaults on police officers were found to have fallen by 19 percent in those forces that had accepted the CS Spray weapon since its introduction but to have risen by more than 10 percent in those forces that had not accepted it (Northamptonshire, Nottinghamshire and Sussex). In about 20 percent of cases where police have used CS Spray to deal with potentially violent subjects, it has failed to have an effect. In more than a third of 135 cases in which complaints had been lodged against police officers using the weapon, the guidelines for use had apparently not been followed, the officers being accused of spraying from the potentially injurious range of less than a metre. Police seemed to be using CS Spray nearly as much as an offensive weapon as one of self-defence. Once again, the Authority recommends urgent

research into the possible dangers of the solvent, MIBK, used in the weapon.

27–28 March In New York, at the Rockefeller Center, the defence ministers of countries involved in the SHIRBRIG (Standby Forces High Readiness Brigade) Initiative — Austria, Canada, Denmark, the Netherlands and Poland — are among participants in the SHIRBRIG Seminar, aimed at improving the capacity of the United Nations for responding to crises. Addressing the meeting, UN Secretary-General Kofi Annan says: “From the changing nature of conflict to the changing nature of sovereignty, we know that we must think anew in order to meet successfully the challenges to peacekeeping in the 21st century. ... If we show up looking small and weak, we are inviting trouble.”

27–31 March In Arlington, Virginia, the US Joint Non-Lethal Weapons Directorate convenes a *Non-Lethal Weapons Joint Mission Area Analysis Conference* in order to identify and analyse known operational deficiencies, to review required operational capabilities, and to examine the on-going development of non-lethal technologies. Current NLW research and development thrusts are classified by the Joint Directorate into five categories: Acoustics, Entanglements, Kinetics, Riot Control Agents, and Vehicle Stoppers. The “Riot Control Agent” category includes: “Development of crowd control systems that confuse, stop, neutralize, disable, disorient, distract, disperse, or isolate groups of people or potential threats over various terrain and environmental conditions”.

28 March In Amman, 28 Arabs linked to Osama bin Laden are indicted on terrorism charges arising out of what is said to have been a conspiracy to attack Americans and Israelis during New Year celebrations on Mount Nebo. Jordanian Attorney-General Maamoun Khassawneh says that, of those indicted, 13 Jordanians, an Iraqi and an Algerian have been in custody since December [see 30 Jan], while the others are still at large, possibly in Afghanistan, Britain, Lebanon, Pakistan or Syria. Investigators had found explosives, radio-controlled detonators, ammunition and, reportedly, nerve gas hidden at a farm outside Amman, and Jordanian investigators and US FBI sources are later quoted as saying that nerve-gas grenades were part of the arsenal for the attacks.

Subsequent reporting makes little mention of the nerve gas that was said to have been found. Inquiries identify the Jordanian court indictment as the source of the nerve-gas information, but it transpires that what the indictment had actually identified was not nerve gas but “material that can be dangerous when sniffed”. Whether the FBI sources had other information is not publicly known.

The trial opens in the State Security Court on 20 April, when most of the defendants decline to enter pleas, and the hearing is adjourned until 7 May.

28 March In the US Senate, the Committee on Foreign Relations conducts the third in its series of four hearings on *United States and International Nonproliferation Policy*. The focus is on the Middle East. The witnesses are the two past Executive Chairmen of UNSCOM, Rolf Ekéus and Richard Butler, plus Anthony Cordesman of the Center for Strategic and International Studies. Only the last of these has a prepared statement, with which he has submitted two background papers.

Ambassador Ekéus presents reasons why UNSCOM succeeded in its task during 1991–97, and from this he identifies three preconditions for UNMOVIC succeeding: skilled, experienced and high quality staff; independent access

to aerial reconnaissance imagery; and capacity for collecting data from many sources. Ambassador Butler, clearly sceptical that UNMOVIC will succeed, proposes the creation of a United Nations Council on Weapons of Mass Destruction: “a place to which credible reports, progress reports, on the prospering, or lack of it, of the work under the nonproliferation treaties would be forwarded, a place at which the nations of the world would sit and consider those reports and determine what action should be taken, including by way of enforcement”.

28 March The US Department of Veterans’ Affairs announces that, in conjunction with the Defense Department and other federal agencies, it is launching a nationwide study to determine whether there is an association between military service during the Gulf War and occurrence of amyotrophic lateral sclerosis (Lou Gehrig’s disease).

28-30 March In Lima, the OPCW Technical Secretariat joins with the Peruvian CWC National Authority in hosting a regional meeting of national authorities of member states in the Latin American and Caribbean region.

29 March The OPCW Technical Secretariat issues a destruction certificate for “the last French CWPF”, so the Director-General tells the Executive Council five days later, adding: “As of 31 March 2000, the total number of certificates confirming the destruction of CWPFs [Chemical Weapons Production Facilities] which had been provided to seven States Parties thus stood at 21.”

29 March The US Defense Department announces new findings from the Air Force Ranch Hand Study. In the words of Lt-Gen Paul Carlton, the Air Force Surgeon General, the findings offer “the strongest evidence to date that Agent Orange is associated with adult-onset diabetes and some of its known complications”. The Ranch Hand study has been comparing the health of 859 veterans of Operation Ranch Hand (herbicide spraying during the Vietnam War) to the health of 1232 other Vietnam-War veterans. The incidence of diabetes was found to be the same in both groups, but differed when adjustments were made for blood dioxin levels: Ranch Hand veterans with the lowest level of dioxin in their blood had a 47 percent lower risk of diabetes than those with the highest level, and the same trend was found in the non-Ranch-Hand veterans. Besides diabetes, the new findings also indicate an association between herbicide-spraying and heart disease, but they do not link Agent Orange and cancer. The findings are now being reviewed by the National Academy of Sciences, which will report to the Department of Veterans Affairs.

29 March At Harvard University, the Belfer Center for Science and International Affairs announces publication of a new BCSIA Study in International Security, *Toxic Terror: Assessing Terrorist Use of Chemical and Biological Weapons*, done in conjunction with the Monterey Institute of International Studies Center for Nonproliferation Studies. The volume is a collection of 12 case studies of groups and individuals who, during the period 1946-98, allegedly acquired or employed CBW agents.

30 March Cuban Foreign Minister Felipe Perez Roque, during his address to the BWC Ad Hoc Group in Geneva, cites his country as “a good example of the need to enhance the effectiveness of the Convention and improve its implementation”. He continues: “Our country has fallen prey to occasional acts of aggression with biological agents — where practically all our major crops and agricultural/livestock

productions, on which the population largely depends, have been damaged through the deliberate introduction of pests into our territory. Something even more baneful can be added: the use of biological agents to cause diseases in human beings. Just to mention a few concrete examples on a long list of biological acts of aggression:

- In 1971 and 1980, the unusual outbreaks of African swine fever made it necessary to sacrifice around 800,000 pigs that subsequently affected the country’s economy.
- In 1978, the sugar cane *roya* was introduced into the country. Owing to its devastating effects, in the 1980-1981 harvest alone almost one million tons of sugar — the main export item of the Cuban economy — fail to be produced.
- In 1979, there were unusual reports on the blue mold of tobacco. In this case, conservative estimates pointed to losses amounting to almost US\$ 350 million that year.
- In 1981, the most heartrending case of biological warfare against Cuba was committed: the epidemic of hemorrhagic dengue fever, which took the lives of 158 people — including 101 children.

“In many cases, there have been duly documented reports on the involvement of deliberate agents. In others, we have had the explicit confirmation of the guilty parties to the biological aggression. The foregoing has been included as part of the Lawsuit [see 2 Nov 99] of the People of Cuba against the Government of the United States of America for damages derived from the economic blockade and the physical aggression of which we have become victims.”

The statement, in contrast to evidence presented by in the Havana lawsuit, makes no mention of the 1996–97 Cuban thrips-infestation which, following Cuban charges against the United States of biological warfare had led to the first, and thus far last, formal consultative meeting under the BWC [see 15 Dec 97].

30 March The US Commerce Department has now, on this deadline day, received 593 declarations from chemical industry in accordance with its CWC implementing regulations [see 30 Dec 99]. The number of industrial plant sites that produce, consume or import/export CWC-scheduled chemicals, and which are therefore required to declare data on those chemicals, has been estimated at about 2,000. The director of the Office of Chemical & Biological Weapons Conventions in the Department’s Bureau of Export Administration, Steven Goldman, had the day previously told an audience of chemical industry groups that few US companies had filed the declarations required of them.

30 March The US Institute of Medicine issues a report on the safety of the vaccine being used by the Defense Department in its Anthrax Vaccine Immunization Program. In February, the Department had asked the Institute to undertake a comprehensive study of the safety and efficacy of the vaccine. The study is expected to take two years to complete, and the present report is based on information from another Institute study, for the Department of Veterans Affairs that had started in January 1999, on health effects associated with exposures during the Gulf War, anthrax vaccine being one of the exposures under review. The report presents the conclusion that, “in the peer-reviewed literature there is inadequate/insufficient evidence to determine whether an association does or does not exist between anthrax vaccination and long-term adverse health outcomes”. Noting also the virtual non-existence of research on possible long-term effects, the Institute says that, if the Defense Department is to be credible

in its assurances that AVIP is safe, it must publish the results of its on-going studies in the peer-reviewed scientific literature.

31 March In Geneva, the Ad Hoc Group of states parties to the BWC concludes its nineteenth session of work on the BWC Protocol. A new Rolling Text is adopted, the twelfth version thus far, in the procedural report of the session, where it constitutes Annex I in Part I. Part II comprises the customary Annex IV setting out *Proposals for Further Consideration by the Chairman and Friends of the Chair*, these being new FoC texts that delegations have become increasingly inclined to use as the basis for future work, even though the procedural report of the session reaffirms the Rolling Text as the only basis for negotiations in the AHG. Square brackets have continued to be eliminated from the rolling text, and those that remain have now been placed in one or another of three categories — “Little controversy, relatively easy to resolve”, “Medium level of disagreement”, or “Strong conceptual differences in views”. The session has been characterized by an unusual number of ministerial statements (from Australia, Cuba, Finland, Hungary, Mexico, the Netherlands, New Zealand, the UK and the USA), which, like the tone of many of the other national statements, are at least indicative of political will to conclude the Protocol. But actual substantive progress has been slower than usual this session, which the Ad Hoc Group chairman, Tibor Toth of Hungary, says in interview may indicate that an adjustment in negotiating techniques is needed.

1 April In Kazakhstan, the former Soviet chemical/biological production facility at Pavlodar [see 1 Mar 93] was for making chemical weapons, according to the new issue of *The Nonproliferation Review*. This states, further, that Pavlodar Chemical Plant still produces such dual-use chemicals as phosphorus trichloride and phosphorus pentasulphide, which it sells on domestic and international markets, and also that a former director of the facility has sold corrosion-resistant chemical process equipment and other such dual-use goods to unknown buyers.

2–6 April The US Army Surgeon-General and the Assistant Defense Secretary for Health Affairs cosponsor *Medical Initiatives Conference — Weapons of Mass Destruction 2000*. Held in Crystal City, Virginia, this conference and exhibition is intended to highlight Defense Department initiatives and capabilities in support of the domestic medical response to weapons of mass destruction.

4 April In Moscow, Russian Munitions Agency Director-General Zinoviy Pak and US Ambassador James Collins preside over a ceremony to open the Central Analytical Laboratory [see 21 May 96], which has been built under the US Cooperative Threat Reduction programme to support the Russian chemdemil effort. The new laboratory is located, not within Vernadski Institute of the Russian Academy of Sciences, as had initially been proposed, but in Building 14 of the State Scientific Research Institute of Organic Chemistry and Technology (GosNIIOKhT). Thus far it has cost \$18.5 million.

4 April On the OPCW website is posted the opening statement by Director-General José Bustani to the on-going session of the Executive Council. [Note: This posting of the DG Opening Statement has now become an unparalleled point of transparency for the outside world into the workings of the OPCW in near-real time.]

In relation to Council decision-making, the Director-General speaks of a need in some areas for “political ‘critical mass’” to

be achieved if there is to be a major breakthrough, and he says: “It is, indeed, disquieting to note that the sense of urgency for resolving tasks which have been on the Council’s agenda for quite some time is simply not yet there”. He continues: “I am concerned that we seem to be developing a culture in which it is politically easier for some delegations to block solutions rather than to work cooperatively to achieve results. In such a culture any consensus decision, irrespective of its actual content, is viewed as a significant achievement.”

The statement touches on all items of the Council’s agenda. In regard to the impending commencement of routine inspections in the US chemical industry, the Director-General says: “the United States so far does not appear to be in a position to receive many more than 18 industry inspections in 2000 — a number which, it is true, is double that received by any other State Party in a comparable period of time, but which still falls far short of the assumptions specified in the 2000 programme and budget”.

4 April The US Special Negotiator for Chemical and Biological Arms Control Issues, Donald Mahley, testifies before the Senate Foreign Relations Committee, which is considering his nomination to the rank of ambassador. As Special Negotiator he heads the US delegation to the BWC Ad Hoc Group and serves as US representative to the OPCW. He is also Managing Director of the US CWC National Authority. He portrays negotiation on arms control, disarmament and nonproliferation as “another aspect of enhanced national security”, alluding here to his 27-year active service as an officer of the US Army. He continues: “Where international agreements can supplement other security measures both with a multiplier effect and as a lower-cost alternative to active measures, they are justified and useful to the United States. They should, however, be subjected to the same kind of risk-benefit analysis as other security components.” Later, after speaking about the CWC, he says: “The Biological Weapons Convention is another important link in the international chain attempting to proscribe proliferation and potential use of weapons of mass destruction. The United States devotes an increasing amount of funds and technical know-how to protecting our own people and installations from the potential of biological weapons attack. We also have the preeminent biotechnology industry in the world. Negotiating a Protocol to the Biological Weapons Convention thus involves a firm requirement, as does the Chemical Weapons Convention, to enhance transparency of relevant activities while ensuring protection of national security and proprietary business information. The task, however, is an order of magnitude more difficult, since the components of biological work are much smaller and less distinct than those potentially associated with a chemical weapons effort.”

5 April In Pyongyang, North Korean and Japanese negotiators are engaged in talks on the establishment of diplomatic relations. Among the agenda items on the Japanese side is the question of suspected North Korean development of nuclear and CBW weapons.

5 April Colombia deposits its instrument of ratification of the Chemical Weapons Convention. In 30 days time, on 5 May, it will thus become the 133rd state party to the treaty.

5 April In The Hague, the OPCW Executive Council is addressed for the first time by the head of state of a CWC state party, King Albert II of Belgium.

5 April At Harvard University, in the Belfer Center for Science and International Affairs, Simon Whitby, a doctoral candidate of the University of Bradford, UK, addresses a session of the HSP Cambridge CBW Colloquium on *Anti-Crop Biological Warfare and Its Control*.

6 April Iraq, under Saddam Hussein, “has never attempted to establish a strategic industrial capability for manufacturing weapons” abroad, writes former UNSCOM Chief Inspector Scott Ritter in *The Washington Times*, “with absolute certainty”, contradicting an editorial there that had warned against an Iraqi-North Korean-Sudanese axis.

6 April In New York, the UN Security Council receives, and a week later approves, the organizational plan for UNMOVIC that has been prepared by UNMOVIC Executive Chairman Hans Blix in consultation with UN Secretary-General Kofi Annan. The plan envisages a tightly controlled, technical, leakproof body with the right to unrestricted access in Iraq. It would have four operational divisions — planning & operations, analysis & assessment, information, and technical support & training — that seem to be well insulated from political pressures. Dr Blix tells reporters that he will now begin interviews to form a core staff of about 40 full-time professionals. Former UNSCOM staff are free to apply, though about two-thirds have already left New York. Iraqi authorities are reported to have forwarded a list of seven UNSCOM senior inspectors, among them Nikita Smidovich of Russia, who would not be allowed back into Iraq. Deputy Prime Minister Tariq Aziz says, on 15 April, that neither he nor any other member of the Iraqi leadership has ever indicated that Iraq will allow the resumption of weapons inspections as outline in resolution 1284 (1999): “I would like to reconfirm what we have said before, that US and British efforts to impose a new unfair resolution will never succeed”.

6 April In California, at Stanford University, a technical seminar on *CBW Agent Detectors* is given by Dr John Finn of the University’s Center for International Security and Cooperation. Another technical seminar, on *Preventing Proliferation from the Former Soviet Chemical and Biological Weapons Complexes*, is given by Dr Amy Smithson of the Henry L Stimson Center in Washington DC.

7 April President Clinton designates the Attorney General to replace the Secretary of Defense as the lead federal official with responsibility for carrying out the Domestic Preparedness Program — originally the Nunn–Lugar–Domenici Program, now known as the Emergency Response Assistance Program, the purpose of which is to provide civilian personnel of federal, state and local agencies with training and expert advice regarding emergency responses to a use or threatened use of a weapon of mass destruction or related materials, and also to test and improve the responses of such agencies to emergencies involving chemical or biological weapons and related materials.

7 April The US General Accounting Office issues a further report in its *Combating Terrorism* series, this one on *How Five Foreign Countries Are Organized to Combat Terrorism*. The report notes that, with the federal government having spent about \$10 billion during FY 1999 to combat terrorism, and with over 40 federal departments, agencies and bureaus having an antiterrorist role, Congress has been asking who is in charge, how federal preparedness is organized, and how the resources are being allocated. The GAO had the day previously given testimony on these very matters to a Congressional

subcommittee. In the case of the present report, its Congressional requesters had asked to be told how other governments were coping, “recognizing that other countries have had more experience dealing with terrorist attacks within their borders”. The five countries are Canada, France, Germany, Israel and the United Kingdom. The report describes their respective organizations and identifies similarities between them. One such similarity, attributed to resource constraints, is that all five countries base their resource allocations on threat assessments, meaning that resources were targeted at likely threats, not at vulnerabilities. The report says: “Officials from all five countries cited the threat of terrorists using chemical, biological, radiological, and nuclear weapons as particularly unlikely”.

This is not to say that the CBRN terrorist threat is ignored, but rather that, in all five countries it falls within the category of “less likely but emerging threats” against which existing capabilities are maximized rather than new capabilities created. The report says: “For example, the same capabilities used to respond to a fire, industrial explosion, or chemical spill would be used for a terrorist incident involving [CBRN] weapons. In addition, officials in each country said additional capabilities from neighboring states, provinces, cities, or national governments could be used by local authorities if the situation exceeded their capabilities. For example, Germany plans to rely on existing capabilities within the states rather than develop new federal capabilities. Israel has not developed new capabilities, but it has a nationwide program that provides gas masks and training to its citizens for defense against chemical or biological attack in wartime that officials said has use for terrorist attacks. The countries generally did not have major training programs in place to train emergency response personnel for [CBRN] attacks. However, the United Kingdom has a limited program to train selected police officials as incident commanders and is considering a training program for response personnel in selected locations [see 5 Aug 99]. Also, Canada has launched a policy initiative to develop a strategy to strengthen national counterterrorism response capability, particularly the ability to respond to [CBRN] terrorist attacks. Only France has created new capabilities to respond to [CBRN] terrorist attacks.”

7- 8 April In Russia, near Shchuch’ye in the Kurgan region of southwestern Siberia, a ground-breaking ceremony [see also 25 Sep 98] is scheduled for the chemdemil facility that is being constructed there with assistance from the US Cooperative Threat Reduction programme and perhaps also from other governments. Reporters visiting this impoverished region encounter a local population wary of what it is told about the proposed facility. Among the 5,450 agent-tonnes of nerve-gas munitions stored at Shchuch’ye awaiting destruction are 718 FROG and Scud warheads of the bulk-filled type and also, reportedly, 42 bomblet-filled warheads for the SS-21 missile [see also 8–10 Jul 97].

8 April In Manama, Bahrain, US Defense Secretary William Cohen is part way through a round of visits to the Gulf states and other allied Arab countries, including Jordan, Saudi Arabia and Egypt. He says at a press conference: “I have been discussing with all of the Gulf states the issue of the Cooperative Defense Initiative, so-called CDI [proposed the year previously]. And that is to discuss ways in which we could have what we called a shared early warning, if someone were to launch an attack against any one of the other Gulf states and of course our own forces in the region that we could have an early warning capacity to help minimize the kind of damage that

could be inflicted. But secondly to also prepare each of the countries for dealing with a chemical, biological type of attack, and that could come from certainly Iraq. ... We do know that Iran also is trying to acquire a nuclear capability as well as chemical and biologicals. So that is the reason for the desire on our part to try to develop a cooperative arrangement throughout the Gulf region to prepare defenses against that, both active and passive."

8–9 April In the Netherlands, the Pugwash Study Group on Implementation of the CBW Conventions conducts its 13th workshop, *CWC and BWC Experience Sharing*, at the Oud Poelgeest Conference Centre in Oegstgeest. Participating are 37 people from 15 countries.

9 April In Canada, Hatfield Consultants of Vancouver are publishing the third in the series of increasingly detailed surveys they have undertaken since 1993 [see 30 Oct 98] in Aluoi Valley, Viet Nam, a remote area heavily sprayed with chemical herbicides by US forces during the Vietnam War. The surveys have been done in collaboration with the 10-80 Committee of the Vietnamese government. Dioxin, demonstrably from Agent Orange operations, is now showing up in people born long after the spraying ended, indicating its persistence in the food chain. In its Overview, the new report says: "Results of the 1999 investigation confirmed our earlier studies that elevated levels of dioxin existed in valley soils and human food, with the highest level of contamination found in the vicinity of a former US Special Forces base at A So (formerly named A Shau). Fish and duck tissues, human blood and human breast milk collected from the village nearest the former base had the highest levels of dioxin contamination, relative to other regions of the valley. As a result of the contaminated food chain in the vicinity of the base, adults and children born after the war are continuing to ingest contaminated foods. Health studies suggest that inhabitants of the village situated nearest the most highly contaminated former base experience a higher level of birth defects relative to villages studied in other areas of the valley. Many other former US and south Vietnamese military installations throughout Viet Nam could serve as 'dioxin reservoirs' that are continuing to contaminate local food chains, and humans living in the vicinity." Vietnamese officials and scientists continue to associate the incidence of birth defects and several kinds of cancer with the spraying.

10–12 April In The Hague, the OPCW Confidentiality Commission reconvenes for its fourth session, during which it engages in a one-day dispute-resolution workshop considering a mock case involving a dispute of confidentiality between two states parties.

The Commission considers how best to fulfil the request from the eighteenth session of the Executive Council that it undertake a number of tasks relating to confidentiality. In this connection, it reviews the remedial action taken by the Secretariat on the issues referred to in document EC-XVIII/DG.11 (which is not in the public domain, but which evidently concerned standard operating procedures for the processing of Final Inspection Reports). Acknowledging that the Council's request cannot be adequately fulfilled during the session, the Commission requests that it hold a special session to review further the Secretariat's confidentiality policy and offer advice to the Director-General. To prepare for this special session, the Commission establishes a workshop group and draws up a work programme for the group and the Secretariat.

The Commission also considers the arrangements for its registry, which is being established in the Permanent Court of

Arbitration. It had not proved possible for a full audit of the facilities to be carried out at the time scheduled for it, and the Commission now decides that it should be carried out by 30 June at the latest.

The Commission elects Mr Camilo Sanhueza Bezanilla to be its new chairman, and Dr Laurraine Lotter, Dr Ramamoorthy V Swamy, Dr Jaroslav Fiedler and Prof Dr Dieter Umbach to be its new vice-chairmen.

10–12 April In Belgrade, the Director of Special Projects in the OPCW Technical Secretariat, Serguei Batsanov, holds talks with Serbian officials.

11 April In the UK House of Commons, the Foreign Affairs Committee continues with its inquiry into weapons of mass destruction, taking oral evidence on CBW from Professors Malcolm Dando and Graham Pearson of the University of Bradford and from Dr Tom Inch of the Royal Society of Chemistry. The committee also has written evidence on the subject.

11 April In Washington, the operational effectiveness of the projected National Missile Defense system is evaluated in a detailed technical study, *Countermeasures*, released by a panel of prominent US scientists affiliated with the Union of Concerned Scientists and the Security Studies Program of the Massachusetts Institute of Technology. The basic conclusion of the 175-page study is that the NMD could be defeated by simple countermeasures and should not be built. Moreover, the system would not be capable of defending against incoming warheads that dispense multiple submunitions shortly after the boost phase, which is a likely mode of attack for CBW agents.

11–14 April The US Army War College conducts its eleventh Annual Strategy Conference on the theme *to insure domestic Tranquility, provide for the common defense...* at Carlisle Barracks. Among the presentations on the second day is one by the deputy head of the US Military Academy Social Sciences Department, Colonel Russ Howard, on "Biological and Chemical Weapons: Bona Fide Threat or Bureaucratic Hype?".

12 April In Taiwan a symposium on defence against nuclear and CBW weapons is opened by the Chief of the General Staff, Tang Yao-ming. He says that "the backdrop and the purpose of the seminar was the rising nuclear and bio-chemical threat from the Chinese communists". He reaffirms Taiwan's often stated policy of abstaining from CBW armament [see 31 Jan 91, 26 Apr 95, 2 Aug 98]. He says that even in the face of heightened military threats from mainland China, Taiwan has vowed not to possess, manufacture or use nuclear or biochemical weapons under any circumstances. "The military will abide by the country's consistent policy and comply with international treaties. ... Regarding biochemical preparedness, the military would only engage in the development of protection equipment and protection training programs."

Thirteen papers are presented at the symposium, including one by Professor Chung Chien of the Armed Forces University War College, who states that the Chinese People's Liberation Army imported 500 tonnes of sarin toxic chemical materials from Ukraine [see 2 Mar 97] following the collapse of the Soviet Union, continuing: "China also hired former East German bio-chemical experts and officers of chemical units, who inspected the coast of Fujian province to study the possibility of bio-chemical warfare on offshore islands".

12–13 April In Munich, the German Armed Forces Medical Academy convenes its fifth international chemical medical

defence conference [see 28–29 Apr 99]. The theme is *Prevention and Therapy of Seizures and Brain Damage Caused by Organophosphorus Compounds Including Nerve Agents*. There are papers from CW medical defence specialists in Belgium, France, Germany, the Netherlands, the UK and the USA.

12–14 April In Dubrovnik, the OPCW Technical Secretariat joins with the Croatian CWC National Authority in conducting a regional seminar on the CWC. The aim is to encourage national authorities in the Eastern European and Mediterranean region to cooperate in their implementation of the treaty. The participants are from government and industry in 23 member states (Algeria, Austria, Belarus, Bosnia & Herzegovina, Bulgaria, Croatia, Czech Republic, France, Georgia, Germany, Greece, Hungary, Italy, Lithuania, Macedonia, Poland, Romania, Slovakia, Slovenia, Turkey, the United Kingdom, Ukraine and Uzbekistan). Among the matters coming to the fore was the need to further develop adequate legislation for the monitoring of dual-use chemicals.

13 April In the US Senate, the Armed Services Committee conducts the first of a series of oversight hearings on the Defense Department's Anthrax Vaccine Immunization Program (AVIP). Committee chairman John Warner observes that the programme "has been the subject of a great deal of controversy within and without the military ranks, with legitimate questions being raised by many about the validity of the anthrax threat, the safety and efficacy of this program, and of course the concern for the families". He also observes that the FY 2001 budget request from the Defense Department includes "an increase of over 240 percent for funding to assist BioPort with FDA concerns" [see 13 Dec 99] and asks whether alternative strategies for acquiring anthrax vaccine should not be explored. There are two panels of witnesses. The first comprises the Joint Staff Director of Intelligence, Rear-Adm Lowell Jacoby. The second panel comprises Deputy Defense Secretary Rudy de Leon; the Principal Deputy Under Secretary of Defense for Acquisition and Technology, David Oliver; Army Surgeon General Ronald Blanck, the Special Advisor to the Under Secretary of Defense, Maj-Gen Randall West; and, from the General Accounting Office, Carol Schuster, the Associate Director for National Security Preparedness Issues.

Admiral Jacoby states that "the intelligence community assesses that anthrax is the leading biological warfare threat" because of "the features and characteristics of the agent itself; the ease with which it can be weaponized and dispersed; and finally the fact that we know of countries that are pursuing weaponization of the agent". He continues: "The potential for terrorist use is also a concern to us, largely for those same sets of characteristics." Later he states that anthrax spores "can be stored for decades without losing their viability". He says: "Anthrax is considered a cost-effective alternative to other weapons of mass destruction. A smaller quantity is required for the same area of coverage than for other weapons of mass destruction. For comparison, about a 64 square mile of coverage would require a one megaton yield for nuclear material, about 160 metric tons for a chemical agent, and only about six and a half kilograms for anthrax. So pound for pound anthrax is about 100,000 times more lethal than the chemical agents that we are concerned about." He does not, however, explain what "coverage" here means, nor the form of the "anthrax". As for dissemination from non-optimal munitions, such as impact-detonating bulk-filled missile warheads or artillery projectiles, in which as much as 95 percent of the agent may not be effectively aerosolized, he says that "we would still

expect an effective area of one square kilometre per kilogram of agent and some exposure downwind for several kilometres". Referring to the 1979 outbreak of anthrax in Sverdlovsk [see 15 Nov 99], he says: "there were likely hundreds of deaths". The particular countries he mentions in connection with possible anthrax weapons are Iraq, Iran, Syria, Libya, North Korea, Russia and China. "We follow", he says later, "three categories of countries: those who have a weaponized anthrax capability, those that we know have a production plan and may have weaponized, and those that we are watching because we have indications that they may be moving into the biological warfare agent business. ... [T]he total number is about 12." As to terrorists, he describes Aum Shinrikyo as having "demonstrated the scientific capability necessary to work with anthrax as a biological warfare agent", even though it had "had difficulties with clogged sprayers and the anthrax itself" [see 26 May 98]. He says that there are "no confirmed indications that other groups are specifically developing anthrax", and adds: "International terrorist group activities have primarily focused on chemical rather than biological materials to this point."

As for AVIP itself, the GAO witness presents an update on the findings of its last report on the programme [see 22 Oct 99], which had been critical. Secretary de Leon reaffirms his department's resolve to vaccinate all service members in high-risk areas. He says that federal agencies are currently collaborating in an investigation of possible long-term health effects of the vaccine led by the Centers for Disease Control. He attributes the spread of concern about AVIP among the military and their families to the internet-literacy of US armed forces: "We have as a country entered into a new form of communications. Vaccines is one issue, but the discussion of the landmine moratorium is another example of where the internet can spread points of view rather than points of fact."

13 April In Washington DC, the Bureau of Export Administration (BXA) of the US Department of Commerce presents a *Chemical Weapons Convention Inspection Training and Preparations Seminar* to explain inspection activities under the new CWC Regulations [see also 9 Sep 99]. The stated purpose of the seminar is to train personnel from facilities subject to inspection and prospective interagency members of Host Teams on the Commerce Department methodology for hosting inspections. The speakers are from the agencies involved — BXA (mostly its Treaty Compliance Division), the State Department CWC National Authority Coordinating Staff, the Defense Threat Reduction Agency, and the Federal Bureau of Investigation.

14 April In Russia, the Duma votes 288–131 in favour of ratification of START II, the bilateral agreement with the United States to halve nuclear-weapons arsenals whose ratification had, under President Yeltsin, long been blocked in the Duma by the Communist majority there. President Vladimir Putin had made an unexpected visit to the Duma to urge ratification, and, in doing so, had stated that Russia would pull out of further arms negotiations if the United States were, in contravention of the ABM Treaty, to proceed with the planned development of its National Missile Defense system.

14 April In New York, CNN and retired US Army General John Singlaub reach settlement of their lawsuit. The terms of the settlement are confidential, except that, in the words of the general's lawyer, its "financial portion dealt only with the [1998 CNN] Impact broadcast in which General Singlaub was featured, rather than Tailwind, in which he appeared only briefly". The agreement closes the general's cases against

Time Magazine and the CNN producers involved, and it also closes the counter-suit against the general by one of the CNN producers, April Oliver. The lawsuits against CNN by other former Special Forces personnel remain pending.

14 April The US Army announces its intention of preparing Environmental Impact Statements for the alternative chemdemil technologies that are to be piloted in its Assembled Chemical Weapons Assessment (ACWA) programme. The technologies are to include chemical neutralization, biological treatment and supercritical water oxidation, and the sites under consideration are Anniston Chemical Activity, Alabama, Pine Bluff Chemical Activity, Arkansas, Pueblo Chemical Activity, Colorado, and Blue Grass Chemical Activity in Kentucky. The process has thus been initiated for determining the size of the pilot tests and the location of the test facilities.

Meanwhile, the Silver II electrochemical oxidation process of AEA Technology [see 7 May 99] is being evaluated by the Army in plant built by QVF Process Systems of Stafford at Aberdeen Proving Ground. The Solvated Electron Technology process, which uses sodium dissolved in liquid ammonia as a reducing agent, of Teledyne-Commodore [see 29 Jul 98 and 7 May 99] is to be tested at CAMDS Tooele in the second test phase of ACWA that is to run from June to September. The Plasma Waste Converter process of Startech [see 30 Sep 99] is (according to a company press-release subsequently described as “misleading” by the Army) about to undergo examination by the Army for possible use in the Non-Stockpile Chemical Materiel Program [see 23 Nov 93 and 29 Mar 96].

14 April In Utah, the US District Court in Salt Lake City rules that the chemdemil facility in Tooele, TOCDF [see 11 Jan], may continue to operate. In this long-running legal campaign against TOCDF [see 13 Aug 96 and 7-17 Jun 99] — and the present ruling is the third to be handed down by the court in favour of the facility, which has continued to display whistleblowing from within [see 11 Jan] — Judge Tena Campbell rejects the pleas by the Chemical Weapons Working Group, the Sierra Club, and Vietnam Veterans of America that the Army and its contractor EG&G had broken environmental laws at TOCDF, and that TOCDF operations were endangering human health and the environment. Her ruling states that “the evidence at trial established that no [chemical] agent-related injuries have been sustained and no agent has been released into the environment”. The plaintiffs plan to appeal and are also said to be contemplating a new lawsuit based on evidence acquired since this one began.

14–16 April In Albuquerque, New Mexico, Sandia National Laboratories hosts the tenth international arms control conference, this one on the theme *Conundrums in Arms Control: The New Millennium*. The conference is chaired, as usual, by Dr James Brown of the Laboratories’ International Security Center.

16 April In Lisbon, gas grenades are set off in a large crowded dance-club in the early hours of the morning. Seven people die and 65 are injured, either from the effects of the gas, which is reported to be Pepper Spray, or from crush injuries in the ensuing panic, or both. The incident is the latest in a series involving the discharge of irritant chemicals inside Portuguese disco-clubs. Subsequent investigation points to crush rather than toxic injuries among the victims.

16 April The London *Sunday Times* reports that British soldiers who had served in Kosovo are sick from exposure to

depleted uranium, and that twelve of them — all but one still in service — are preparing to sue for compensation.

16–17 April In Washington, DC, where there are many thousands of demonstrators around the buildings of the World Bank and the International Monetary Fund, Pepper Spray is heavily in use by police.

17 April In Moscow, the commander of the Russian Defence Ministry RKhB Protection troops, Col-Gen Stanislav Petrov, says to reporters: “The Russian army is not planning to use any defoliants in the course of the anti-terrorism operation in Chechnya”. He is responding to recent reports that the army could use chemical herbicides to destroy natural cover throughout the highland areas of Chechnya.

17 April The UK Ministry of Defence publishes a consultation paper on its latest plans for partial privatization of its Defence Evaluation and Research Agency [see 25 Oct 99]. The ministry is now favouring what it calls the Core Competence option for the Public-Private Partnership it envisages for DERA: this would turn about three-quarters of the agency into a company, NewDERA, that would be floated on the stock market as soon as its potential was judged to be suitably developed, possibly during 2001. The remainder, Retained DERA, would continue under ministry control, “providing knowledge integration, conducting research at the level of defence systems, providing an in-house source of impartial advice and having responsibility for the integration and management of the research programme and international research collaboration”. The CBD Sector of DERA at Porton Down would form part of Retained DERA. Comments on the consultation paper are due by 9 June. The new scheme is said to be responsive to concerns voiced both by British industry and by US defence officials.

18 April In Canada, the Inter-Church Coalition on Africa (ICCAF) calls upon the government “to file a request with the OPCW for an on-site challenge inspection” concerning the allegations that Sudan, a state party to the CWC, is producing and using chemical weapons. ICCAF accompanies the request with a 17-page report detailing the allegations.

19 April The UK House of Commons publishes the report of its Defence Committee on Gulf Veterans’ Illnesses. Its chief conclusion is as follows: “Research must continue into possible causes of Gulf veterans’ illnesses. However nine years on from the Gulf War, the highest priority now is to try to deal with the symptoms of ill health which veterans suffer by providing care and treatment which will improve their quality of life. It may not be possible at present to cure such illnesses, but maximum efforts should be made to identify treatments which will reduce their effects. We recommend that the MoD follow the US example in this regard and work with the Department of Health to establish trial treatments which may be of benefit to veterans. The MoD should actively encourage participation by veterans and their representative organisations in such trials.”

20 April The Federal Republic of Yugoslavia — Serbia & Montenegro — deposits its instrument of accession to the Chemical Weapons Convention. In 30 days time, on 20 May, it will thus become the 134th state party to the treaty.

20 April Malaysia deposits its instrument of ratification of the Chemical Weapons Convention. In 30 days time, on 20 May, it will thus become the 135th state party to the treaty.

20 April The US Centers for Disease Control and Prevention (CDC) publishes on its website a summary of its report *Preparedness and Response to Biological and Chemical Terrorism: A Strategic Plan*. Drafted by the CDC Strategic Planning Workgroup in consultation with representatives of local and state health departments, other federal agencies, and medical and public health professional associations, the policy recommendations of the report have reportedly already been accepted by the Administration. The recommendations focus on reducing US vulnerability to CB terrorism through preparedness planning, detection and surveillance, laboratory analysis, emergency response and communication systems. The summary report, in its abstract, says: "Training and research are integral components for achieving these recommendations. Success of the plan hinges on strengthening the relationships between medical and public health professionals and on building new partnerships with emergency management, the military, and law enforcement professionals."

21 April Russian Munitions Agency Director Zinovy Pak tells the State Duma during its government hour, when the first item under consideration is implementation of the CWC, that only 0.59 billion roubles had been allocated to the chemdemil programme during 1999, which was a mere fraction of the R5bn annual cost: "If the financing for the destruction of chemical weapons continues at this pace, then the problem will only be resolved in a hundred years". He says that fulfilling the CWC will require the spending of about R50bn in 1999 prices. On foreign assistance, he states that the number of donor nations has now reached ten, but that their participation is put in doubt by the unsatisfactory implementation of the treaty. He says that the government is "seriously concerned" about the pace of implementation, and that, together with other remedial measures (which he describes), a presidential decree on the creation of a single system for destroying chemical weapons has been drafted. The head of the Defence Ministry RKhB Protection Troops, Stanislav Petrov, says that the federal targeted programme to destroy Russia's chemical weapons will cost around R110bn to implement. He states that the main chemdemil facilities are being built in the Saratov, Kurgan and Kirov regions and in two villages in Mordova, and that these projects are going ahead quickly. He says that the programme will cost about R6bn in 2001, R12bn in 2002, R13bn in 2003 and R13bn in 2004, and that it is now about four years behind schedule because very little of the assigned budget money had actually been issued. In "the best-case scenario", he says, foreign assistance would come to no more than five percent of the total required.

21 April In Russia, the Duma votes 298-74 in favour of joining the 28 states that have thus far ratified the Comprehensive Test Ban Treaty [see also 13 Oct 99 and 000414]. This same day, President Vladimir Putin formally approves Russia's new military doctrine [see 9 Oct 99]. The doctrine envisages the use of nuclear weapons to respond to "large-scale aggression utilizing conventional weapons in situations critical to the national security of the Russian Federation", and, while reaffirming the Russian negative security assurance to all non-nuclear-weapon states, it also says that nuclear weapons can be used to respond to all "weapons of mass destruction".

24 April In New York, at UN headquarters, representatives of most of the 187 states-parties to the nuclear-weapons Non-Proliferation Treaty begin the sixth in the series of five-yearly conference to review the operation of the treaty.

25 April In China, a National Civil Air Defence Engineering and Antichemical Research Test Centre is established within the Antichemical Academy of the People's Liberation Army. According to an official briefing, its principal unit will be the Academy's No 1 Research Unit, where over the years a number of specialized laboratories have been set up for nuclear and chemical protection research and experiments.

25 April Syrian Defence Minister General Mustafa Tlas is the author of a lengthy article entitled "Biological (germ) warfare, a new and effective method in modern warfare" that is today published in Farsi translation in Tehran.

25 April In the UK, on nationwide BBC television, there is a documentary about Ronald Maddison, the volunteer who died in 1953 after nerve-gas experimentation at Porton Down [see 19 Aug 99]. The documentary had been made by BBC North East, and had first been screened in that region in October last.

26 April The French government publishes *Arms control, disarmament and non-proliferation: French policy* in a bilingual French-English edition, with forewords by President Jacques Chirac and Prime Minister Lionel Jospin. The publication includes a chapter that outlines French policy and actions in the field of CBW disarmament. This identifies the following bodies that were established in 1996 in preparation for the entry into force of the CWC:

- "A national authority attached to the French Ministry of Foreign Affairs and in charge of relations with international bodies in The Hague";
- "An Interministerial Committee for the Implementation of the Chemical Weapons Convention (CICIAC)";
- "A Steering Committee convened by the Prime Minister's private office and in charge of defining general guidelines"; and
- "Several working groups to conduct research in technical and legislative areas under CICIAC's authority."

The publication makes no mention of past French CBW armament activities.

26–28 April In Poland, the government joins with the OPCW Technical Secretariat in conducting a seminar on the destruction of adamsite [see 9 Jan 95]. The schedule includes a visit to the facility at Tarnow where completion of the destruction of Polish stocks of the agent had been witnessed by the OPCW. The seminar is conceived as the first in a series under OPCW auspices on chemdemil technical issues that will also provide a forum for the discussion of international cooperation measures in the area of destruction technologies.

28 April In Chechnya, rebels have biological weapons at their disposal, according to "a reliable source in the Dagestani Interior Ministry" quoted by Interfax. The weapons are said to comprise four containers of anthrax bacteria, which are to be blasted in Nalchik, Pyatigorsk, Mozdok and Makhachkala.

28 April The United States transmits to the OPCW the first part of its initial industrial-data declaration under the CWC, now nearly three years overdue. The declaration contains the information required under CWC Article VI on Schedule 1 facilities and Schedule 2 plant-sites. Still outstanding are the declarations of Schedule 3 plant sites (which are sent in on 8 May) and of chemical production facilities handling discrete organic chemicals.

28 April The US General Accounting Office issues a report on *Biological Weapons: Effort to Reduce Former Soviet Threat Offers Benefit, Poses New Risks*. This reviews US efforts to diminish the threat of biological-weapons proliferation emanating from the former USSR, and focuses on (1) the potential threats that the former Soviet bioweapons institutes could pose to the United States, (2) current and projected US efforts to address those threats, and (3) risks associated with expansion of the US effort and the plans of the Administration to mitigate them. The GAO started its work in August 1999, and proceeded through interviews and site visits.

On the nature of the US efforts, the report includes the following summary: "The US strategy ... has been to fund collaborative research activities with the [former Soviet bioweapons] institutes to (1) reduce their incentives to work with hostile states and groups and (2) increase their openness to the West. While the executive branch initially implemented this strategy with a modest level of funding, it is now seeking a tenfold increase in funding in response to intensified proliferation attempts by Iran and other countries of proliferation concern. The increased funding will support an expanded array of collaborative activities, including biodefense research against biological agents, security upgrades to select facilities, and dismantlement of unneeded facilities.

"For fiscal years 1994 through 1999, the United States allocated about \$20 million, primarily from the Departments of State, Defense, and Energy, to fund collaborative research projects to help redirect former biological weapons scientists to peaceful research activities. Key program benefits during this period included providing grants to fund more than 2,200 former Soviet biological weapons personnel — including more than 745 senior biological weapons scientists — and gaining some access to more than 30 of about 50 nonmilitary institutes. State and Defense officials told us that the US programs have denied proliferators such as Iran access to biological weapons

expertise and scientists at over 15 former Soviet biological weapons institutes.

"For fiscal years 2000 through 2004, the executive branch plans to spend about \$220 million to expand its efforts to engage former Soviet biological weapons institutes. About half of these funds will be used to continue efforts to redirect scientists toward peaceful civilian research.

"In an emerging area of emphasis, Defense and State plan to spend about \$36 million to fund collaborative research with Russian institutes on dangerous pathogens. This research is intended to improve the US defenses against biological weapons threats. The Department of Defense also plans to spend (1) \$40 million to upgrade security and safety systems at select facilities in Russia and (2) \$39 million to consolidate and dismantle biological weapons facilities in Russia as it has done in Kazakhstan — if Russia agrees."

As to the risks inherent in this expansion of the US effort, the report, the report states that they include sustaining Russia's existing biological weapons infrastructure, maintaining or advancing Russian scientists' skills at developing offensive biological weapons, and the potential misuse of US assistance to fund offensive research. To mitigate the risks associated with the dangerous pathogens research, the US plans to have its own monitors at the Russian institutes.

29 April Among OPCW member states, major provisions of the CWC take effect today, which is the third anniversary of the treaty's entry into force. Thus, states parties are now prohibited from transferring Schedule 2 chemicals to, or receiving them from, non-party states. The routine inspection regime now expands to cover plant sites producing "discrete organic chemicals", meaning a large increase in the number of civil industrial facilities liable for inspection by the OPCW. And states parties possessing chemical weapons should by now have destroyed one per cent of their Category 1 stockpiles.

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