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DEFINING CHEMICAL WEAPONS THE WAY THE TREATY DOES

Harmonizing the ways in which states parties implement the Chemical Weapons Convention domestically is at least as important as properly creating the organization in the Hague that will operate the treaty internationally. If states parties implement the Convention differently in certain essential respects, there will be no 'level playing field' for scientific, industrial and commercial enterprise in the diverse activities upon which the Convention impinges, nor will the Convention achieve its potential as a powerful instrument against chemical warfare and chemical terrorism.

Of all the possible divergences in national implementation, the most elementary — and the one that now threatens to develop — is divergence regarding the very definition of 'chemical weapons' to which the provisions of the Convention apply. On this basic matter of definition, the treaty itself is clear. Article II defines 'chemical weapons' as including all 'toxic chemicals and their precursors except where intended for purposes not prohibited under this Convention, as long as the types and quantities are consistent with such purposes'. Article II then provides a broad list of purposes that are not prohibited, such as industrial, agricultural, medical or other peaceful purposes, and even military purposes not dependent on a chemical's toxic properties.

This fundamental definition, based not on specific chemical identity but rather on intended use, is known as the General Purpose Criterion. It enables the treaty to achieve its central disarmament purpose without interfering with peaceful applications of dual-use chemicals. Thus, stocks of phosgene, the principal killer gas of World War I, are not prohibited if they are intended for the production of plastics. The General Purpose Criterion also allows the treaty to deal with chemicals that are still secret, such as the much-vaunted Novichoks, and with chemicals that are yet undiscovered.

The danger now is that some states may adopt, as the measures necessary to implement their obligations under the Convention, primary or secondary legislation which, out of misunderstanding or disregard, defines chemical weapons not in terms of the General Purpose Criterion but only with reference to those chemical substances that are listed in the schedules that appear in one of the annexes to the treaty. This is to mistake the schedules, intended to direct the routine verification work of the international organization, for what the Convention actually covers. The fact that the highly toxic fluorine compound called Agent Z which Canada and the UK studied as a candidate chemical warfare agent in 1940–41 is not included in the Schedules,

nor such substances as the nerve gas known as Agent GP, means only that these chemicals have not been singled out for routine verification measures. Their omission from the Schedules certainly does not mean that the military may use them as weapons or that the domestic penal legislation required by Article VII of the Convention should be without application to their acquisition by terrorists.

The remedy, of course, is for states to write their domestic implementing legislation so as to incorporate the General Purpose Criterion, either explicitly or by reference to the text of Article II of the Convention. That the draft legislation now working its way through the legislative processes of some states fails to do this must in part reflect the failure of the Preparatory Commission to provide guidance in the matter.

The guidance which the Convention itself provides could hardly be clearer, but for it to be acted upon by the people who now really matter — the domestic implementers of the Convention — and fully reflected in the measures they put into effect, it evidently requires translation into the language of the implementation handbooks. These the Provisional Technical Secretariat is currently drafting in The Hague under the direction of the Expert Groups. But the Secretariat, as its recently issued *Model National Implementing Legislation* reminds us, cannot itself press for action on so delicate a matter. Nor will it be able to do so for as long as the Commission remains silent. With implementing legislation at last starting to enter the national statute books, it may soon be too late: the Commission, by default, may be destroying the heart of the Convention.

<i>Editorial</i>	1
<i>Guest Article by Anne M. Harrington</i>	2–5
<i>Progress in The Hague: 11th Quarterly Review</i>	6–13
<i>CWC Ratifications</i>	8
<i>CWC Non-Signatory States</i>	9
<i>Forthcoming Events</i>	13
<i>News Chronology: May–August 1995</i>	14–34
<i>Sense of the US Senate</i>	34
<i>Recent Publications</i>	35–36

REDIRECTING BIOLOGICAL WEAPONS EXPERTISE: REALITIES AND OPPORTUNITIES IN THE FORMER SOVIET UNION

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Anthrax. Botulism. Cholera. Ebola. Plague. The similarity between this list of potential biological warfare agents and a list of contemporary world public health concerns is striking. Also striking is the limited effort that has been mounted since the collapse of the Soviet Union in 1991 to redirect the biological-weapons expertise that was developed in that country during the Cold War period. The dual use nature of biotechnology and lingering questions about the full scope of Soviet biological-weapons activity have been major causes of concern and reserve in working with this expert community, but some efforts have begun to harness this unique talent pool and redirect its work.¹ This article will review some activities that have been initiated and suggest some future directions that might be pursued.

Reassessing Nonproliferation Priorities

When proliferation experts initially assessed the potential for “brain drain” of weapons expertise from the former Soviet Union in the 1991–92 period, the focus was principally on nuclear weapons. After all, we were reasonably familiar — and impressed — with the Soviet nuclear capability and knew that there, as in the United States, the end of the Cold War would require a substantial shift of personnel from military to nonmilitary activity. The lack of a robust economy in Russia and other newly-independent states (NIS) that could support that shift, however, caused legitimate concern that unemployed or under employed nuclear scientists and engineers might be tempted to sell their highly specialized expertise to potentially proliferant countries. No one — including the governments of the nuclear inheritor states of the former Soviet Union — wanted this expertise to contribute to future arms races or to exacerbate regional instability. The world has witnessed the destructive force of the atom, and is determined to avoid its use again as a weapon. In the 50 years since World War II, that force has not been used again.²

The same restraint, unfortunately, has not been shown with other weapons of mass destruction (WMD). Chemical agents have been used both in wartime (Iran/Iraq) as well as in terrorist attacks (Tokyo subway). Chemical weapons, however, require a relatively low level of technology to produce and disperse, posing a real challenge to limiting the spread of their technologies.

Biological weapons present more complex technical challenges in terms of developing, producing and

weaponizing biological agents. In spite of this, recent revelations about Iraq’s BW programme establish that biological agents were being developed by that country and that a considerable research and development effort had been mounted to develop and tailor biological weapons. We have a unique window on Iraq’s biological-weapons programme thanks to the work of the UN Special Commission. However, we do not have similar windows onto other efforts elsewhere to pursue biological-weapons programmes. The specialized nature of the expertise required to implement a full biological-weapons programme, the relative ease of hiding such a programme, and the potential of BW as an instrument of terrorism argue strongly in favor of taking steps at least as vigorous as those that have been taken in the nuclear field to ensure that the spread of BW expertise is limited and the expertise itself constructively redirected. The Biological and Toxin Weapons Convention (BWC) is the primary tool for controlling the proliferation of biological weapons. The BWC deals, however, with the political aspects of proliferation, not the human aspects.³

Experts estimate that the potential lethality of a well planned and executed BW attack could be nearly as great as that of a nuclear attack. This is not a theory anyone ever wants to see tested. Although the moral and ethical imperative to prevent the use of nuclear and chemical weapons is very strong, the horror associated with what biological agents do to the human body, the almost limitless variations of potential agents and the limited ability to detect and defend against BW attack inspire those who are committed to eliminating this weapon from the world’s arsenals to seek as many ways as possible to ensure that the threat of BW is never realized.

Emergent infectious diseases underscore the world’s vulnerability to biological threats. US travelers are being advised to receive Hepatitis-A shots for travel to anywhere outside Canada, Western Europe, Scandinavia, Japan, Australia and New Zealand. We have also seen a serious increase in antibiotic-resistant bacteria, and new viruses continue to emerge. The world’s ability to control and/or eliminate serious public health threats is impressive, but by no means comprehensive. We can, for example, identify the Ebola virus, but do not know what its natural host is and are, thereby, limited in our ability to control the virus. An area of great public health need is the former Soviet Union where news reports indicate that diphtheria and certain other infectious diseases are on the rise. A Russian expert reported at an April 1995 workshop hosted by the State Research Center for Applied Microbiology at Obolensk that any comprehensive childhood immunization programme in

* *The views expressed are those of the author and do not represent US policy.*

the Soviet Union effectively stopped in 1985. Consequently, large portions of the population are at risk.

Creative Engagement of former Soviet BW Expertise

Should the biological-weapons expertise of the former Soviet Union be viewed as a proliferation risk that should be held at arm's length or as a highly skilled talent pool capable of making substantial contributions to local, regional, and world health, and biotechnology advancements? Arguments can be made in both directions, but part of the solution to the proliferation issue may lie in finding ways to harness and redirect the former Soviet biological-weapons expertise to work that can be integrated into the world scientific community. This is the approach that was taken quite successfully with the former Soviet nuclear community. We are unfortunately far less familiar with the Soviet biological-weapons community. Unlike Soviet nuclear scientists, some of whom had sat across the negotiating table from their US interlocutors for decades of nuclear arms reduction talks, much less is known about the Soviet biological-weapons scientists. The Soviet BW facilities and institutes were sequestered both from the international community and from their civilian biotechnology counterparts.

Communication and Cooperation: Basic Elements of a New Relationship

A logical initial step is to open channels of communication and cooperation at the institute level. This approach has been initiated in a number of ways. The broadest US government effort to date is through the International Science and Technology Center (ISTC), an intergovernmental organization formed initially by the United States, the European Union, Japan and Russia whose objective is to provide support to former Soviet weapons scientists for civilian work.⁴ Through an outreach programme that has included two symposia organized and hosted by Russian biotechnology institutes,⁵ as well as contacts by the ISTC's international staff, the ISTC has begun to establish some constructive inroads into the former Soviet BW community. Several cooperative projects have been launched through the ISTC and others are in various stages of development and processing.⁶ In its initial discussion of funding collaborative work with BW institutes, the ISTC Governing Board determined that because of the dual use nature of the technologies involved, all projects approved through the ISTC would require an active western partner. The partnership concept was intended not only to help ensure that the research was civilian in nature, but to provide linkages into the international scientific community that could help former Soviet BW experts explore alternative research areas into which they could redirect their skills. The ISTC has launched a special effort to identify possible commercial partners for the biotechnology institutes that are attempting to redirect their activities to the civilian sector. The challenges involved in engaging the commercial sector are explored further below.

Although its focus has more naturally been directed to the nuclear weapons community, the Department of Energy

(DOE) NIS-Industrial Partnering Program has also launched some projects involving former Soviet BW institutes. A special focus of this programme is using the DOE multifunctional laboratories to bridge NIS technologies to US industry.⁷ These laboratories work with their NIS counterpart institutes to identify and validate technologies that could be the basis of commercial partnerships with US companies.

There has also been some support provided for the former Soviet BW community through the US National Aeronautics and Space Administration (NASA). Through its Science and Technology Advisory Council, NASA has funded a range of activities with former Soviet BW institutes, including specialized work in the biomedicine and biotechnology fields.⁸

In addition to government efforts, US universities, research institutes, and corporations also play an important role in engaging the former Soviet BW community through a broad range of programmes.

Why We Should Engage

Contacts through the programmes mentioned above confirm both the grounds for optimism and causes for concern about working with the former Soviet BW community. Early hopes that some of these institutes would find a natural and easy marriage with industry in drug or pharmaceutical production faded quickly as companies made hard, but necessary, business decisions about the advisability of using possibly contaminated or otherwise unsuitable facilities. Equally unsettling was the continuation of aftershocks from the collapse of the Soviet Union on organizational structures, ownership, and personnel.

In much of the BW complex, the sheer inertia of the Soviet supply and support system carried the BW institutes through the initial period after the breakup of the Soviet Union. Budgets were provided, preferential treatment for scientists at these facilities continued, and salaries were paid. In the past several years, as government defence budgets have shrunk, more and more institutes have moved toward self-financing, either by government direction, necessity, or both. Finding ways to become self-financing has presented significant challenges. An interesting case is the State Research Institute of Applied Microbiology (SRIAM) at Obolensk. Once part of the state-owned biotechnology conglomerate, Biopreparat, the institute has now been transferred to the Ministry of Science. Scientists at SRIAM conducted advanced research on tularemia and were involved in other BW research areas. Located in a relatively isolated area southwest of Moscow, there are few, if any, alternative careers for these scientists to pursue. At an ISTC-sponsored workshop in April 1995, scientists repeated a now-common story that they had not been paid for several months and that many scientists stayed home to grow food or find other ways to support their families. To produce enough income to cover minimal salaries and overhead, SRIAM now boasts a brewery, an assembly line for Italian men's suits, and hopes to open a vodka distillery soon. This kind of creative diversification can help main-

tain a base level of activity at SRIAM, but does little to engage the scientific talent at SRIAM or underwrite their redirection to activities that could be of more direct public health benefit or commercial potential. Although many younger scientists now count among the "internal brain drain" statistics and have left their scientific careers for business or other pursuits, significant numbers of scientists, especially older ones, with weapons expertise find such change uncomfortable and are committed to pursuing science. These are the individuals who should be of most concern from a proliferation perspective.

Hard Look at Options for Cooperation

It is actually easier in some respects to make the decision in principle to engage former Soviet BW institutes than it is to find practical ways to do so. The institutes are capable of research and development and/or production, but there are challenges in both areas. Unlike the United States, where expertise that might once have been used to develop BW has been redirected toward public health through the Centers for Disease Control, into ensuring safe production of drugs and pharmaceuticals through the Food and Drug Administration, and to research and production in the private sector, this redirection has not yet started in the former Soviet Union.

Commercial Partnerships

As mentioned above, commercialization was an early aspiration for both the former Soviet BW institutes and for those who wanted to see their activities redirected. With the lack of vaccines and basic pharmaceuticals in the former Soviet Union and the expertise resident in the former BW facilities, an early assumption often was that vaccine and pharmaceutical production would be an obvious route to follow. Many of the BW institutes believed this as well; many still do.

The realities are, however, that few, if any, western companies will even consider utilizing buildings that may have been associated with any kind of BW work for production aimed at human consumption. Poor construction standards and possible contamination raise the cost of reconstruction and renovation beyond what new structures would cost. Good manufacturing practices (GMP), as practiced in the west, are virtually unknown in the former Soviet Union. Some efforts have been made to share information on pre-clinical and clinical testing and other aspects of western production standards. The audiences at the institutes have been eager to learn more about GMP, but to apply these standards to the facilities as they stand would be virtually impossible. Although there are pockets of quality among the institutes, years of neglect, lack of funding, and construction practices that are not up to western standards have left many institutes bankrupt of any facilities that could be used for production. This is not a message that many former Soviet BW institutes want to hear, but it is a message they need to learn to accept.

Working with these institutes to perform realistic assessments of their facilities and productive capacity should be a priority. In some cases, it may be possible to replace ambi-

tious vaccine production plans with more modest but nonetheless useful activities, such as packaging of western-produced generic drugs or focusing on agricultural problems. Giving some priority to developing realistic business plans and learning the requisite business skills needed to attract and form commercial partnerships should also be a target activity.⁹ The US Department of Commerce Special American Business Internship Training (SABIT) programme has been successful in bringing managers from scientific institutes to the US for limited periods during which they have the opportunity to work in a company and learn business skills.

Research and development

The world class quality of the scientific staff is the greatest asset of these institutes. Their skills in genetics could feed easily into efforts ranging from the Human Genome Project to forensics to improved methods of diagnosing and treating infectious diseases. One of the roles that western partners could play in redirecting BW expertise is to suggest technical areas that need further exploration and to encourage project work in these areas. Owing to their isolation, the former Soviet BW institutes often propose work that they think will be of interest, drawing only from their own experience. The more guidance they are given, the better the chances are that they will find partners and funding. For example, concentrating some research capacity on bioremediation could be a way to address some of the massive pollution and contamination in the former Soviet Union, while pursuing a biotechnology area of worldwide interest and high commercial potential. Several research groups already have begun to turn their talents to cancer and AIDS research. Developing partnerships and cooperative research projects with western counterparts involved in similar research could provide these institutes moral support at a minimum and could generate some financial support as well.

When contacts first began between the US and Russian nuclear weapons laboratories, work was carried out through relatively small fixed price contracts designed around simple deliverables. The tasks related directly to ongoing work at the US labs and, over time, some of the collaborations have grown into multiyear, multitask cooperative research, in which the two sides function as peers. It took several years to get to that point and we should be prepared to invest that kind of time and money to achieve similar results with the biotechnology community. One obstacle to this approach has been the desire of some institutes to propose only projects at the highest end of the technology range. Proposing work on genetically-engineered vaccines for diseases when effective conventional vaccines already exist may provide stimulating research, but is not economically justifiable.

The ISTC is considering the establishment of a small-projects programme that would have a simplified proposal submission and review process. Such a programme could be ideal for launching a series of pilot projects across a group of biotechnology institutes. Successful projects could then be graduated to longer term research proposals

or directly to industry partnerships. Other funding programmes, such as the European Commission's INTAS and the new US-NIS Civilian Research and Development Foundation (CRDF) would follow suit.

Another possibility would be to link institutes to international organizations that require specialized biotechnology support. A system similar to the one used by the International Atomic Energy Agency (IAEA) might be considered. The IAEA is a UN body that must handle highly technical nuclear issues. To support the IAEA's need for technical support, many laboratories around the world have been designated as support facilities on which the IAEA may draw. Perhaps a similar system could be established for the World Health Organization (WHO) that would allow it to utilize some of the research capacity in the former Soviet BW facilities. When the WHO sent a team to India to certify the end of the recent plague outbreak, the team was composed of American and Russian experts. That this kind of expertise resides in two countries that have substantial experience in BW is not surprising.

Conclusion

There are significant nonproliferation and scientific gains that could be made by working constructively with the former Soviet BW community. In spite of Ebola and plague outbreaks and the depiction in the cinema of runaway viruses, the dangers of biological weapons do not exist as realities in the minds of much of the world. Biological weapons are the stuff of computer games like "The Hive", a game that involves saving the galaxy from a biological weapon produced by mutant bees. We should be expending more effort and investment on preventing the spread of BW expertise and less on trivializing the effect of BW through games.

On the optimistic side, many scientists and institutes from the former Soviet BW community are now involved in the ISTC and other efforts and are eager to find new directions for their careers. The openness with which they share information about their current economic duress and their prior work and the extent to which they welcome and seek western partners for peaceful research are a significant shift from past patterns of secrecy and isolation. This is an opportunity that should not be missed.

Notes

1. See Zelicoff, Alan, "The Dual-Use Nature of Biotechnology: Some Examples from Medical Therapeutics", in Bailey, Kathleen C. [ed.] *Director's Series on Proliferation*, no. 4, Lawrence Livermore National Laboratory, 23 May 1994. Zelicoff's opening paragraph states the nature of the conundrum concisely: "Biotechnology is dual-use; it can be used for legitimate and illegitimate purposes. The knowledge base, procedures, equipment, medications, and diagnostic kits used in civil applications can also be used for the manufacture of illegal drugs or production of biological weapons. Indeed, the same fermenters and organisms can be used to produce an animal vaccine or a lethal biological weapons agent".
2. See Riess, Mitchell, "Bridled Ambition: Why Countries Constrain Their Nuclear Capabilities", Woodrow Wilson Center Press, 1995. Riess explores the history and politics of the nu-

clear programmes of South Africa, Argentina, Brazil, Ukraine, Belarus, Kazakhstan, India, Pakistan, and North Korea, and offers perspectives on why these countries have constrained or suspended their nuclear weapons programmes.

3. For a description of the BWC and the Trilateral Process, see Lacey, Edward, "Tackling the Biological Weapons Threat: The Next Proliferation Challenge", *The Washington Quarterly*, 17:4, pp. 53-64.
4. Armenia, Georgia, Kirgizstan, Sweden, and Finland subsequently acceded to the ISTC. As of 1 September 1995, 157 projects supporting more than 9,500 scientists and engineers had been approved by the ISTC Board representing \$70 million in support.
5. The ISTC symposia were designed to review and improve project proposals that had been submitted by the hosting institutes. Both symposia were sponsored and funded by the ISTC headquartered in Moscow. The *Symposium on Development of Vaccines for Viral Infections* was hosted by the State Research Center of Virology and Biotechnology "VECTOR", 12-14 December 1994; the *International Symposium on Development of Vaccines against Bacterial Infections: Preclinical and Clinical Trials* was hosted by the Research Center for Applied Microbiology, Obolensk, 3-6 April 1995. The latter symposium was also attended by representatives of other Russian biotechnology institutes as well as officials from the Russian Institute for Standardization and Control of Medical Biological Preparations. Papers from both symposia are available from the ISTC Secretariat: Ulitsa Luganskaya, 9, P.O. Box 25, 15516 Moscow, Russian Federation; fax: ++7.095.321.47.44; or from the author, c/o US Department of State, PM/RNP, Room 1480, Washington, D.C. 20520; fax: ++1.202.736.7696; e-mail: AnnieMH@aol.com.
6. Projects approved through June 1995 include: #91, *Design of Recombinant Protein-Peptide Immunomodulators using New Basic Molecular Biology*, Institute of Immunology State Concern Biopreparation; #119, *Development of Biotechnology Techniques for Elimination of Environmental Oil Pollutions*, State Research Institute of Applied Microbiology; #132, *Organization of Production of Inactivated Vaccine against Hepatitis-A*, Institute of Molecular Biology of the Scientific Production Association (NPO) VECTOR; #133, *Elaboration of Production Technology of Live Measles Vaccine for per os Administration*, NPO VECTOR.
7. The ten laboratories that are represented on the NIS-IPP Interlaboratory Board are: Argonne National Laboratory, Brookhaven National Laboratory, Idaho National Engineering Laboratory, Lawrence Berkeley National Laboratory, Lawrence Livermore National Laboratory, Los Alamos National Laboratory, National Renewable Energy Laboratory, Oak Ridge National Laboratory, Pacific Northwest Laboratory, and Sandia National Laboratories. The NIS-IPP works closely with the US Industry Coalition, a consortium of business and universities with interest in developing business partnerships in the former Soviet Union.
8. Institutes funded include NPO VECTOR, the State Institute for Applied Microbiology, and the Institute for Ultra Pure Biopreparations.
9. The US Embassy in Moscow provides useful insight into the difficulties faced by a defence facility faced with the transition from a defence economy to a consumer economy. In an unclassified analysis of defence conversion, the Embassy cites the main reasons for failure to make the transition from military to civilian as: lack of management experience; limited or inaccessible capital; high cost and risk of proposed projects; ministerial resistance to access to facilities; the defence facility's resistance to change.

Building the Organization for the Prohibition of Chemical Weapons

Thirty-eight states have now (20 September 1995) deposited their instruments of ratification. Around a dozen seem ready to deposit in the near future and many others are getting close. It therefore seems likely that the Convention will enter into force in mid-1996. In The Hague, steady progress is being made in preparing for effective implementation of the Convention by that time.

Actions by the Preparatory Commission

The Preparatory Commission held its Eleventh Session during 24–27 July 1995 in The Hague. It was attended by representatives from 93 States Signatories. Acting on the recommendations of the Expert Groups, the Commission completed a range of major tasks. The proposed Programme of Work and Budget for 1996 was approved in two parts. Part I has decreased from 1995 and now stands at Dfl. 24.8 million. The reduction is largely attributable to the completion or near-completion of several large one-time expenditures, such as travel to recruit inspector trainees and the acquisition of most of the required computer-related equipment. Part II, which will become available upon the deposit of the 65th instrument of ratification, is increased to Dfl. 30.4 million to allow for expansion to the full strength of 369 staff members which are authorised for entry into force and includes the first group of 140 inspectors. Six General Services Posts, approved earlier for Phase II, were brought forward to Phase I and will be filled during the second half of 1995.

The Commission also adopted the OPCW Confidentiality Policy put forward for approval by Working Group B in the course of the Plenary Session. The Policy sets out the responsibilities of the OPCW, the Director-General, the Secretariat, the inspection team, the States Parties and observers relating to the handling and protection of confidential information. It also establishes a Confidentiality Commission to deal with alleged breach procedures. (See section below on Expert Group on Confidentiality) The technical specifications for two further items of equipment, Boots (Reusable) and an Air Quality Monitor were approved on the basis of recommendations from the Expert Group on Inspection Procedures.

The method of work to be employed by the Preparatory Commission in the current intersessional period (August–December) was the subject of extensive debate and discussion. The new method of work has a threefold purpose; to streamline the substantive work of the Expert Groups, to make the best use of experts coming to The Hague from Member States and to encourage as wide a participation as possible of all delegations. Under this new system, formal meetings of the Expert Groups will only be convened if there is a reasonable expectation that they will be able to record progress. Substantive work will proceed on the basis of clusters of consultations undertaken by Expert Group Chairmen. Eleven clusters have been set up, each of which corresponds to one or more Expert Groups. So, for example, clusters A1–A6 cover issues such as Staff Regulations

& Policy, the Budget, Financial Regulations and Personnel while clusters B1–B5 cover, respectively, Chemical Industry Issues and Confidentiality (B1); Challenge Inspection (B2); Chemical Weapons Issues and Old and Abandoned Chemical Weapons (B3); Technical Cooperation and Assistance (B4) and finally, Inspection Procedures (B5).

Open-ended and private consultations will be conducted by the Expert Group Chairmen. Regional consultations may also be conducted by the Chairmen of the Regional Groups. To ensure participation, the Chairmen will liaise with the Secretariat so that relevant information and documentation is circulated to delegations in good time. To that end, a weekly Journal will be issued setting out the meetings that are to take place over the following four weeks, and where applicable, attaching an agenda for those meetings. In the course of discussions at the Plenary, some delegations expressed concern at the possibility that this more informal approach would tend to exclude smaller delegations. However, the aim of the detailed Journal and provision of agenda in advance is to ensure that delegations are informed well in advance so as to be able to attend the meetings if they choose to do so.

The Russian position on the issue of verification of the destruction or conversion of former chemical weapons production facilities (CWPFs) was also a subject of debate and discussion in the course of the Plenary Session. The United States described the Russian position as unacceptable, saying that it offends the integrity of the Convention and constitutes one of the principal obstacles to progress in the preparations for entry into force. The Chinese delegation expressed concern at the serious differences existing in respect of this issue and called on Member States to respect the history of the negotiations regarding CWPFs, avoiding any potential loopholes. Several States expressed concern at the diametrically opposed positions being adopted — many pointing out that the Convention clearly required verification of the destruction or conversion of all CWPFs.

The Russian Federation made a statement, which, by request, was distributed as an official document of the Preparatory Commission. The statement outlined the voluntary steps towards chemical disarmament which have been taken by the Russian Federation but went on to express concern at developments in the Preparatory Commission relating to their position on destruction of CWPFs. Specifically, they described opposition to their position being “artificially stirred up” and providing a screen behind which “certain countries” are endeavouring to keep from destruction actually existing facilities for the production and filling of

chemical weapons. Reference was also made to the position of the United States on binary chemical weapons.

Another issue of concern raised at the Plenary was the geographical distribution of staff, an issue which has been raised on previous occasions. The Executive Secretary emphasised that efforts were being made to achieve an appropriate balance between high technical competence and national spread and urged Member States to encourage suitably qualified applicants.

Actions by the Secretariat

Inspectorate Trainee Interviews Staff from the Verification and Administration Divisions of the Provisional Technical Secretariat visited the Russian Federation from 7–22 July 1995. The purposes of the visit were to interview inspector trainee candidates and to explore the possibility of a contribution from the Russian Federation to the General Training Scheme for Inspectors. The standard of inspector candidates interviewed was reportedly high. In the course of the visit, discussions relating to Russian ratification, verification issues, chemical weapons destruction and the status of Russian–US bilateral agreements were also undertaken.

Inspectorate trainee interviews have also been completed in Stockholm, Seoul, Beijing, Tokyo and Buenos Aires. Remaining interviews are scheduled to take place in Tehran, Jakarta (September), Washington D.C. (September and October), Prague (October), New Delhi (November) and The Hague (September–November).

Visit to Italy Staff from the External Relations Division and the Verification Division of the Provisional Technical Secretariat visited Italy in May 1995. In the course of the visit, PTS staff met with personnel from the Italian Chemical Association and paid a visit to a plant site. Meetings were held with industry and with personnel from the future National Authority in the course of which practical procedures to be followed in the course of declarations and inspections were discussed. PTS staff also visited personnel from the Ministry of Foreign Affairs (which will house the National Authority) and the Ministry of Defence.

Basic Course for Personnel of National Authorities

The Technical Cooperation and Assistance Division has been working on the Basic Course for Personnel of National Authorities, being held during 11–29 September in the Netherlands. The course is primarily aimed at National Authorities' personnel of those future States Parties with no chemical weapons and limited declaration activities.

The course, which runs for three weeks, focuses on issues raised by national implementation and verification. In the first section, relating to national implementation, the legal rights and obligations of States Parties under the Convention are examined so as to create an understanding of the measures required to set up and run a National Authority. Issues with which the National Authority will have to deal are examined in turn, including data handling and confidentiality, identification of declarable activities (including those relating to import and export), requirements relating to declarations, communication with the OPCW, govern-

ment officials, industry and media and finally, the obligations involved in international cooperation, trade and assistance. The second major part of the course deals with issues of verification and covers the rights and obligations involved in receiving inspections and the inspection process itself. It also covers challenge inspections and the requirements for requesting an investigation under Article IX or X. The participants are presented with a number of scenarios in which National Authority personnel are asked to consider a problem and are asked to propose what would be the best action to take in each case. Many of the scenarios pose intricate but still realistic problems with the aim of preparing personnel for the decision-making process. The course ends with a small section dealing with chemical hazards and protection against toxic chemicals, including medical countermeasures and decontamination.

Internet The Provisional Technical Secretariat has joined the Internet, setting up an experimental Web site. It can be accessed on Internet with the address <http://www.opcw.nl/> by using any Web browser such as, for example, Netscape 1.1. The site is experimental in character and will be continuously revised. A study is being undertaken to assess the viability of a permanent site. It contains a great deal of information relating to the provisions of the Convention itself, as well as its background. It does not as yet contain the text of the Convention but that can be accessed through the home pages of HSP, SIPRI or Tufts University. The site also provides information on work being undertaken by the Preparatory Commission and the Provisional Technical Secretariat in The Hague. This includes the Journal of the Preparatory Commission and the calendar of the inter-sessional work. All recent official documents of the Preparatory Commission are available, with reports from the expert groups being put on the Net only when they have been approved by the Commission. The site also provides the text of press releases, *OPCW Synthesis* and its *Supplement*. Continuously updated lists of all Member States and of those that have deposited their instruments of ratification are maintained, as well as a list of the officers of the Commission. Numerous links are available to other relevant sites (PTS personnel stress that providing a link to a site does not imply any endorsement of that site). These links point to sources which provide information on a wide array of issues, including, for example, information on hazardous chemicals, chemical weapons, chemical warfare, chemical disarmament, related Conventions and Websites within the UN system. They also provide access to the HSP and the SIPRI home page.

Staff & Budget Ms Agnès Marcaillou has resigned as the Special Assistant to the Executive Secretary and will leave the Secretariat at the end of September. Mr Sylwin Gizowski of Poland has been appointed to replace her, effective 1 October. Mr David Clements of the United States of America was appointed as the new Director of the Administration Division in the Secretariat at the Eleventh Session of the Commission. The reappointment (pending from the previous Plenary Session) of the Directors of the External Relations, Legal and Verification Divisions also proceeded without difficulty at this Session. No

Deposited CWC Ratifications

as of 20 September 1995

Fiji — 20 January 1993
Mauritius — 9 February 1993
Seychelles — 7 April 1993
Sweden — 17 June 1993
Norway — 7 April 1994
Australia — 6 May 1994
Albania — 11 May 1994
Maldives — 31 May 1994
Cook Islands — 15 July 1994
Spain — 3 August 1994
Bulgaria — 10 August 1994
Germany — 12 August 1994
Sri Lanka — 19 August 1994
Mexico — 29 August 1994
Turkmenistan — 29 September 1994
Uruguay — 6 October 1994
Paraguay — 1 December 1994
Lesotho — 7 December 1994
Greece — 22 December 1994
Tajikistan — 11 January 1995
Mongolia — 17 January 1995
Armenia — 27 January 1995
Finland — 7 February 1995
Oman — 8 February 1995
Romania — 15 February 1995
France — 2 March 1995
Switzerland — 10 March 1995
Croatia — 23 May 1995
Monaco — 1 June 1995
Netherlands — 30 June 1995
Denmark — 13 July 1995
Peru — 20 July 1995
Algeria — 14 August 1995
Austria — 17 August 1995
Poland — 23 August 1995
Ecuador — 6 September 1995
South Africa — 13 September 1995
Japan — 15 September 1995

Undeposited CWC Ratifications

Some states in which the domestic ratification process has been completed, or is reportedly close to being so.

Argentina	Côte d'Ivoire
Belarus	Czech Republic
Benin	Italy
Cameroon	Saudi Arabia
Canada	Slovak Republic
	United Arab Emirates

recomendation has yet been made regarding the post of Deputy Executive Secretary. The Asian Group is to nominate its candidate replacing Mr Li Chang-he of China who resigned to take up a post in his Foreign Ministry. The recruitment of an additional P3 Legal Officer was discussed in the course of the Plenary Session but as no agreement could be reached the matter was referred back to the Expert Group on Programme of Work and Budget for further consideration in the course of the next intersessional period.

Model National Implementing Legislation The Secretariat prepared a Model Act to Implement the Convention which has been issued as an official document. This Model Act is designed to assist Member States with no chemical weapons and little or no chemical industry. The Act covers both approval and implementation of the Convention and may be useful for Member States in setting up their National Authorities.

SSF Group Conference on Effective Implementation of the CWC The Executive Secretary as well as top officials from the Preparatory Commission attended a conference entitled "Effective Implementation of the Chemical Weapons Convention" organised by the SIPRI-Saskatchewan-Frankfurt Group and held in Bad Homburg, Germany during 8-10 September 1995. The conference focused primarily on the process of national implementation of the Convention and related difficulties in the establishment of the respective National Authorities. The discussions which took place in the course of the conference revealed that many different approaches are being adopted by Member States in implementing the Convention. However, the exchange of information which took place among the participants will contribute to increased understanding and clarification of outstanding issues.

Actions by Member States

Ratifications Since the last issue of this Bulletin, nine states have deposited their instrument of ratification, bringing the total number to 38, well more than half the number needed for entry into force. The nine states are the Kingdom of the Netherlands on 30 June, Denmark on 13 July, Peru on 20 July, Algeria on 14 August, Austria on 17 August, Poland on 23 August, Ecuador on 6 September 1995, South Africa on 13 September and Japan on 15 September. Several more states, including Argentina and Belarus have completed their parliamentary process for ratifying the Convention but have not yet deposited their instruments of ratification. At the Eleventh Plenary, Canada announced that legislation has passed through both houses and that Royal Assent has been granted, thereby completing the legislative process. Final procedures have commenced and so the deposit of the instrument of ratification is expected shortly. Brazil informed the Plenary Session that its legislation was in the higher legislative chamber while the Republic of Korea and Hungary expected ratification before the end of the year. The United Kingdom has issued a Consultation Paper on a Bill to implement the Chemical Weapons Convention in the UK and as time has been allocated on its parliamentary calendar to consider the Bill, sometime

after mid November. Other countries are working towards being in a position to present legislation to their respective parliaments including China, Costa Rica, Pakistan and Ukraine.

The United States made a statement at the Eleventh Plenary to the effect that President Clinton has made ratification of the Convention a top priority and it was hoped that with early ratification by the United States, the Convention could enter into force by mid 1996. Also at the Eleventh Plenary, the outgoing Chairman, Ambassador Finn K. Fostervoll of Norway launched a "Troika" initiative whereby visits would be made to Moscow and Washington, D.C. to speed up the ratification process and to discuss ideas with key government officials and with legislators directly. These visits will take place in mid-September in Washington and in mid-October in Moscow.

The Secretariat has distributed a questionnaire to Member States seeking information on the actual situation regarding ratification in each of the States. The information will assist in planning activities to be undertaken prior to entry into force.

Training Course Argentina announced at the Plenary Session that it has arranged for a regional training course for national authorities personnel, in particular escort inspectors, to take place in March of next year for a six week period. It is to be run by the Ministry of Defence with the assistance of the Ministry of Foreign Affairs — the delegation asked for funding and assistance in preparing the course.

Committee on Relations with the Host Country

The Committee met on 30 June, 26 July and 1 September 1995. At its first meeting, the Committee was updated regarding progress being made in the appointment of a consultant to assist in the construction of the OPCW building. The consultant will assist the Building Officer in monitoring construction work and will provide technical audits. Responsibilities will also include providing specialist technical reports and advice including detailed assessments and cost analyses of any variations or claims which may arise during the course of construction. Invitations have been issued through Member States for applications for tender. The closing date for applications is 15 September 1995, after which tender documents will be forwarded to those interested.

The legal problems surrounding the OPCW building (the developer required a guaranteed tenancy on the property for fifteen years) would now seem to be resolved. At the meeting of the Committee on 26 July 1995, Supplementary Understandings Between the Preparatory Commission for the OPCW and the Host Country Relating to the Preliminary Tenancy Agreement for the New Purpose-Built Office Building were developed. These Understandings provide, *inter alia*, that the Commission will sign a Preliminary Tenancy Agreement with the property developer. If, on the date of delivery of the building, the OPCW does not yet exist, the Secretariat shall move into the new building, the OPCW Foundation will be the lessee for a maximum of three years and the legal relationship between the Commission and the OPCW Foundation will be arranged in a sepa-

CWC Non-Signatory States

as of 20 September 1995

Bosnia-Herzegovina
Macedonia, FYR of
Uzbekistan
Yugoslavia

Bhutan
Iraq
Jordan
Kiribati
Lebanon
North Korea
Solomon Islands
Syria
Taiwan
Tonga
Tuvalu
Vanuatu

Andorra

Angola
Botswana
Egypt
Eritrea
Libya
Mozambique
Sao Tome & Principe
Somalia
Sudan

Antigua & Barbuda
Barbados
Belize
Grenada
Jamaica
Suriname
Trinidad & Tobago

159 states have signed the CWC, 38 of which have deposited instruments of ratification

rate agreement. Once the Convention comes into force, the OPCW will become the lessee. If the Convention does not enter into force in that three year period, at the end of the

three years the Secretariat will have the option of remaining in the building, taking over the Tenancy Agreement on an annual basis. If the Secretariat decides not to remain in the building, the Host Country will assume the necessary guarantees towards the lessor. At the Plenary Session, the Commission authorised the Committee to finalise the Supplementary Understandings but not before 1 September 1995 in order to give delegations sufficient time to consult with their capitals. The Understandings were finalised by the Committee at their meeting on the 1 September 1995 and it now remains only for the formalities to be completed. Despite this considerable progress, the Committee has been informed that due to the delays already encountered by the property developer, Provast, is no longer in a position to guarantee the start of construction by 15 October 1995.

The work of the Building Steering Group progresses well with the Final Design of the OPCW building having been accepted and approved by the Commission. The Secretariat has sought formal clarification from the Ministry of Finance of the Host Country as to whether changes to the VAT laws of the Netherlands will impact on the cost of the OPCW building. At its meeting on 30 June 1995, the Committee noted that the exchange of letters of intent for the rental of up to 165 car-parking spaces within the Netherlands Congress Centre had taken place. The Committee visited the OPCW Laboratory and Equipment Store on 12 May 1995. Finally, the Committee has been advised that even after the entry into force of the Schengen Accord (an agreement between certain EU states on visas), the Ministry of Foreign Affairs will still require 7 to 10 days to process requests for visas for entry into the Netherlands for work of the Commission.

Working Group A

Finance Group The Group met on 12–13 July 1995 to consider the 1994 Financial Statements of the Commission and the Provident Fund together with the External Auditor's reports on the Statements. As regards the Audited Financial Statements of the Commission, the Group noted the External Auditor's opinion that they fairly present the financial position of the Commission as at 31 December 1994. The External Auditor's report noted that Member States needed to be better encouraged to pay their contributions on time. Addressing this issue, the Group suggested that the experience of other international organisations be considered to see how they have dealt with timely payment of contributions. As regards the Audited Financial Statements of the Provident Fund, the External Auditor also was of the opinion that they fairly present the financial position of the Fund at the end of 1994, that the Statements were prepared in accordance with the Commission's stated accounting policies and that the transactions were carried out in accordance with financial regulations and legislative authority.

Expert Group on Programme of Work and Budget

This Group met on 16 June 1995 to complete its work on the proposed Budget for 1996. As anticipated, the Budget was finalised without any major change and was subsequently approved by the Commission at the Eleventh Ple-

nary Session (see above). The Group also discussed the need to improve the current geographical distribution of professional posts within the Secretariat. The additional post of a P-3 Legal Officer was discussed at the meeting but agreement could not be reached.

The Group requested that the Secretariat prepare initial draft Financial Regulations and an initial set of draft Financial Rules to cover the reimbursement of inspected States Parties for costs incurred by inspection teams. Approving the recommendations of the Finance Group, the Expert Group on Programme of Work and Budget recommended the establishment of a Fund for Replacement of Inspection and Laboratory Equipment. The Group requested that the Expert Group on Administrative, Financial and Personnel Matters consider the report of the United Nations Joint Inspection Unit to determine if their conclusions relating to performance appraisal, accountability and oversight of staff could be incorporated in the OPCW procedures. The Group also invited the Expert Group on Programme of Work and Budget to endorse its recommendations concerning the calculation, allocation and timing of surrender of the cash surplus.

Expert Group on Administrative, Financial and

Personnel Matters The Group met during 12–15 June 1995 to discuss the second draft of the OPCW Staff Regulations, and agreed to continue the discussion at a subsequent meeting. In the interim, the Chairman will continue his consultations with interested delegations. In terms of the OPCW Staff Policy, the Group was presented with two Notes by the Executive Secretary — “Some Options for Achieving Greater Cost Efficiency and Effectiveness in the OPCW Staff Policy” and “Basic Parameters for Preparation of Draft OPCW Staff Policy” and it was agreed that these would also be considered at the Group's next meeting together with background material provided by IAEA and INTLSAT.

The Group considered the Draft Letter of Appointment for Inspector Trainees which had been referred to it by the Expert Group on Training. Although some changes were suggested, the Group agreed that further discussion was required in particular relating to the possible reimbursement of training costs, remuneration and terms of employment of successful trainees before joining OPCW, and privileges and immunities.

Expert Group on Data Systems

This Group met on 29 June 1995 to review progress being made relating to the security study of the planned Information Management System within the Secretariat. At that meeting, the Task Force on Data Systems appraised the Group of progress made regarding the selection and appointment of a consultant to undertake the security study. The objective of the study is to analyse the existing situation at the PTS as well as the future requirements of the OPCW, to address the different aspects which may have an impact on the security of the IMS and to define an overall policy to ensure information security. The contract was awarded on 1 August 1995 to a German firm, IAGB. Work started on the study on 7 August 1995 with meetings being conducted with Secretariat staff and interested delegates on 9–10 August and 6–7 September. It is

hoped that the study will be completed in good time so as to allow the opportunity for the proposals resulting from the study to be considered in capitals. In that way, the overall security policy can be discussed at the next Plenary.

Working Group B

Expert Group on Chemical Weapons This Group met during 3–6 July 1995 but no progress was made on a number of outstanding issues and as a result the Group was unable to issue a report. The Russian position on production facilities was once again debated, with the same opposing views being expressed. The terms of the debate extended to the declaration and inspection of binary programmes and pre-1946 facilities. The same discussion continued at the Eleventh Plenary Session with some delegations expressing alarm at the hardening of positions. In the course of the meeting, a great deal of time was spent in informal consultations in an attempt to develop a model facility agreement for Chemical Weapons Destruction Facilities. Unfortunately, the Group was unable to report any progress in respect of this matter either. The Group spent some time reviewing the section of the Declaration Handbook relating to chemical weapons. Delegations were requested to provide any additional comments to the Secretariat by the 18 August so that these comments could be incorporated into a subsequent revision of the section for further discussion. The Group established a Task Force to oversee the development of this project.

Expert Group on Chemical Industry Issues The Expert Group on Chemical Industry Issues held its Third Combined Meeting with Industry on 26–27 June 1995 which was attended by delegations from 34 Member States and industry representatives from 21 Member States. A delegation representing the European Chemical Industry Council also participated. The Meeting was organised into two workshops and one “Special Session”. The first workshop focused on the Declaration Handbook and reporting requirements. The discussion identified two key requirements of the Handbook; user-friendliness and non-redundancy. Those as yet unresolved declaration issues which particularly affect industry were the focus of the discussion. These included the following: Guidelines on declaring scheduled chemicals in low concentration; methodology for the declaration of national aggregate data of Schedule 2 and 3 chemicals; the declaration requirements relating to discrete organic chemicals and the problems related to using the Harmonised Commodity Description and Coding System. In the Special Session, the concept of an information library was explored in the context of the obligation under Article XI to foster cooperation and to facilitate the exchange of information relating to economic and technological development in the field of chemistry. The second workshop concentrated on Facility Agreements and both the Chemical Industry Association of the United Kingdom and the Chemical Manufacturers’ Association of the USA gave presentations on the practical exercises they had conducted with their own industries to determine precisely how the procedures for conducting initial inspections (for Schedule 2 facilities) would work and how Facility Agree-

ments based on a Model Agreement could be negotiated. A United Kingdom Department of Trade and Industry discussion document targeting producers and users of chemicals was distributed at the Meeting.

Statements by delegates and industry representatives at the meeting urged speedy resolution of outstanding issues so as to encourage early ratification. The most important of these issues were identified as being low concentration guidelines and the declaration of national aggregate data.

The Chairman of the Group undertook Consultations during 4–8 September 1995. In the course of these Consultations, a background paper prepared by the PTS on the issue of Low Concentrations of Schedule 2 and 3 Chemicals was distributed for discussion. The purpose of the paper is to provide the necessary technical information so as to help Member States evaluate two possible approaches identified by the Expert Group. The first approach aims at an agreement on a percentage below which a declaration would not be required and above which the annual amount of the scheduled chemical contained in the mixture produced (processed, consumed) would trigger a declaration. The second approach requires the elaboration of criteria for the ease of recovery of the scheduled chemical from the mixture, to be used together with quantitative thresholds irrespective of the concentration at which the chemical occurs. A further revised version of the Model Facility Agreement for Schedule 2 Plant Sites was also discussed in the course of the Consultations. Further Consultations are scheduled for 21 September.

Expert Group on Safety Procedures This Group met on 22–23 June to continue its discussion of the draft OPCW Health and Safety Regulations, the latest version of which had been distributed to Member States for review and comments following the previous meeting. Despite expectations that the regulations would be completed, the Group was unable to reach final agreement. The Group agreed to meet again in the current intersessional period to continue discussions.

Responding to the Group’s request that information be collated from Member States regarding information on available medications, types of medical treatment and sources of expertise on chemical casualties, the Secretariat has forwarded three separate requests to Member States. The first invites Member States, using the format suggested by the Task Force on Medical Treatment (“Format for the presentation of material concerning the treatment of chemical poisoning”) to record medical procedures and information on medications which the Member States consider suitable. The second request seeks information on what medical treatment is available in relation to chemicals listed in the Annex on Chemicals, with particular emphasis on toxicity data, protective requirements at various exposure levels of the substance and decontamination procedures for materials and personnel. The third request seeks information regarding experts and centres of expertise in Member States in the field of chemical casualties. Member States have been asked to respond before 29 September 1995 so that the information can be discussed at the next meeting of the Task Force on Medical Treatment.

Expert Group on Technical Cooperation and Assistance The Group did not meet during the period reported here. However, following the Group's recommendation at its meeting of the 22–24 May 1995, a temporary Internet site has been established while a more detailed study is being undertaken as to the viability of a permanent site.

On the basis of the Expert Group's proposal, the Technical Cooperation and Assistance Division has, as noted above, organized a Basic Course for Personnel of National Authorities. The course, which commenced on 11 September and runs to 29 September, is being conducted at the Royal Netherlands Air Force School in Woensdrecht, the Netherlands, which has been made available for this purpose by the Host Country. Several Member States have provided teachers, and monetary contributions have been made to assist with the cost of the course by the governments of Canada, the Netherlands, Norway and the Republic of Korea.

Expert Group on Inspection Procedures As noted in CWCB28, this Group had been unable to agree on a Report in respect of its meeting of 2–5 May. Following consultations between the Chairman and concerned delegations, a compromise was effected so as to allow the Report to issue at the commencement of the Group's meeting of 19–21 June 1995.

At the June meeting, the Group considered the report of the Task Force on Analytical Issues (Criteria for the Performance in Proficiency Testing and Sample Preparation) approving the document entitled "Criteria for Acceptable Performance of Laboratories in Proficiency Testing". These criteria provide a means of determining performance of laboratories in proficiency testing. In approving them, the Group stressed that the criteria have been designed solely for the purpose of determining the performance of laboratories in proficiency testing and as such should not be considered as constituting any interpretation of the provisions of the Convention. The Task Force also presented a "Standard Operating Procedure (SOP) for Preparation of Test Samples for OPCW/PTS Proficiency Tests" which was approved by the Group.

Responding to the request of the Group at its May meeting, the Secretariat provided a summary of the current status for the procurement of inspection equipment. In the case of each item of approved equipment, the summary provides information on the number and dates of requests for tenders, the closing date, the number of bids received and the status of the technical evaluation. The Group recommended that the Secretariat maintain an open-ended list of suppliers for each approved item of equipment. It also recommended that in the case of each item of equipment with less than three bids by the closing date, the Secretariat is to consult both with suppliers that expressed interest in bidding and with delegations to determine the reason for the lack of bids.

The Group also discussed a report of the Task Force on the OPCW Analytical Database and, on the basis of their recommendations, the Group approved the results of the evaluation of the IR spectra and the architecture of the OPCW Analytical Database System. Unfortunately, the

contentious issue of the scope of the analytical database remains unresolved, despite extensive discussion. On the one hand, there are those who wish the database to be restricted to scheduled chemicals while on the other hand, there are those who assert that non-scheduled chemicals must be included. That this issue remains unresolved has given rise to a concern within the Secretariat of a pragmatic nature, that is, that several verification functions prescribed by the Convention, irrespective of the scope of verification activities in relation to scheduled chemicals, will require data on unscheduled chemicals in the database. The database will take a significant period to finalise (current estimates of the number of scheduled chemicals runs as high as 10,000) and if the Secretariat were authorised also to include certain kinds of unscheduled chemicals in the database, a considerable amount of additional data would need to be gathered and validated. If work cannot proceed until the dispute is resolved, the concern within the Secretariat is that it will be difficult to complete the database in time for entry into force.

The Group considered the report of the Specialist Task Force on Inspection Equipment Issues (Protective and Safety) and agreed to the technical specifications for two further items of equipment: Boots (Reusable) and a Flammability/Explosive/Air Quality Monitor. This agreement brings to an end a long standing dispute over these items. The Task Force recommended that the Commission include a new item in the list of equipment, a Team Decontamination Kit. Although the Secretariat has previously been authorised to continue with procurement of inspection equipment on the basis of the Draft OPCW Procurement Policy and Regulations, the Group discussed the Policy again in the hope of approving the Policy and Regulations. However, although the draft policy appears to have fundamental agreement, it has not been approved pending resolution of concerns relating to whether or not all inspection equipment will be readily available to all States Parties.

The Group did not finalise its consideration of either the Secretariat's recommendation regarding the establishment and implementation of a QC/QA regime, nor the issue of investigations into alleged use. However both were identified as priority tasks to be addressed during the current intersessional session.

Expert Group on Training The Group did not meet during the period reported here but is scheduled to meet on 29–30 November 1995. Meanwhile, the draft Letter of Appointment for Inspectorate Trainees and the draft Agreement for Training Courses for Inspectors are in the process of being revised by the Secretariat on the basis of comments received from the Expert Group on Administrative Financial and Personnel Matters. The revised draft will be considered during the next meeting of the Expert Group on Training.

A great deal of progress has been made with respect to the previously existing shortages in both Modules 2 and 3 of the General Training Scheme.

As regards Module 2, which covers the Specialist Training Courses, there remains the single shortage of training for 37 students in Block C (Demilitarisation and Destruction of Chemical Munitions). Tentatively, most if not all of

these 37 students may receive training in the Russian Federation. Such an offer, however, is still pending. Previous shortages in offers of Blocks B (CW and Conventional Munitions) and H (Inactivation, Conversion & Destruction of CW Facilities) are now fully covered by the latest offers from the United States. Finally, the Netherlands has offered a training facility that will permit the Secretariat staff to supervise training for all of the inspector candidates in Block A (Team Communication & Management), Block I (Support to Inspection Teams) and their special Inspection Planning course. The US has agreed to provide Block A training materials and instructors to assist in Block A training in the Netherlands. Other Member States are also expected to provide instructor assistance for both Blocks A and I training.

The shortages in Module 3, which covers on-site inspection training, are yet to be satisfactorily resolved. A shortage remains in offers to train approximately 50% of the CW inspector candidates on-site at CW storage, production and destruction facilities. The Russian Federation is considering the possibility of making an offer to fill this critical training shortage, but the likelihood of such an offer cannot be determined at this time. Other Member States are being contacted about the possibility of pooling their resources to offer this type of on-site training. The Training Branch will report on its progress in this matter at the Expert Group meeting in November.

The Group has also prepared two workshops in The Hague for the period 18–22 September. The first two days focus on the Harmonisation of Module 1 Training Courses, and those Member States who are offering Module 1 training have been invited to send representatives. The purpose here is to ensure that the courses certified by the Secretariat do not differ significantly in course content or the length of

key blocks of instruction. The second workshop, open to representatives of all Member States, addresses the issue of performance evaluation of inspector trainees at the various training centres. Performance evaluation criteria will be used to determine which trainees will be hired as inspectors and hence are of considerable interest to Member States. A third workshop is scheduled to be held in The Hague on 27–28 November to address Module 2 course training and will be open to those representatives of Member States that have offered M2 training.

Expert Group on Confidentiality This Group met twice, on 16 and 23 June 1995 and in the course of these meetings, the OPCW Policy on Confidentiality was finalised and subsequently approved by the Commission at the Eleventh Plenary. In achieving agreement on the draft, the Group concentrated on issues relating to rules governing composition and operating procedure of the Confidentiality Commission. While the Group did achieve agreement on the rules it noted that further work would be required in drafting detailed operating procedures to put these rules into practical effect. The Group noted that there were three other issues to be resolved. First, possible exercise of national jurisdiction where immunity is waived by the Director-General or in cases of serious breach of confidentiality by a staff member of the Technical Secretariat. Second, the application of national jurisdiction to natural or legal persons who have breached confidentiality. Third, compensation for losses caused by breach of confidentiality. Working Group B, in its Report presented to the Eleventh Plenary Session, recommended that these three issues be studied by Member States and the Secretariat.

This review was written by Treasa Dunworth, the HSP researcher in The Hague.

Forthcoming events

The Australia Group will meet in Paris during 16–18 October 1995.

In Izhevsk, Russia, during 16–20 October, there will be a NATO Advanced Research Workshop on “Disposing of Chemical Weapons: Technical Responses to Safety, Health and Environmental Concerns”.

The Ad Hoc Group of the States Parties to the Biological Weapons Convention will reconvene in Geneva during 27 November–8 December 1995 for its third session.

The Pugwash Study Group on Implementation of the Chemical and Biological Weapons Conventions will hold its

fourth workshop in Geneva during 2–3 December 1995 on Strengthening the Biological Weapons Convention.

The twelfth plenary session of the OPCW Preparatory Commission will take place in The Hague during 11–15 December 1995.

What follows is taken from the CBW Events data-base of the Sussex Harvard Information Bank, which provides a fuller chronology and more detailed identification of sources. See Progress in The Hague (above) for coverage of OPCW-related developments. The intervals covered in successive Bulletins have a one-month overlap in order to accommodate late-received information. For access to the data-base, apply to its compiler, Julian Perry Robinson.

1 May The UK Defence Ministry, asked in Parliament what radiological, biological or chemical experiments it had carried out in the last thirty years in public areas, states that only simulants CBR agents had been used, in some 100 experiments during the period 1964–77. The response continues: “The majority of these experiments involved releasing the simulants at sea. There have been no experiments in public areas in the last 16 [sic] years.” {*Hansard (Commons)* written answers 1 May}

1 May In Canada, legislation to implement the Chemical Weapons Convention is introduced into Parliament by the Department of Foreign Affairs and International Trade. {Bill C-87} The Bill receives its second reading on 16 May, and is referred to committee. {*Defence Newsletter* May}

2 May In Washington, at a further seminar convened by the Arms Control and Disarmament Agency for briefing the chemical industry on the Chemical Weapons Convention [see 5 May 94], ACDA attorney-advisor Bernard Seward says: “The administration is reviewing the proposed act [to implement the CWC into domestic law] submitted last year [see 10 Oct 94] in order to address industry concerns and improve the quality of the legislation”. The review is nearly complete, he says. {*BNA Chemical Regulation Daily* 5 May}

2 May In the United Kingdom, Parliament hears from a defence minister that there is no evidence of a relationship between the putative Gulf War Syndrome and precautionary medicine. The minister observes that the US research into this possibility, focusing on the nerve-gas pretreatment drug pyridostigmine at Duke University and by the Defense Department [see 9 Apr], is still at a stage from which conclusions cannot yet be drawn. He announces that a progress report on his ministry’s medical assessment of ailing Gulf War veterans [see 27 Feb], of whom some 200 have now been examined, has just been published by the *British Medical Journal*. {*Hansard (Commons)* oral answers 2 May}

3 May In London, Saferworld and Deltac Ltd release a study, *Proliferation and Export Controls*, which offers an analysis of sensitive technologies, including CBW technologies, and countries of export-control concern. {*Defense News* 8 May}

3 May In Washington, Greenpeace International reports that genetically modified organisms (GMOs) “can easily be mailed to an address anywhere in the world” notwithstanding regulations controlling the mailing of pathogens. These are the findings of an investigation in which packages of simulated GMOs bearing a variety of descriptive warning labels had been mailed around the world from Switzerland and the United States. Greenpeace accordingly calls for an international protocol under the Biodiversity Convention that would control and mon-

itor genetic engineering activities in general and the transport of GMOs in particular. Without such tightened regulation, Greenpeace argues, abuse for biological-weapons purposes would remain too easy. {*BNA Chemical Regulation Daily* 5 May}

3 May President Clinton announces the appointment of H Martin Lancaster [see 13 Mar 90 and 8 Mar 94], a member of the US House of Representatives during 1987–95, as Special Advisor to the President and ACDA Director on the Chemical Weapons Convention. {*Chemical & Engineering News* 15 May}

4 May In Cambodia, a Khmer Rouge communiqué reports recent military actions against government forces in which Khmer Rouge units made extensive use of “poison-tipped punji stakes”. {Radio of the Provisional Government of National Union and National Salvation of Cambodia 4 May in BBC-SWB 6 May}

5 May In Tokyo, subway workers at Shinjuku station find two plastic bags in a rest room, one containing about two kilograms of sodium cyanide crystals, the other a litre and a half of sulphuric acid — chemicals which, when mixed, can generate lethal hydrogen cyanide vapour. One of the bags is on fire. Supplies of both chemicals had been found on Aum Shinrikyo premises [see 23 Mar]. The area is speedily evacuated, and police begin investigating the incident as attempted murder. {*New York Times* 7 May}

8 May In Chechnya, federal Russian forces have been using chemical weapons against secessionists [see also 9 Jan], according to a statement from the headquarters of Chechen leader Dzhokhar Dudayev where, it is said, a number of dud Russian chemical artillery shell used in the Shali region have now been collected {Interfax 8 May in BBC-SWB 10 May}. The charge is described by a Federal Security Service public-relations official as complete nonsense: “Such missiles have not been part of Russian army weaponry for a long time now” {Interfax 8 May in BBC-SWB 10 May}. The charge is repeated, however, two weeks later, this time with specific mention of a death from sarin nerve gas {Ekho Mosky 20 May in BBC-SWB 22 May}; and there are also reports of Russian forces using chemical defoliants in southern regions of Chechnya {TASS in AFP 21 May}. A TASS correspondent just returned to Moscow from Chechnya, Nadezhda Chaykova, speaks on the radio about another alleged Russian chemical weapon, found scattered in the woods 15 km from Gudermes — small transparent ampoules containing a green liquid: “When you pick them up in your hand, they blow up from the warmth or the pressure, spraying something like acid”, she says, adding: “A person dies if only a small amount touches the skin”. She says she had

seen two people die in this way. {Ekho Moskvu 22 May in BBC-SWB 24 May}

8 May In the United States, a surface acoustic wave CW-agent detection (SAWCAD) system mounted on a Pioneer Unmanned Aerial Vehicle has just been demonstrated in a series of flight tests against simulated atmospheric detonations of Scud CW warheads. The shoebox-sized system successfully detected, identified and quantified the disseminated CW-agent simulant. The SAWCAD flights had been conducted in late April by the UAV Joint Project Office, funded by the Defense Reconnaissance Office, and were the first to use what the Defense Intelligence Agency calls a MASINT (for 'measurements and signatures intelligence') sensor aboard a drone. {*Aviation Week & Space Technology* 8 May, *Jane's Defence Weekly* 3 Jun}

8 May In Washington, the fourth W Averell Harriman Award is presented to the Chemical Manufacturers Association by the Lawyers Alliance for World Security to honour CMA work in support of the Chemical Weapons Convention. President Clinton has sent a message for the presentation ceremony in which he says: "One of my top priorities is securing the earliest possible ratification and entry into force of the Chemical Weapons Convention, and I look forward to working with CMA to ensure the success of this vital treaty". The Counsel to the President, Abner Mikva, gives the keynote address. {*Chemical & Engineering News* 15 May}

8–11 May In Yamoussoukro, the government of Côte d'Ivoire in conjunction with the OPCW Provisional Technical Secretariat, hosts the third Regional Seminar on National Implementation of the Chemical Weapons Convention for Africa. Participating are representatives of 28 African states, France and a number of nongovernmental organizations including the Harvard Sussex Program. The proceedings of the seminar, including the papers presented, have now been published as No.11 in the PTS/OPCW *Occasional Papers* series.

9 May In the United States, at a meeting of the Maryland Citizens Advisory Commission for Chemical Weapons Demilitarization, there is discussion of the recent findings from Army research on chemdemil technologies alternative to incineration, notably the hot-water-and-sewage-sludge method for mustard gas [see 24–25 Apr]. Some 1500 tons of bulk-stored mustard gas are awaiting destruction at nearby Aberdeen Proving Ground. Commissioners learn that existing federal law may impede use of the new method, even supposing that it can be developed within an acceptable time-frame, for the relevant statute requires that any alternative method applied in CW stockpile destruction be "significantly safer" than the current incineration technology. {*Baltimore Sun* 11 May; AP in *New York Times* 14 May}

9–10 May At the Moscow summit, Presidents Yeltsin and Clinton reportedly make progress on the BWC compliance issue [see 26 Apr]. This is alluded to by President Clinton in his subsequent radio broadcast to the American nation: "we agreed to begin visits to biological weapons factories this August as a part of our common efforts to reduce the threat of biological and chemical weapons proliferation" {US Newswire 15 May}. This agreement seems to represent an end to the impasse over visits to military facilities within the framework of

the trilateral Russia–UK–US statement on BWC compliance [see 3 Apr].

10 May In New York, the United Nations Association of the United States publishes a high-level international panel report, *Confronting the Proliferation Danger: The Role of the Security Council*, concluding that the UN Security Council is largely powerless to prevent the global spread of nuclear and CBW weapons. The panel, chaired by former Presidential National Security Adviser McGeorge Bundy, recommends the appointment of a Special Rapporteur to report directly to the Security Council on a regular basis regarding the state of proliferation. {Inter Press Service 10 May}

11 May Australian Federal Police announce that Aum Shinrikyo, the Japanese religious sect suspected of the Tokyo nerve gas outrage [see 22 Apr], had tested nerve gas on sheep in a remote part of Western Australia, on a ranch which the sect had purchased in 1993. Traces of sarin had been found in samples taken from soil and dead sheep there. {*International Herald Tribune* 12 May}

11 May In New York, the 1995 Review and Extension Conference of the Parties to the Treaty on the Non-Proliferation of Nuclear Weapons, which began on 17 April, ends with unanimous adoption of four key documents, one of which extends the treaty indefinitely. Another of the documents, the initial draft of which was co-sponsored by Egypt [see 23 Feb] and other Arab League states, "calls upon all States of the Middle East that have not yet done so, without exception, to accede to the Treaty"; and it also calls upon those same states "to take practical steps in appropriate fora aimed at making progress towards, inter alia, the establishment of an effectively verifiable Middle East zone free of weapons of mass destruction, nuclear, chemical and biological and their delivery systems, and to refrain from taking any measures that preclude the achievement of this objective". {*Trust and Verify* May}

11 May In the US Senate, the Armed Services Committee holds a hearing on export controls and their impact on defence and national security. Among those testifying is the Deputy Assistant Secretary of Defense for Counterproliferation Policy, Mitchel Wallerstein, who argues what is now an increasingly widely favoured case for greater Defense involvement in controlling exports of dual-use technologies; President Clinton is reportedly preparing an Executive Order to provide for this. {*Defense News* 22 May} Dr Wallerstein describes the existing Defense involvement, which is mediated through his Defense Technology Security Administration. He also describes the related interdepartmental activities, including, in the area of export-control enforcement, the interagency committee known as Shield [see 23 Apr 91], which "provides oversight for chemical and biological agents, precursors, equipment and technology". {Prepared statement via FDCH}

11 May In the United States, seven former manufacturers of Agent Orange are sued in a Texas District Court by civilian employees of Corpus Christi Army Depot who believe that chronic diseases from which they or their families are suffering originate in Agent Orange picked up from contaminated helicopters and other items sent back from the Vietnam War. At least \$500 million in damages is being sought. {*Dallas Morning News* 13 May}

12 May The UN Security Council conducts its 25th bimonthly review of the economic sanctions imposed on Iraq [see 13 Mar]. No draft resolution has been put forward recommending that sanctions be lifted, so they continue in place. {Reuter 11 May, INA 13 May in FBIS-NES 15 May}

13 May The Russian government has “misrepresented the size, scope and maturity of the former Soviet [biological weapons] program” and denied that weaponization and stockpiling of biological-warfare agents had taken place, according to the Director of the US Defense Intelligence Agency, Lt-Gen James Clapper, in a document recently released by the Senate Select Committee on Intelligence and now reported by *Jane’s Defence Weekly* {13 May}. The still-continuing programme involved at least 20 facilities, according to General Clapper, who had also said: “Dual-use facilities for wartime agent production of large quantities of BW agents are found at multiple sites belonging to [the biotechnology consortium] Biopreparat”. He had said, further, that the US intelligence community was observing “inconsistencies” in information declared by Russia about both its biological and its chemical weapons facilities. [See also 3 Apr, Moscow]

14–17 May In Iraq, UNSCOM Vice Chairman Charles Duelfer accompanied by two chemical-weapons experts, meets with the Director of Iraq’s Military Industrialization Commission, General Amer Mohammad Rasheed al-Ubeidi, and other officials mainly for the purpose of resolving remaining doubts about the accounting for imported VX precursors [see 10 Apr] in the light of the amended “full, final and complete disclosure” of past CW programmes which Iraq had furnished on 25 March {S/1995/494}. Unidentified intelligence sources are being quoted as saying that as much as 400 tons of VX precursor material could have gone missing {Reuter 12 May}. A secondary purpose of the mission is to press Iraq to respond to UNSCOM concerns about past BW programmes, especially as regards the accounting for the large tonnage of imported biological growth media [see 14 Apr]. Duelfer tells reporters that his mission has been “partially successful” and that UNSCOM Executive Chairman Rolf Ekéus will be travelling to Baghdad later in the month to try to obtain more answers {AFP 17 May in FBIS-NES 17 May}. It later transpires that Iraq agreed that it would provide further written information on its past CW programmes during the forthcoming visit by the Chairman, but that it would provide no further information in the BW area until UNSCOM had agreed that all other areas were closed {S/1995/294}

Meanwhile, Iraqi Foreign Minister Mohammed Said al-Sahaf has been giving interviews saying that the remaining BW concerns are “trivial”. {UPI 17 May, London *al-Hayat* 20 May in Reuter 20 May}

15 May In the Czech Republic, the interministerial commission investigating allegations that the Czech army had worked on biological weapons [see 17 Mar 94] completed its investigation last September, according to *Mlada fronta Dnes*, but has not yet published its report. A member of the commission, Dr Bohumil Korych, a consultant virologist at Vinohradska hospital in Prague, is quoted by the newspaper as saying that the Military Institute of Immunology and Microbiology in Techonin had facilities enabling it to test and produce biological weapons, which it did. The newspaper also reports that a recent Army inspection of the institute had confirmed that it possessed such

a capability, but that this had been used only for anti-BW defence research. {CTK 15 May}

15 May In Lisbon, under the auspices of the Western European Union, representatives of 27 European governments meet to discuss common security threats. They adopt a report in which reference is made to the dangers of chemical and biological terrorism. The report also calls for the swift implementation of the Chemical Weapons Convention, observing that the treaty is “a means of countering the development of clandestine weapons production by means of a new verification regime entailing intrusive inspections”. {Reuter 16 May}

15 May The US company Satloc of Tempe, Arizona, is selling a new navigational system for agricultural spray aircraft that uses the Defense Department’s Global Positioning System to guide pilots to particular fields and then lay down precisely positioned swathes of spray material {*Aviation Week & Space Technology* 15 May}. Similar systems are marketed by other companies as well. {*Agricultural Aviation* Feb and Mar}

15–17 May In Washington the second annual conference on *Law Enforcement Technology for the 21st Century* is convened by the National Institute of Justice with support from the American Defense Preparedness Association and also with industry sponsorship.

16 May In Japan, police raid the Aum Shinrikyo complex at Kamiku-Isshiki [see 23 Mar] and there arrest Shoko Asahara, leader of the cult. There is massive live television coverage. {Melbourne *The Age* 27 May} Other premises across the country are also raided. The previous night, 41 arrest warrants had been issued on charges of murder and attempted murder in connection with the Tokyo nerve-gas outrage [see 20 Mar]. Ten of the people named in the warrants were already in custody, on lesser charges, including the Aum intelligence minister, Yoshihiro Inoue, who is suspected by the police of having planned and ordered the Tokyo attack. {Kyodo 14 May in BBC-SWB 16 May} All but seven of the 41 suspects are now under arrest {*New York Times* 16 May}. They can be held for up to 23 days without being charged {London *Daily Telegraph* 19 May}.

Supporting materials presented with the police application for the arrest warrants included the information that Aum had bought chemicals and machinery from Russia [see 22 Apr] as well as from other countries. {London *Financial Times* 17 May}

16 May President Hashemi-Rafsanjani of Iran, interviewed for the ABC television network, rejects US allegations that his country is seeking to obtain chemical weapons. {*Vision of the Islamic Republic of Iran* 16 May in BBC-SWB 18 May}

16 May In Washington, the Defense Secretaries of Hungary and the United States sign a military coöperation agreement whose scope includes joint work in anti-CW research and development. {AFP 16 May}

16–17 May The OPCW Provisional Technical Secretariat hosts the first of three projected workshops on Inspectorate training courses. The aim of this one is to harmonize the content of the Module-1 (Basic) courses which different countries have offered. {PC-XI/8}

17 May A British newspaper publishes a letter doubting whether undetected production of the nerve gas sarin would in fact be as easy as some have made out. The letter-writer illustrates the point as follows: "Indeed, if my memory is correct, a brilliant young chemist in the south west of England made Sarin in his house in the 1960s, to see how difficult it was, and he was very rapidly visited by MoD staff notified by the firm supplying his chemicals. (And the MoD later employed him.)" {London *Guardian* 17 May}

17 May The US Defense Department releases a report on US security strategy for the Middle East region, a strategy resting on "dual containment" of the two countries thought to pose the greatest threat to oil-transportation routes, namely Iran and Iraq. The report says that Iraq will resume the production of CBW weapons and missiles within a year of the United Nations lifting sanctions. {Kyodo 18 May}

17 May In the US Senate, the Foreign Relations Committee approves legislation, the Foreign Relations Revitalization bill, that would fold the US Arms Control and Disarmament Agency, together with the US Agency for International Development and the US Information Agency, into the Department of State. {*Inside the Pentagon* 24 Aug}

18 May In Ireland, the government is urged by Fianna Fail MEP Pat Gallagher [see 3 Apr] to concern itself with the state of the million-odd tons of chemical and other munitions dumped by the United Kingdom into the Irish Sea and neighbouring waters during 1945–63 [see 27 Apr]. He recommends that an investigation by the European Commission now be requested by the Irish government. {*Irish Times* 19 May}

The UK Defence Ministry later tells a reporter: "There is no scientific evidence to indicate that chemical weapons dumpsites present a significant risk to human health or to the maritime environment if left undisturbed. For this reason there are currently no UK plans to undertake monitoring of these disposal sites." {Jay Rayner in *Mail on Sunday* 2 Jul}

18 May President Clinton transmits a message to Congress reporting on nuclear and CBW weapons nonproliferation activities under Executive Order No 12938 [see 16 Feb]. On the Chemical Weapons Convention, he says: "I am urging the Senate to give its advice and consent to ratification as soon as possible. The CWC is a critical element of US nonproliferation policy that will significantly enhance our security and that of our friends and allies. I believe that US ratification will help to encourage the ratification process in other countries and, ultimately, the CWC's entry into force." {*Congressional Record* 18 May at H5354-5}

18 May In the US House of Representatives, a subcommittee of the Committee on National Security considers the Defense Authorization legislation for Fiscal Year 1996. The bill includes authorization of \$746.7 million for chemdemil in FY 96 and \$828.7 million in FY 97. {States News Service 18 May}

18 May The US District Court in St Paul, Minnesota, sentences one of the two people found guilty of violating the law implementing the Biological Weapons Convention [see 28 Feb] to two years in gaol. {*Star Tribune* 19 May, *Plain Dealer* 20 May}

19 May China is planning to open to the public archives on Japanese BW research in northeastern China during World War II [see 10 Feb], says an official with the Liaoning provincial archives museum. The opening will happen in August, marking the 50th anniversary of the end of the war. {Xinhua 19 May in BBC-SWB 22 May}

19 May In Peru, the Democratic Constituent Assembly approves ratification of the Chemical Weapons Convention. {Xinhua 20 May}

19–21 May The Pugwash Study Group on Implementation of the CBW Conventions holds its third workshop, again in the Netherlands, at Noordwijk [see 27-29 May 94]. The practical implications of the General Purpose Criterion, including its bearing on the work of the Australia Group, are the main topic of discussion. There are 45 participants from 17 countries, North and South. [Note: the report of the meeting, to be published in *Pugwash Newsletter*, may also be found on the Internet, through the HSP home page on the World Wide Web.]

22 May Russia and the United States are planning joint anti-ballistic missile exercises for 1997. {London *Independent* 23 May}

23 May In China, an official Japanese fact-finding mission of 20 people arrives to resume the survey of sites supposedly containing chemical weapons abandoned by the Imperial Japanese Army [see 13 Mar]. Over the next two weeks the mission will visit Dunhua and Meihekou in Jilin Province, where China has said some 1.8 million chemical weapons were abandoned [see 16 Jun 91 and 18 Feb 92]. {Kyodo 19 May, *International Herald Tribune* 25 May}

Meanwhile, in Japan, Professor Keiichi Tsuneishi of Kanagawa University announces that Japan produced 5.18 million chemical munitions prior to the end of World War II, according to documents in the possession of a former Japanese Imperial Army officer, now living in Tokyo. The documents record production on Okuno Island [see 5 Dec 94] of about 6100 tons of CW agents during 1931–45, of which some went into 3.7 million toxic candles manufactured by the Army on the island, and some went into about 1.48 million shells made in a factory at Sone [see 13 Aug 93] in western Japan. {Kyodo 24 May, *International Herald Tribune* 25 May}

23 May Croatia deposits with the UN Secretary-General its instrument of ratification of the Chemical Weapons Convention, becoming the 28th signatory state to do so.

23 May In the United Kingdom, representatives of the OPCW Provisional Technical Secretariat join with officials of the projected UK CWC National Authority and representatives of UK chemical industry for a "table top" exercise organized by the Department of Trade and Industry on the draft Schedule 2 model facility agreement. {PC-XI/8}

23 May The US Defense Department announces that it will spend \$5 million from its FY95 clinical activities and research budget to fund independent peer-reviewed research into the so-called Gulf War Syndrome. Proposals are requested within 90 days for grant awards in the autumn. {DOD News Briefing 23 May}

President Clinton announces, three days later, the creation of a 12-member panel to serve as his independent Presidential Advisory Committee on Gulf War illnesses [see 6 Mar]. {DPA 26 May}

24 May In Bosnia-Herzegovina, the Defence Ministry issues an NBC alert following the firing by Bosnian Serb artillery of “several poison gas projectiles” into central Sarajevo [see also 6 Apr] {Radio Bosnia-Herzegovina 24 May in BBC-SWB 25 May, HINA 24 May in BBC-SWB 25 and 26 May}. It is reported that UN Military Observers are making a detailed inquiry, and that what appeared to an UNPROFOR spokesman to be white-phosphorus shell had struck Sarajevo buildings during the bombardment {AFP 24 May}. Vice-President Ejup Ganic speaks with the UNPROFOR commander, Lt-Gen Rupert Smith, about “the fact that the aggressor used phosphorus bombs and chemical weapons in these attacks” {Radio Bosnia-Herzegovina 24 May in BBC-SWB 26 May}.

Next day, at a time of renewed Bosnian Serb bombardments of UN safe havens in retaliation for the NATO air-strike on Pale, “nerve gas” is used in an attack on Serici near Zenica, according to Prime Minister Haris Silajdzic. {Croatian Radio 26 May in BBC-SWB 27 May}

24 May In the US Defense Department, the Inspector General issues an adverse report on eight major acquisition programmes, faulting them for failure fully to meet guidelines for anti-CBW protection. In the official response to the IG report, the Services agree with much of what is said, while the Department states that the Defense Acquisition Board will in future pay more attention to CBW concerns. {*Jane's Defence Weekly* 17 Jun}

25 May The US Arms Control and Disarmament Agency submits proposed CWC implementing legislation to the Congress, once again [see 2 May].

Director Holum, having referred in his letter of submission to the “recent chemical attacks in Japan”, goes on to observe that enactment will “enable the United States to outlaw all activities related to chemical weapons, except CWC permitted activities, such as chemical defense programs”. He continues: “This will help fight chemical terrorism by penalizing not just the use, but also the development, production and transfer of chemical weapons. Thus, the enactment of legislation by the United States and other CWC States Parties will make it much easier for law enforcement officials to investigate and punish chemical terrorists early, before chemical weapons are used.” [See also 15 May Lisbon]

25 May In Washington, a conference on *Tokyo and Beyond: Chemical and Biological Weapons Terrorism* is convened jointly by the George Washington University Terrorism Studies Program and the Chemical and Biological Arms Control Institute. An official of the State Department Office of Coordination for Counterterrorism, Michael Jakub, says that the government plans to examine more closely groups such as Aum Shinrikyo; it is the state-sponsored groups with a political agenda which have thus far dominated counterterrorism intelligence collection. {*Kyodo* 25 May}

25 May The US National Research Council panel charged with reviewing the public health and other implications of the Army's BW-simulant spray experiments over US cities and for-

ests during the Cold War years [see 29 Jul 94] conducts its first field hearing, in Minneapolis, taking evidence from more than two dozen people. {*Star Tribune* 25 and 26 May}

26 May Syria possesses the largest stockpile of chemical weapons in the Arab world, according to a study by an Israeli strategic research institute quoted in *Ha'aretz* [see also 28 Apr]. The report says that Syria produces hundreds of tons of chemical weapons a year, chiefly sarin and VX. {DPA 26 May}

27 May The US Army used about a million pounds of nerve agent in the 1200 open-air tests of chemical weapons it conducted in Utah during the Cold War years [see also 26 Feb], according to documents obtained by a reporter on a Salt Lake City newspaper {Lee Davidson of *Deseret News* on National Public Radio 27 May}.

29 May–1 June In Baghdad, UNSCOM Executive Chairman Rolf Ekéus accompanied by a team of experts conducts a further round of high-level talks with Iraqi authorities {AFP 29 and 30 May}. Other purposes of the mission are to prepare for the crucial six-monthly UNSCOM report to the Security Council which falls due on 19 June, and to advance the process of clarifying outstanding issues, especially in the BW area [see 14–17 May], and such possibly related matters as the whereabouts of missing parachute devices for ballistic missiles {*Reuter* 4 Jun}. Technical talks are also held, on chemical weapons. Chairman Ekéus later records that “some significant progress” was made in the CW technical talks, but that “Iraq refused to engage in efforts to resolve, with the specialists accompanying the Executive Chairman for that purpose, the biological weapon issues”. {S/1995/494} As he leaves Baghdad, he tells reporters that he doubts whether the biological issue can be resolved in time for the 19 June report {AFP 1 Jun}.

Iraqi Vice President Taha Yassin Ramadan, addressing a pan-Arab conference in Baghdad on the final day of the mission, speaks of US-inspired procrastination by Chairman Ekéus, saying that there is no “political, legal or ethical” justification for continuation of the UN sanctions. {*Reuter* 1 Jun}

29 May In Helsinki, the Arms Control and Regional Security part of the Middle East peace talks [see 2 May 94 and 2 Feb] is scheduled to reconvene for a new round. Egyptian officials have been portraying it as “make or break”. {*Gerald Segal* in *International Herald Tribune* 16 May}

30 May In the United States, hand-held gas-chromatography devices for detecting and measuring the concentration of airborne CW agents are to be developed, produced and marketed in accordance with an agreement announced today between GRC International Inc and Orbital Sciences Corporation. {*Defense News* and *Aviation Week & Space Technology* 12 Jun}

30 May The US Assistant Defense Secretary for Special Operations and Low Intensity Conflict, Allen Holmes, addressing the 42nd annual National Security Forum at the Air War College, states that “at least 15 countries are known to have offensive chemical weapons programs, the most aggressive being in Iran, Libya and Syria”. {Prepared statement via *Defense Issues*}

31 May In Noordwijk, at a meeting of the North Atlantic Cooperation Council, Russia and NATO agree a document on a broad enhanced dialogue. In its list of topics for "political consultations on issues of common concern", the document includes "proliferation of weapons of mass destruction, including nuclear proliferation, implementation of the Chemical Weapons Convention and strengthening of the Biological and Toxin Weapons Convention". {*Atlantic News* 1 Jun}

31 May The Executive Secretary of the OPCW Preparatory Commission publishes the report of his Legal Adviser on the draft proposed by the OPCW Foundation for the agreement with the developer of the projected OPCW Building, Messrs Provastgoed BV. The report makes redrafting recommendations for consideration by the Preparatory Commission Committee on Relations with the Host Country. {PC-XI/HC/2}

31 May President Clinton, while speaking at the US Air Force Academy graduation ceremony, says: "There is no excuse for the Senate to go slow on approving...the Chemical Weapons Convention... It would make a chemical terror, like the tragic attack in the Tokyo subway, much, much more difficult... [It] will make every American safer." {White House press release 31 May}

31 May In a US court in Ohio, a white supremacist pleads not guilty to charges of forgery and receiving stolen property arising out of his having allegedly misrepresented himself when buying freeze-dried plague bacteria from a laboratory in Maryland. {AP in *Boston Globe* 1 Jun}

1 June In Japan, a trade body under the auspices of the Japan Chemical Industries Association has been formed at the request of the Ministry of International Trade and Industry in order to monitor chemical-industry business involving CW-agent precursors. The 74-member body is tasked to draft marketing guidelines for such chemicals by July. {Kyodo 1 Jun in BBC-SWB 2 Jun}

1 June In Thailand the government has charged its Department of Industrial Works with preparations for implementing the Chemical Weapons Convention, so the Director-General of the Department, Manas Suksaman, tells reporters. {Xinhua 1 Jun}

1 June Monaco deposits with the UN Secretary-General its instrument of ratification of the Chemical Weapons Convention, becoming the 29th signatory state to do so.

1 June Damghan in Iran is depicted in a satellite image published by *Jane's Intelligence Review* with a caption stating that a "chemical warhead production facility" can be seen. The magazine reports that biological weapons research is also conducted at the Damghan facility.

2 June The Executive Secretary of the OPCW Preparatory Commission issues a request to member states for assistance in identifying companies that might wish to tender for the supply of a gas chromatograph for the OPCW Laboratory, as described in the detailed technical specification attached to his request. {PC-XI/B/6}

3 June In Bosnia-Herzegovina, government forces have used "chemical weapons banned by international conventions" in re-

cent fighting in the Mount Treskavica area 45 kilometres south-east of Sarajevo, according to the "Interior Ministry of the Bosnian Serb Republic". {SRNA 3 Jun in BBC-SWB 5 Jun}

3 June In the United States, a report issued by the CIA Directorate for Intelligence some months previously is described by *Jane's Defence Weekly* as a tutorial on dual-use equipments for US export-control officials. The 45-page report is said to include the estimate that key items of equipment for making CBW weapons (which it identifies) are available from nearly 400 companies around the world.

4 June In Bosnia-Herzegovina, Bosnian Serb forces attacking government forces in the Mostar area have recently been using poison gas, according to the information office of the 4th Corps of the Bosnia-Herzegovina Army. {Radio Bosnia-Herzegovina 4 Jun in BBC-SWB 6 Jun}

4 June In San Francisco a burglary suspect dies in police custody after being sprayed with Pepper Spray [see 13 Apr]. This is the 26th such Oleoresin-Capsicum-related death in the state since California police departments became authorized, in October 1992, to use the weapon on a three-year trial basis; in none of the cases, however, has there been evidence of Pepper Spray being the primary cause of death. {*New York Times* 13 and 19 Jun}

The *San Francisco Chronicle* {19 Jun} later quotes from an internal report by one of the larger manufacturers of the weapon — Defense Technology Corporation of Casper, Wyoming — which states that "very little information is known about the health risks involved with the use of Pepper Spray". The report also states that there have been some 40 OC-related deaths nationwide.

4 June In Chile, *El Mercurio* reports that threats to release sarin nerve gas in the Santiago subway have been issued in protest against the imprisonment of General Manuel Contreras, who had headed the intelligence service DINA under President Pinochet. {Kyodo 6 Jun}

6 June In Tokyo, Aum leader Shoko Asahara [see 16 May] and six followers are formally charged with murder and attempted murder for alleged involvement in the subway outrage [see 20 Mar]. Nine others are charged with preparation for murder and twenty more are expected to be charged shortly. {*Los Angeles Times* 7 Jun}

Police sources are releasing snippets of information purportedly about other aspects of the sect's CBW capabilities, intentions and activities, and go on doing so over the coming weeks. This information includes reference to work on a road vehicle adapted to the spraying of sarin {Kyodo 5 Jun in BBC-SWB 6 Jun}; on production of VX nerve gas, and its use to kill defectors and enemies {*Daily Yomiuri* 26 Jun, Kyodo 28 Jul in BBC-SWB 31 Jul}; on the agents of plague, botulism and cholera {TASS 21 May}, including experimental exposures of heretical followers to these agents {Reuter 19 Jun}; on production of several kilograms of mescaline, as well as other psychotropic drugs, for use in initiation rites {AP 10 Jul}; on the production of some 200 kg of mustard gas {Jiji Press 19 Jul}; and on an experimental spraying of anthrax culture from the top of a building in Tokyo in 1993 {Kyodo 25 Jul}

Also citing statements made by Aum detainees, police sources reportedly say that, on the day preceding the Tokyo

subway attack, six litres of sarin had been produced in the research building in the Aum complex at Kamikuishiki {Kyodo 29 Jun in BBC-SWB 4 Jul}. And one of the detainees is said to have admitted being directly involved in the attack, describing how he had carried a plastic bag of sarin into the subway and had then stuck holes in it while an associate kept lookout {DPA 17 May}. There are said to have been five such two-person commandos mounting the attack, using sharpened umbrellas to rupture the bags {Reuter 18 May}.

6 June In China, the official Japanese fact-finding mission on abandoned chemical weapons [see 23 May] has completed its survey of sites in Jilin Province and now departs. A Japanese diplomat in Beijing says that, of the 366 rusting munitions which the team unearthed from the surfaces of what were described as two huge pits into which chemical munitions had been buried, all but one were positively identified as Japanese-made. {Kyodo 5 Jun in FBIS-CHI 6 Jun, Reuter 6 Jun}

Meanwhile, in Japan, the leaders of the government coalition finally achieve consensus on the text of a parliamentary motion, *A Resolution to Renew Determination for Peace Based on the Lessons of History*, in which remorse is expressed for the country's wartime aggression. {London *Independent* 9 Jun}

Next day, in Tokyo, Chief Cabinet Secretary Kozo Igarashi informs reporters: "Our survey proved that former Japanese forces left chemical weapons in China". He says that the two countries will hold talks on the disposal of the weapons. {Reuter 7 Jun}

6 June In Geneva there is a meeting of the Bureau of the BWC Ad Hoc Group [see 4–6 Jan] which agrees to seek proposals from governments on how the Group should proceed. So far only one of the four agreed Friends of the Chair has been appointed: the one allocated to the Western Group [see 27 Mar], on Measures to Promote Compliance, for which the Friend is to be the UK.

6 June In the Netherlands, Parliament votes to ratify the CWC.

7 June In Uzbekistan the government publishes for discussion a document setting out the fundamental principles of its new military doctrine. The document includes the statement that Uzbekistan will not deploy, produce or buy nuclear weapons, and that it will seek to eliminate chemical, bacteriological and other types of weapons of mass destruction. {Tashkent *Narodnoye Slovo* 7 Jun in BBC-SWB 9 Jun} Uzbekistan is not yet a signatory of the CWC.

7 June Egyptian authorities have just verified information which Iraq had provided to UNSCOM on quantities of chemical materials it had imported from Egypt, according to the London-based newspaper *Al-Hayat*. UNSCOM Chairman Rolf Ekéus had visited Egypt, meeting with Foreign Minister Amr Mussa and military officials, after the conclusion of his talks in Baghdad [see 29 May–1 Jun]. {AFP 7 Jun}

7 June In Egypt, a joint Egyptian–US military training exercise, Iron Serpent, begins, scheduled to last for three weeks. MENA {9 Jun in BBC-SWB 12 Jun} reports that the programme "includes training on long-range strategic air transport of troops and the dropping of paratroopers and commandos at night to carry out the mission of seizing and securing vital targets while

the enemy is using electronic warfare and might possibly use chemical weapons".

7 June In the Czech Republic, Prime Minister Vaclav Klaus tells reporters that his government has approved implementing legislation for the Chemical Weapons Convention. The legislation, which now goes to Parliament, would empower controls over all technical equipment and works having technical prerequisites for production of chemical weapons. It would also provide access for OPCW inspectors, control certain imports, and oblige companies to disclose Convention-related data. {CTK 7 Jun}

7 June In the UK House of Commons, the Surgeon General, Vice-Admiral Tony Revell, again appears before the Defence Committee [see 1 Feb] to give evidence on the putative Gulf War Syndrome. Of the veterans that had come forward for medical assessment, 261 had now been examined, and, although there were some very sick people among them, a single characteristic syndrome has not yet been identified. He rejects the possibility of the anti-nerve-gas tablets taken by troops [see 2 May], or their anti-BW vaccinations, having caused any illnesses. What was more likely to have caused illness was, in his view, the stress from being in a totally alien environment coupled with the "fear of chemical, biological and Scud attacks night and day", which was something that had made the Gulf War unique. {PA 7 Jun, London *Independent* 8 Jun}

Lawyers acting for sick veterans subsequently refer to evidence of an unusually high proportion of sick children among the offspring of their clients. {London *Guardian* 12 Jun}

7 June The US Senate passes a bill expanding the powers of government to act against terrorists. The bill, the Comprehensive Terrorism Prevention Act, includes much of the package proposed by President Clinton after the Oklahoma bombing [see 19 Apr]. It also incorporates such additional elements as reform of habeas corpus procedures in order to limit the appeals allowable to convicts sentenced to death, not only people convicted on terrorism charges. With regard to the 1878 Posse Comitatus Act, the compromise reached would allow the military to provide limited technical assistance in cases of terrorism involving CBW weapons of mass destruction; it would not give the military powers of arrest or of search and seizure. Five days later, the version of the bill in the House of Representatives is taken up by the House Judiciary Committee. {*New York Times* 8 and 13 Jun}

7–9 June In Seoul, the government of the Republic of Korea in conjunction with the OPCW Provisional Technical Secretariat hosts the second Asia Pacific Regional Seminar on National Implementation of the Chemical Weapons Convention [see 28–30 Nov 94]. Participating are representatives of 21 states from the Asia-Pacific region, 7 non-regional states and three non-governmental organizations and individuals. {*OPCW Synthesis* 18 Jul}

8 June In Brussels, the NATO Defence Planning Committee and Nuclear Planning Group meet in ministerial session and adopt a final communiqué which includes the following: "We attach the utmost importance to preventing the proliferation of weapons of mass destruction (WMD) and, where this has occurred, to reversing it through diplomatic means. As directed by NATO leaders at the January 1994 Summit, the Alliance is

continuing to intensify and expand its political and defence efforts against proliferation as part of its adaptation to the new security environment. As a defensive alliance, NATO is addressing the range of capabilities needed to discourage WMD proliferation and use. It must also be prepared, if necessary, to counter this risk and thereby protect NATO's populations, territory, and forces. We noted with approval the report of the Joint Committee on Proliferation on the progress made in the activities of the two senior NATO groups on proliferation in the political and defence areas." {NATO press release 8 Jun}

8 June US Arms Control and Disarmament Agency Director John Holum travels to Moscow to continue talks on chemical weapons with the Russian Deputy Foreign Minister and other senior officials. He tells reporters that these talks had begun during the previous autumn after technical-level talks had run aground. The principal issue he describes as "the approach the Russians have taken to definitions under the Chemical Weapons Convention which would, in effect, sharply limit the extent to which the Convention would control and provide long-term reporting on their chemical weapons production facilities [see 26 Apr Washington]". {Federal News Service transcript}

8 June The US House of Representatives approves a bill, the American Overseas Interest Act, which among other things would abolish the Arms Control and Disarmament Agency [see also 17 May]. {*Defense News* 12 Jun}

9 June In Japan, a four-part series in the weekly *Shukan Kinyobi* begins an account of how, in China in 1942, at Beitan village in Hebei Province, nearly a thousand farm workers had been killed with poison gas over a 50-day period beginning that May by the Japanese Imperial Army seeking to flush out and destroy Communist resistance forces. The account, by Japanese researcher Hideaki Ishikriyama, is based on interviews with survivors and former Japanese military personnel. {AFP 8 Jun}

9 June The US General Accounting Office issues an update to its report on the Nunn-Lugar Cooperative Threat Reduction Program [see 3 Mar] {NSIAD-95-165}. It recommends that Congress reduces the FY 1996 programme so as to eliminate some support for the Russian chemdemil programme, arguing that the support would be premature because Russia has neither selected the destruction technology it will use nor has it established and funded the programme. The Defense Department rejects these arguments, saying that the purpose of the Nunn-Lugar support is to remedy exactly those problems; the support is about to "jump start" the chemdemil programme by enabling construction of a pilot plant. {Pentagon daily press briefing 23 May in FDCH Political Transcripts}

10 June The US Defense Department has just released its *Report on Activities and Programs for Countering Proliferation*. The report identifies CW/BW-agent detection, identification and characterization as the lead shortfall in US military capabilities to counter weapons of mass destruction. {*Jane's Defence Weekly* 10 Jun}

11-16 June In Stockholm, the Fifth International Symposium on Protection Against Chemical and Biological Warfare Agents [see 8-12 Jun 92] attracts over 700 participants from some 35 countries. It is opened by the Swedish Defence Minister. The keynote address is given by Dr Graham Pearson of the United

Kingdom, who stresses the need for both active and passive CBW defences even in a world where the CWC and a strengthened BWC have entered into force. There are 81 more podium presentations and another 40 poster presentations.

A seminar on CBW verification open to symposium participants had been organized by Swedish authorities for the immediately preceding weekend. It included a session on the CW work in Iraq of UNSCOM, opened by Executive Chairman Rolf Ekéus. During the session a description was given of a modified Scud warhead found in Iraq that had asbestos insulation, this suggesting that a BW application had been contemplated for it. {*ASA Newsletter* 10 Aug}

13 June The US House of Representatives approves an amendment to its Defense Authorization bill proposed by Congressman Robert Dornan that would halt the Nunn-Lugar programme [see 9 Jun] until the President could certify that Russia had no offensive BW programme. The vote is 244 to 180. {*Washington Post* 14 Jun} The Russian Foreign Ministry later tells reporters: "We flatly dismiss the insinuations that Russia does not fulfil its international obligations as concerns biological weapons". The Ministry spokesman says, further, that the House action contradicts the spirit of constructive coöperation now typifying the trilateral Russian-British-US talks on biological weapons [see 9-10 May]. {TASS 29 Jun in BBC-SWB 1 Jul}

13 June The US Army Chemical Materiel Destruction Agency has awarded Teledyne Brown an initial \$5.4 million contract in its work to clean up former CW sites across the country, so one of the subcontractors announces. {PR Newswire 13 Jun}

14 June In Moscow, the deputy chief of the Russian RKhB Protection Troops, Major General Viktor Kholstov, tells reporters that, if the US Congress really believes Russia to be violating the 1972 Biological Weapons Convention [see 13 May and 13 Jun], the proper course is to activate the UN Security Council complaint-investigation procedure laid down in the Convention.

General Kholstov also speaks of the projected visits to Russian military biological facilities within the framework of the September 1992 trilateral Russia-UK-US statement on BWC compliance [see 9-10 May]. TASS reports him as follows: "Gen Kholstov said that at present all biological installations are being inspected on a trilateral basis with Russia, the United States and Britain as participants. These three countries adopted in October 1993 the statement on confidence building measures. The status of that document was quite uncertain, the general said. The statement provided for mutual inspection but failed to lay down an agreed framework and assessment criteria for use in the course of such inspection. Because of this the first visit of inspectors to non-military biological installations yielded differing conclusions. In particular, the foreign inspectors noted that the Russian partners were not beyond reproach in everything, although some of them insisted that the reproach should be targeted at Russia alone. But the inspectors had failed to detect anything suspicious in the Russian installations. Now, inspection on the basis of those trilateral accords is entering another phase which calls for visits to military installations. As the process is clearly one-sided and there are no clear-cut approaches, the sides agreed that, prior to visits to the military biological installations, the three governments should work out and sign an additional document at a level of intergovernmental agreement signed by them. The new document should specify

what installations are subject to inspection, what principles and assessment criteria are to be applied, and what interpretation of the inspection results is expected. The document is now being worked out, the general stressed. The American side conveyed its proposals concerning changes in the final version on 5th June. It is clear that no visits to the Russian installations have been paid pending the signing of the proposed new agreement, the general said." {TASS 15 Jun in BBC-SWB 16 Jun}

15 June The US House of Representatives passes a resolution of which the operative part reads: "the United States should signify its commitment to reducing the threat posed by chemical weapons by promptly joining the 28 other nations that have ratified the Convention". {*Chemical & Engineering News* 26 Jun} The US Arms Control and Disarmament Agency {press release 20 Jun} issues a statement on behalf of the administration welcoming the resolution.

15 June In Atlanta, Georgia, preliminary findings are released from the US Centers for Disease Control and Prevention study of Gulf War veterans' health problems. Dr William Reeves, who is directing the CDC study, says it is too early to conclude that the veterans are suffering from a disease peculiar to them. "I would not say there is a Gulf War Syndrome... People went to the Gulf and are coming back with chronic health problems. The problems are significantly more common among those who went than among those who didn't. Now we need to explain why." {Reuter in *Boston Globe* 16 Jun}

17 June In Halifax, Nova Scotia, at the close of the G7 summit meeting, the Chairman issues a statement on political and security issues which includes the following: "We emphasise the importance of bringing the Chemical Weapons Convention into force at the earliest possible date, and call for rapid progress in developing verification systems for the Biological and Toxin Weapons Convention" {Reuter 19 Jun}. Of the G7 countries, all but France and Germany have yet to ratify the CWC.

19 June The UN Security Council receives from UNSCOM Executive Chairman Rolf Ekéus his latest six-monthly report on activities under resolution 687 (1991), a report which Iraqi publications and officials have been saying, since the last visit to Baghdad by Ambassador Ekéus [see 29 May–1 Jun], will determine the future coöperativeness of Iraq towards the UN.

The report says: "The Commission is...satisfied that, in the missile and chemical fields, it has achieved such a level of knowledge and understanding of Iraq's past programmes that it can have confidence that Iraq does not now have any significant proscribed capability." On biological weapons, however, the report is unfavourable to Iraq: "The situation in the biological area remains blocked by Iraq's refusal to address the Commission's concerns". The report records an offer made by Deputy Prime Minister Tariq Aziz during the Chairman's last visit to Baghdad that, if UNSCOM and the IAEA were to close their files on the chemical, missile and nuclear programmes, and if they were to report as much to the Security Council, Iraq "would be ready in late June 1995 to address to the Special Commission's satisfaction the...biological issue". {S/1995/494}

Next day, Ambassador Ekéus briefs the Council on the report. And he tells reporters that the Iraqi BW programme appeared to be larger than had at first been thought. According to the US representative, he had told the Council that the amount

of imported bacterial growth media still unaccounted for was now believed to exceed the 17 tons he had reported in April [see 10 Apr]. {*New York Times* 21 Jun}

UNSCOM announces that the director of Iraq's military industrialization organization, General Amer Mohammad Rasheed al Ubeidi, has invited Chairman Ekéus back to Baghdad, and that the visit will begin by the end of June. {Reuter 23 Jun}

19 June At the US National Institutes of Health in Bethesda, a committee chaired by Dr D A Henderson meets to discuss the use of smallpox virus in a test programme for antiviral substances. Current plans for destroying all remaining stocks of the virus [see 18 Jan] are to be held in abeyance pending completion of the programme. The remaining stocks are in the United States, at a CDC laboratory in Atlanta, and in Russia, where they have recently been transferred from Moscow to more secure facilities outside Novosibirsk, at what was once a location for Soviet BW research. {National Public Radio 19 Jun}

20 June In Viet Nam, a US government scientific mission arrives for ten days of talks on potential areas of US-Vietnamese collaboration for which funding might be requested from the US Congress. The mission is led by Dr Christopher Portier of the National Institute for Environmental Health Sciences. {*USA Today* 20 Jun} Dr Arnold Schechter, a member of the team, tells reporters that consideration is being given to joint research on health effects of Agent Orange [see 3 Apr, 3 Apr Viet and 11 May], the herbicide that was extensively used by US forces for defoliation and crop-destruction during the Vietnam War. {AP 30 Jun} This particular topic, however, is not one currently favoured for joint study, it seems, by Vietnamese authorities. {*International Herald Tribune* 14 Jul}

20 June In Stockholm, an annual report from SÄPO, the Swedish secret police, warns of attempts by Swedish businessmen to market production technology for weapons of mass destruction, including CBW weapons. {AFP 20 Jun}

20 June In the United States, the Army has provided further details of BW-agent simulant trials conducted over the Midwest in the 1950s [see 25 May]. The information is released by Congressman Richard Gephardt, who had requested it the previous summer. A run of tests conducted during 1957/58 with zinc cadmium sulphide particles released from a C-119 cargo aircraft had "provided first proof" of what Army scientists were predicting: the feasibility of covering "large areas of the country" with BW agents. {*St Louis Post-Dispatch* 21 Jun}

21 June The Director of US Central Intelligence, John Deutch, testifies before the Senate Select Committee on Intelligence on the possibility of Desert Storm forces having been exposed to CBW agents: "To date, nothing has surfaced in CIA's independent review to change the view that there was no standard chemical or biological weapons use. However, CIA's Office of Scientific and Weapons Research is continuing to focus on intelligence data relevant to whether troops were exposed to chemical or biological weapons. Again, my understanding is that, to date, CIA has found no intelligence evidence of low-level exposure that is deemed convincing. On this point, I should also note that the Defense Department has been very cooperative with the Agency's analytic efforts." {FDCH Congressional Testimony 21 Jun}

22 June In Geneva, Austrian representative Winfried Lang states to the Conference on Disarmament that “no international war since 1945 has been conducted by nuclear, chemical nor biological weapons”. {CD/PV.709}

22 June In New York, the Council on Foreign Relations issues a report, *Non-Lethal Technologies: Military Options and Implications*, produced by a task force chaired by Malcolm H Wiener. Commenting on the “tragic irony” that the Chemical Weapons Convention might, by outlawing “use of chemical riot control agents against combatants in wartime”, cause lethal means to be used against noncombatants, the report recommends: “Further analysis and research should be devoted to the legal aspects of this problem, and to the moral, practical, psychological, and precedential aspects as well”.

23 June The Executive Secretary of the OPCW Preparatory Commission, who has been negotiating for facilities for the first session of the OPCW Conference of States Parties (which is to be convened by the UN Secretary-General not later than 30 days after the CWC enters into force), recommends that the session should take place in the Netherlands Congress Centre in The Hague. He reports that, unless NCC clients who have already booked the facilities can be persuaded to change their bookings, the earliest available time slot for the session after March 1996 is 4 February to 5 March 1997. {PC-XI/HC/3}

23 June In The Hague, the OPCW Preparatory Commission Expert Group on Confidentiality has now produced a complete draft for the *OPCW Confidentiality Policy*. It agrees a report recommending that the draft go forward for adoption. {PC-XI/B/WP.8}

The draft, which has many detailed provisions as necessitated by the CWC Confidentiality Annex, specifies that “all information acquired or produced” by the OPCW and its constituent elements which does not fall within three specified classes of confidentiality — ‘OPCW Restricted’, ‘OPCW Protected’ and ‘OPCW Highly Protected’ — “shall be considered not classified and may be marked appropriately”. Remarkably, the draft then continues: “Information which is not classified will be subject to appropriate protection from release by the Organisation and by States Parties, unless specifically cleared for release in accordance with the separately defined release procedures.” These procedures disallow, among much else, the public release of any information that refers to a State Party, even “unclassified” information, unless that State Party “has specifically requested or consented to” the release; nor may such information be released in accordance with the “limited or non-public release” procedures unless the OPCW Executive Council or Conference of States Parties, upon specific request, decides otherwise.

The draft is subsequently adopted by the Commission at its Eleventh Session a month later, subject to a minor amendment by Working Group B. The Commission also decides to apply the provisions of the draft policy, *mutatis mutandis*, to its own work.

23 June In Washington, the Defense Base Closure and Realignment Commission votes to close or realign 177 military bases including Fort McClellan [see 7 Mar], recommending that the US Army Chemical School and Chemical Defense Training Facility there be transferred elsewhere. The Army has for some time now been seeking to move the School to Fort Leonard Wood, Missouri, and this will now happen, with the live-

agent Training Facility following later, once Fort Wood is ready to receive it. {*Kansas City Star* 24 Jun} There has been strong Chemical Corps opposition, and bitter lobbying {*St Louis Post-Dispatch* 23 Mar, *Time* 22 May, UPI 30 Jun, Maj-Gen G G Watson in *Retorts* Jun}. Congressman Browder writes to President Clinton, who may soon have to act on the Commission’s recommendation, saying that it “places politics above national security” {FDCH Congressional Press Releases 7 Jul}.

26 June The Executive Secretary of the OPCW Preparatory Commission reports that yet more clerical errors have been discovered in the text of the CWC, this time in the Arabic and Russian versions. {PC-VI/7*/Add.1}

26 June In San Francisco, at the United Nations 50th anniversary ceremony, President Clinton says: “We must work together on the Chemical Weapons Convention. We must strengthen our common efforts to fight biological weapons.” He also says: “Recent discoveries of laboratories working to produce biological weapons for terrorists demonstrate the dangerous link between terrorism and the weapons of mass destruction”. {US Newswire 27 Jun}

26–27 June In The Hague, chemical industry representatives convene for their third combined meeting with the OPCW Preparatory Commission Expert Group on Chemical Industry Issues. The meeting is attended by delegations from 22 chemical industry associations or bodies and from 34 member states. The meeting is organized into two consecutive workshops, one on the *Declaration Handbook* and reporting requirements, the other on facility agreements, with a special session in between, on the proposal for an information library for implementing Article XI issues. {OPCW/PTS *Information Series B* no 4}

26–27 June In Washington, the Veterans Affairs Department Persian Gulf Expert Scientific Committee convenes to hear presentations by experts, among them James Tuite, who, during the previous Congress, had directed the Senate Banking Committee investigation from which Senator Riegle’s reports [see 7 Oct 94] on the so-called Gulf War Syndrome had resulted. Tuite states that US commanders during the Gulf War had ordered troops to disregard alarms from CBW agent detectors on the grounds that the alarms could be set off by quantities of agent that were “not enough to hurt you”. He believes that US troops had thus become exposed to low levels of CBW agent [see also 21 Jun]. {Gannett News Service 26 and 27 Jun}

27 June Israeli Foreign Ministry experts are studying the possibility of Israel signing the Biological Weapons Convention in 1996, so *Ha’aretz* reports. {AFP 27 Jun}

27 June The Israeli and Syrian Chiefs of Staff, Generals Amnon Lipkin-Shahak and Hikmat Shihabi, begin talks at a secret location in Washington on Israeli withdrawal from the Golan Heights in return for a peace treaty. {London *Independent* 27 Jun}

27 June From the United Kingdom a delegation of Parliamentarians and leaders of veterans’ organizations leaves for the United States for meetings with US officials on the so-called Gulf War syndrome. The delegation is led by former Health minister Edwina Currie [see 27 Feb and 7 Jun]. {PA 27 Jun}

27 June US Attorney General Janet Reno appears before the Senate Judiciary Committee to respond to questions about the administration's role in the disaster at Waco, Texas, where CS gas and other weapons were used during the final assault on Branch Davidian headquarters there, in which more than 80 people including 20 children died in the conflagration that ended the 51-day siege [see 19 Apr 93]. Senator Arlen Specter (a Pennsylvania Republican) asks: "Were you aware at the time that the authorized use of the CS gas had been banned by the Paris Chemical Weapons Convention?". The Attorney General responded: "I had not heard that". However, according to the *Washington Times* {28 and 30 Jun}, she then went on to say: "I subsequently heard that the treaty may not be ratified and that there was a law enforcement exception."

27–30 June In Sweden, the UN Environment Programme in coöperation with the UN Economic Commission for Europe convenes a regional meeting on *Military Activities and the Environment*, hosted in Linköping by the Swedish government. {UNEP news release 20 Jun}

29 June In Bosnia-Herzegovina, government forces fire poison-gas shells at the Serb-held Sarajevo districts of Nedjarici and Ilidza, according to the Bosnian Serb news agency SRNA. The reporting continues: "The citizens of this Serb district were in their shelters and Serb soldiers wore protective uniforms, hence no one was either hurt or killed in the Muslim attack. However, some 20 head of cattle, which were grazing on the fields in the Nedjarici and Stupsko Brdo areas, died of the effects of poison gas." {SRNA 29 and 30 Jun in BBC-SWB 1 and 3 Jul}

29 June Russian Foreign Minister Andrei Kozyrev, addressing the Conference on Disarmament in Geneva, says that the Russian Government "is actively preparing to ratify" the CWC and supports the implementation work being done in The Hague. He adds: "However, it is essential to take account of Russian interests, particularly in matters relating to the conversion of former chemical weapons production facilities" [see 8 Jun]. {CD/PV.710}

30 June In Moscow, during the fifth meeting of the Gore-Chernomyrdin Commission, Russia and the United States reach an agreement whereby the United States will no longer oppose Russian participation in the CoCom-successor organization [see 7 Feb]. The 23 governments that plan to participate in the new multilateral export control regime, known informally as the New Forum, are to meet in Paris early in September to prepare for a 1996 launch of the regime. {*Defense News* 12 Jun, *Jane's Defence Weekly* 5 Aug}

30 June The Executive Secretary of the OPCW Preparatory Commission reports that a temporary and experimental Internet site has now been established by the Secretariat on the World Wide Web under the URL <http://www.opcw.nl/> for providing information on the work of the Commission and on the CWC and its implementation. {PC-XI/B/7}

30 June–2 July In Baghdad, Iraqi Deputy Prime Minister Tareq Aziz and newly appointed Oil Minister General Amer Mohammed Rashid, meet with visiting UNSCOM Executive Chairman Rolf Ekéus [see 19 Jun], who is accompanied by six-strong team that includes three biological experts. The Iraqi

Military Industrialization Commission, which General Rashid had hitherto headed, has now been attached to the Ministry of Industry and Minerals, which is headed by Lt-Gen Hussein Kamel Hassan, son-in-law of President Saddam Hussein {AFP 30 Jun} and later described as the man who "practically ran the [Commission] through his protégé Mr Amir Rasheed" {*London Financial Times* 11 Aug}. At the end of the visit, Ambassador Ekéus tells reporters that the "Iraqi government has provided new information with regard to biological weapons" {*International Herald Tribune* 3 Jul}.

30 June The Netherlands deposits with the UN Secretary-General its instrument of ratification of the Chemical Weapons Convention [see 6 Jun], becoming the 30th signatory state to do so.

30 June The US Office of Naval Intelligence has just published the annual *DNI Posture Statement*, which, as in earlier years, includes much on proliferation matters. Here it states: "Despite the strictures of the United Nations embargo, Iraq continues in its attempts to acquire items such as precursor chemicals for its chemical weapons program".

30 June The US Marine Corps will acquire a new CBW unit to fight domestic terrorism, says General Chuck Krulak during the ceremony installing him as the new Commandant {*Gannett News Service* 1 Jul}. He later directs the Corps' Combat Development Command to flesh out the concept and to develop doctrine, organization, tactics, techniques and procedures for the projected BioChem Unit by 1 February 1996 {*Defense News* 21 Aug}.

1 July President Clinton receives and approves the recommendations of the Base Realignment and Closure Commission, among them the recommendation that Fort McClellan be closed and the Army Chemical School transferred to Fort Leonard Wood [see 23 Jun]. The decision now remains to be approved by the Congress. {*Retorts* Jun}

2 July From Baghdad, Iraqi News Agency reports that US and allied forces used toxin weapons against Iraq during the Gulf War, as was evident from the high levels of five different types of trichothecene mycotoxin found in samples of vegetation, water, soil, blood and urine. These findings, INA states, are described in a paper presented at a December 1994 symposium in Baghdad on *Post-War Environmental Problems in Iraq*. {INA 2 Jul in BBC-SWB 4 Jul}

2–5 July In Japan these are several further releases of noxious fumes in public places [see 19 Apr]: at a Yokohama subway station {*Reuter in Boston Globe* 3 Jul}, at a Yokohama supermarket {*Washington Post* 3 Jul} and in the Tokyo subway system. Some 45 people in all are hospitalized. A binary hydrogen-cyanide device, similar to the one found at Shinjuku station two months previously [see 5 May], is discovered at Kayabacho station, also in the Tokyo system, with its timing device set. {*International Herald Tribune* 5 Jul}

The police shortly afterwards arrest someone described as "a former criminal gang member", not associated with Aum Shinrikyo, on suspicion of having discharged the noxious fumes which, three months previously, had sickened more than 500 people in the Yokohama subway system [see 19 Apr]; he ad-

mitted to having sprayed tear gas then, from a personal-protection device. {AP in *International Herald Tribune* 7 Jul}

3 July In Brazil the government submits to Congress a bill to control exports of dual-use technologies applicable in nuclear and CBW weapons. The proposed legislation would establish an interministerial export-control commission and require sanctions against violators. {Agencia Estado 4 Jul in BBC-SWB 6 Jul}

4 July In St Petersburg an international conference opens on *Ecological Problems of the Activity of the Defence Industry and Armed Forces in Russia*. It is sponsored by the State Duma Committee on Ecology, the CIS Interparliamentary Assembly, the Russian Defence Ministry, the State Committee for Defence Industries, and the Russian Ministry for the Protection of the Environment and Natural Resources. {TASS 4 Jul}

5 July The UK Defence Ministry, in its response to a Parliamentary question about the process which Britain would have used to manufacture sarin nerve gas in 1956, identifies the following as the “materials to be used” (i.e. the precursors): isopropanol, hydrogen fluoride, methane, triethylamine, sodium hydroxide, aluminium turnings, aluminium chloride, phosphorus trichloride, methyl chloride, oxygen, sodium chloride and nitrogen. A decision against fullscale production was taken later in 1956. {*Hansard (Commons)* written answers 5 Jul}

5 July At the UK chemical defence establishment at Porton Down, mustard gas was the agent administered, as small drops in patch tests, to about 70 percent of the participants in the volunteer programme during the late 1960s and 1970s [see 28 Feb and 25 Apr], so Parliament is informed by the Ministry of Defence. {*Hansard (Commons)* written answers 5 Jul}

5 July From New York, a letter addressed to the UN Security Council by UNSCOM Executive Chairman Rolf Ekéus on his recent mission to Baghdad [see 30 Jun–2 Jul] is reported in news media. In the letter, dated 2 July, Ambassador Ekéus reportedly states that Iraq has now confirmed orally “for the first time the offensive nature of its biological programme”, and that it has undertaken to provide UNSCOM with a “full, final and complete disclosure of all aspects of the past biological weapons programme” by the end of the month. During his visit, Dr Taha Rihab [see 22 Apr], named by Iraq as the director of its biological-weapons programme, had briefed UNSCOM. Ambassador Ekéus had written that BW weapons research had begun in late 1985 at Muthanna, transferred to Salman Pak [see 7 Aug 91] in early 1986, with production taking place during 1989-90 at al-Hakam [see 19-23 Feb] where large amounts of anthrax and botulism agents had been made: production figures are quoted of 5300 gallons of *Clostridium botulinum* culture and 158 gallons of concentrated *Bacillus anthracis* culture. These agents were said to have been destroyed in October 1990. {AFP and Reuter 5 Jul, *Washington Post* 6 Jul}

It is soon afterwards reported by a British journalist that the 39 tons of growth media which Iraq had bought, and of which UNSCOM had been able to account only for 22 tons, had come from companies in Britain (18 tons from Oxoid, since taken over by Unilever and renamed Unipath) and elsewhere. {Alan George in *Plain Dealer* 7 Jul}

6 July In New Delhi, there are reports that Indian scientists suspect the outbreak of plague in Surat last year of having been caused by a genetically modified strain of *Yersinia pestis*. According to the Press Trust of India news agency, this suspicion has been aroused primarily because the protein profile of the Surat strain shows an extra band at around 25,000 daltons. It quotes N P Gupta, former director of the National Institute of Virology in Pune: “Evolution deletes genes, it does not add to them”. {DPA 6 Jul}

6 July In Chechnya, the leader of the Chechen attack on the Russian town of Budennovsk, Shamil Basayev, says in interview that he has “radioactive substances and biological weapons which Russia left to us”. {AFP in TASS 6 Jul} These he threatens to use against Russia if the peace talks in Grozny fail. He says: “Half a kilo of uranium on Moscow and the city will cease to exist”. Russian government spokesman Viktor Konnov says that the threats “look like a miserable farce” {TASS 6 Jul in BBC-SWB 8 Jul}. The chief of Russian RKhB Protection Troops, Col-Gen Stanislav Petrov, states that the Chechens do not possess the necessary equipment or scientific personnel to create a biological weapon, and that there are no institutions on Chechen territory which could assist {TASS 7 Jul}.

A week later Basayev says in interview: “The military assess my words on the use of bacteriological and nuclear weapons on Russian territory as a stupid joke. But it will be enough for me to blow up a canister containing lethal bacteria on a Moscow street, and all of Moscow will not recover. I also have radioactive elements in capsules. But I hope it will not come to that.” {*Komsomolskaya Pravda* 15 Jul in FBIS-SOV 17 Jul}

On 22 July, after an expected agreement with Russian negotiators had not been achieved, Chechen leader Dzhokhar Dudayev says on television that he has weapons of mass destruction that could kill thousands of people “at a stroke”. {AFP 23 Jul}

6 July The Russian government, at a cabinet meeting attended also by regional governors, approves after amendment the draft for a Federal law on destruction of all the Federation’s chemical weapons. The draft bill had been presented by the chairman of the Presidential Committee on CBW Convention Problems, Pavel Syutkin. It must ultimately be approved by the Duma and by the President. Two related bills are also in preparation, one on social protection for citizens engaged in the chemdemil programme, the other on mandatory insurance of citizens against accidents at chemical weapons storage and destruction facilities. {Interfax 6 Jul in BBC-SWB 8 Jul, *Moscow Segodnya* 7 Jul in FBIS-SOV 7 Jul}

Chairman Syutkin later tells reporters that the entire chemdemil programme will take 14 years to complete and cost about R25,000 billion (at January prices), or \$5.5 billion. A further \$500 million, will have to be spent, so *Segodnya* {7 Jul} reports him as saying, “on receiving international inspection teams in line with the text of the international convention”.

In the meanwhile, preparations continue for the facility at Gornyy settlement in the Krasnopartizanskiy district of Saratov region, where there are 1200 tonnes of bulk-stored mustard and lewisite, which will be the first Russian chemdemil site [see 1 Apr]. Work to develop the social infrastructure of the settlement and ecological research has been agreed, and actual construction is due to begin on 1 September, chemdemil itself commencing in 1997. {*Vesti* TV newscast 16 Jun in FBIS-SOV}

7 July In Israel, Beersheba district court rejects the petition for early release from jail by 78-year-old Marcus Klingberg [see 3 Mar], a BW expert formerly at the Israel Institute for Biological Research at Ness-Ziona who had been convicted and imprisoned in 1981 on charges of spying for the Soviet Union [see 24 Aug 94]. He later lodges an appeal with the Supreme Court. {UPI 7 July, *Jerusalem Post* 17 Jul}

10 July Allegations that Burma (Myanmar) has been using biological weapons to eliminate Karen resistance are repeated [see 25 Nov 94] on British television, in the Channel 4 programme *Secret Asia*.

10 July In Bosnia-Herzegovina, Bosnian Serbs are releasing poison gases into Srebrenica as well as artillery fire, according to Radio Bosnia-Herzegovina and Radio Croatia {10 Jul in BBC-SWB 11 Jul}

10–21 July In Geneva, the Ad Hoc Group of BWC States Parties [see 6 Jun] reconvenes for its second session. Ambassador Tibor Tóth of Hungary continues as Chairman, with Ambassador Richard Starr of Australia and Ambassador Jorge Berguño of Chile as Vice Chairmen, and Mr Sohrab Kheradi, Deputy Director of the UN Centre for Disarmament Affairs, as Secretary. Participating are representatives of 52 states parties and one state signatory (Myanmar); 24 working papers are tabled, and there are also four non-papers. Four Friends of the Chair are appointed to assist in consultations and negotiations: on definitions of terms and objective criteria, Dr Ali Mohammadi of Iran; on confidence-building and transparency measures, Ambassador Tóth; on measures to promote compliance, Mr Stephen Pattison of the United Kingdom (who is assisted by Dr Graham Pearson); and on measures related to Article X, Ambassador Berguño. Of the 21 meetings of the session, 20 are allocated to discussions on these four topics, which result in papers by the respective Friends of the Chair. A programme of work is agreed for the next session of the Ad Hoc Group, which is to take place during 27 November through 8 December. A decision will be taken then on the Chairman's proposal to hold two, possibly three, sessions during 1996. {BWC/AD HOC GROUP/28} The head of one of the Western delegations is subsequently quoted as describing the session as "the first phase of a substantive negotiation, and had more to do with framing the debate and attempting to get views on the table so they can be organized into where we go from here". {*Arms Control Reporter* at 701.B.141}

11 July In Germany, a Stuttgart-based businessman is arrested by police on a charge of violating export-control law. *Stern* magazine reports that Hans-Joachim Rose had exported dual-use chemical production equipment, said to be for pesticides, via India to Libya for a new underground chemical-weapons factory being built 80 km southeast of Tripoli [see 7 Nov 93 and 10 Jan]. In 1991 he had imprisoned on a 21-month sentence for exporting chemical-weapons test equipment to Libya. {AFP 11 Jul, *Handelsblatt* 12 Jul}

11 July The UN Security Council conducts its 26th bimonthly review of the economic sanctions imposed on Iraq [see 12 May]. The new information about the Iraqi BW programme [see 5 Jul] has had the effect of rebuilding consensus that the sanctions should remain in place, and no proposal is made to lift them. {DPA 11 Jul}

12 July The Executive Secretary of the OPCW Preparatory Commission issues a questionnaire to member states asking for detailed information, in confidence, about national preparations for entry into force of the CWC, asking for replies during the Eleventh Session, in two weeks time.

13 July Denmark deposits with the UN Secretary-General its instrument of ratification of the Chemical Weapons Convention, becoming the 31st signatory state to do so.

13 July US Arms Control and Disarmament Agency Director John Holum, during an address to the Atlantic Council in Washington, speaks of the recent House decision to fence Nunn-Lugar funds until the President certifies that Russia has no biological weapons programme [see 13 Jun]: "Now, I have not the slightest friendly sentiment toward biological weapons in Russia — nor are we satisfied with Russian efforts thus far to fulfill President Yeltsin's commitment to root out the program he courageously revealed in 1992. But I find it hard to comprehend how anyone could think that a good answer to biological weapons and concerns in Russia is more nuclear weapons in Russia, in the other independent states, or even potentially in the hands of rogue regimes or terrorists, if materials and experts run freely. If this stratagem is the answer to Russian biological weapons, then pestilence is the answer to plague." {Federal News Service transcript}

13 July In the US House of Representatives, the US chemdemil programme is the subject of hearings before the National Security (formerly Armed Services) Military Procurement Subcommittee. There is detailed testimony from the Army, the Defense Department, the General Accounting Office, State authorities and the State Citizens' Advisory Commissions, the Chemical Weapons Working Group, the Federal Emergency Management Agency and the National Research Council chemdemil review committee.

The Army testifies that operations in the Chemical Stockpile Disposal Program are currently scheduled to end in March 2004. The total programme cost is estimated at \$11.9 billion. For FY 1996, the budget both for the CSDP and for the Non-Stockpile Chemical Materiel Program is \$854.7 million [see also 18 May]. {Prepared statement of Assistant Army Secretary Gilbert F Decker}

13 July President Clinton transmits to the US Congress his statutory annual report on *Adherence to and Compliance with Arms Control Agreements*, in both classified and unclassified versions, the latter being published next day by the US Arms Control & Disarmament Agency, which had prepared the report in consultation with the intelligence community, submitting it to the President on 30 May.

On the bilateral US–Russia 1989 Wyoming Memorandum of Understanding [see 7 Jan], the unclassified version of the report states that "questions remain on certain aspects of the Russian data declaration and inspections" under Phase II.

On the 1972 Biological Weapons Convention, the report presents US doubts or concerns about the compliance of eight countries. On *China* it says "there are strong indications that China probably maintains its offensive program", continuing: "The United States Government, therefore, believes in the years after its accession to the BWC, China was not in compliance with its BWC obligations and that it is highly probable that it remains noncompliant". On *Egypt*, which has signed but not

ratified the BWC: "The United States believes that Egypt had developed biological warfare agents by 1972. There is no evidence to indicate that Egypt had eliminated this capability and it remains likely that the Egyptian capability to conduct biological warfare continues to exist." On *Iran*: "The Iranian BW program has been embedded within Iran's extensive biotechnology and pharmaceutical industries so as to obscure its activities... The United States Government reiterates its previous finding that Iran probably has produced biological warfare agents and apparently has weaponized a small quantity of those agents." On *Iraq* the report expresses high scepticism about Iraq's declarations of its BW work to UNSCOM. On *Libya*: "Evidence indicates that...the Libyan Government is seeking to move their research program into a program of weaponized BW agents". On *Russia*: "With regard to former Soviet biological weapons related facilities, some research and production facilities are being deactivated and many have taken severe personnel and funding cuts. However, some facilities, in addition to being engaged in legitimate activity, may be maintaining the capability to produce biological warfare agents... the trilateral process that began in 1992...has not resolved all US concerns." On *Syria*, which has signed but not ratified the BWC: "...based on the evidence available to date, it is highly probable that Syria is developing an offensive biological warfare capability". On *Taiwan*: "The evidence indicating a BW program is not sufficient to determine if Taiwan is engaged in activities prohibited by the BWC". {*Congressional Record* 14 Jul pp S10076-77}

The classified version of the report is said to be more explicit, for example as regards Russia, which it reportedly says is still conducting illicit work on BW weapons. {R Jeffrey Smith in *Washington Post* 15 Jul and 3 Aug}

Chinese Foreign Ministry spokesman Shen Guofang tells a press conference in Beijing the following week that it is "groundless and utterly irresponsible" of the US government to say that China is making biological weapons. {*Xinhua* 18 Jul in BBC-SWB 19 Jul}

14 July The UK House of Commons orders to be printed the 1994/95 annual report and accounts of the Chemical & Biological Defence Establishment. These papers, later released as a 60-page illustrated brochure presenting much detail on several aspects of work at Porton during the year, are the fourth and last such to be issued by CBDE as an independent Agency [see 3 Jan]. The Annual Report explains that, from 1 April, CBDE had ceased to function as a Vote Funded Defence Agency, becoming instead a division of a trading fund, the Defence Evaluation and Research Agency. The section of the report on 'The Future of CBDE' lays stress on the marketing of the Establishment but makes no mention of public service in support of the CWC. Graduate staff at CBDE now stood at 206 people. There had been 74 open-literature publications during the year (as usual not listed in the report), and 90 CBDE Reports. Total gross expenditure during the year had been £52.9 million, of which £3.3 million was recoverable from non-Defence-Ministry customers. {House of Commons (Session 1994-95) papers 510}

15 July The OPCW Provisional Technical Secretariat now has 111 staff members on fixed-term contracts, representing 45 nationalities; the number of staff in professional and higher category grades is 59, of 36 nationalities. The Director of Administration, Reuben Lev of the United States, has retired. The

new Head of the Information Systems Branch is Chantal Quincy Jones of France. {*OPCW Synthesis* 18 Jul, PC-XI/8}

16 July In Tokyo, the arrested leader of Aum Shinrikyo, Shoko Asahara [see 6 Jun], and 11 other sect members are served arrest warrants for murder in connection with the deaths by nerve gas of seven people in Matsumoto in June 1994 [see 19 Mar] {*New York Times* 17 Jul}. That the police had begun to obtain definite evidence linking Aum to the Matsumoto episode had been reported two months previously {AFP 17 May}. Police now think that Aum sprayed over 12 litres of sarin — three times more than was used in the Tokyo subway attack — from a modified van {*Reuter* 4 Aug}

Shoko Asahara is scheduled to stand trial on 26 October. The first verdicts may come two or three years later. {AP in London *Daily Telegraph* 5 Sep}

17 July In Baghdad, an UNSCOM team of eight experts headed by Richard Spurtzel of the United States arrives expecting to study a preliminary draft for the full, final and complete disclosure of the Iraqi BW programme [see 5 Jul] which Iraq has promised by late July. Iraqi authorities do indeed furnish the UNSCOM experts with written material at the outset of the visit, an unidentified Iraqi official later describing what had been handed over as "a report of 400 pages". {*Reuter* 4 Aug} The team is scheduled to leave on 23 July. {AFP 17 Jul, *Reuter* 20 Jul, *Compass* 21 Jul}

President Saddam Hussein says during a public speech on the day of the team's arrival: "Iraq can no longer comply with Security Council resolutions or coöperate with UNSCOM without linking these steps to the lifting of the embargo" [see 11 Jul]. Commentators observe that the statement sets no deadline {David Hirst in London *Guardian* 18 Jul}, but, two days later, Iraqi Foreign Minister Muhammad Sa'id al-Sahhaf announces, while in Cairo seeking Arab League support for the lifting of the embargo, that UNSCOM must complete its work by the end of August or else Iraq will suspend its coöperation. {AP 20 Jul} "There is just the old story of the biological programme", he says, which still necessitates coöperation {*Radio Monte Carlo* 21 Jul in BBC-SWB 24 Jul}. He also tells reporters that China, France and Russia have "worked out a draft resolution calling for lifting the sanctions once the Commission says it has ended its work". {AP 20 Jul}

17 July In Washington, the President's Committee on Human Radiation Experiments convenes to consider the draft of its report on the experiments conducted during 1944-74 in which several thousand human subjects had been exposed to radiation, sometimes unwittingly, for a variety of purposes, including study of possible radiological weapons [see 27 Dec 94] {Philip J Hilts in *New York Times* 17 Jul}. The Department of Energy later releases data indicating that there had been 435 different radiation experiments in which 16,000 men, women and children had been exposed {*International Herald Tribune* 19-20 Aug}.

Human radiation experiments in Britain, on which the public record is much sparser than in America, had been the subject of a television documentary there on 6 July. {*Nature* 13 Jul}

17 July The US Senate Armed Services Committee, in its markup of the 1996 Defense Authorization bill, calls for consolidation of the diverse "nonlethal technology" projects into a single programme funded at \$37.2 million for FY 1996 to be

managed by the Under Secretary of Defense for Acquisition and Technology. The programme is to include “dual use technologies that will benefit both military forces and law enforcement”. {S.Rpt.104-112}

18 July The Executive Secretary of the OPCW Preparatory Commission publishes model legislation for national implementation of the Chemical Weapons Convention. {PC-XI/7} The model does not offer guidance on how “chemical weapons” should be defined in national legislation.

18 July The UK Defence Ministry identifies to Parliament sites that may need to be declared to the OPCW, under Article III of the Chemical Weapons Convention, as sites of past chemical weapons activity. The sites include MOS Randle, CDRE Sutton Oak, CDE Nancekuke, MOS Valley, MOS Rocksavage, MOS Hillhouse, MOS Springfields, Barham Heath, Norton Disney, Lord’s Bridge and West Cottingwith. {*Hansard (Commons)* written answers 18 Jul}

19 July In China, the Chemical Defence Command Engineering Academy has recently published data on the Japanese use of chemical weapons in China during the war of 1937–45. An earlier study by the Academy had estimated total CW casualties as at least 80,000. The new study puts casualties at 94,000 or more, including 10,500 dead. Of the CW fatalities, some 3000 were civilians or prisoners. These figures exclude the estimated 2000 Chinese subsequently killed or injured by CW weapons abandoned by Japan at the end of the war. {Kyodo 19 Jul}

19 July In Bosnia-Herzegovina, Bosnian Serb and rebel Muslim forces attacking in the Johovica region of northwestern Bosnia have been using chemical weapons, according to the press service of the Bosnia-Herzegovina Army 5th Corps, based in Bihac. {Radio Bosnia-Herzegovina 19 Jul in BBC-SWB 20 and 21 Jul}

19 July The UK Defence Ministry, responding to a Parliamentary question, states that about two tonnes of the irritant agent CR had been manufactured at CDE Nancekuke, most of it during the mid 1970s. {*Hansard (Commons)* written answers 19 Jul}

19 July In the United Kingdom, the Department of Trade and Industry publishes for comment a draft of the Bill to implement the CWC that will be introduced into Parliament during its next session. {*Nature* 3 Aug}

19 July US Arms Control and Disarmament Agency Director John Holum tells reporters that the United States has been consulting with high-level Russian officials on Russia’s compliance with the Biological Weapons Convention, and that, while the Russians have taken a number of steps to allay concerns through the US–British–Russian Trilateral Process [see 14 Jun], US officials are “not satisfied” about Russian activities at plants where legitimate biological activities are “co-located” with former biological weapons efforts [see also 13 Jul]. {US Information Agency release 19 Jul}

19 July–1 August In the US House of Representatives, two subcommittees hold ten days of joint hearings on the Waco disaster [see 27 Jun]. The Judiciary Subcommittee on Crime

together with the Government Reform and Oversight Subcommittee on Criminal Justice take evidence during the first four days on the actions of the FBI during the siege of the Branch Davidian compound. Attorney General Janet Reno [see 27 Jun] is the last of 94 witnesses, and assumes full responsibility for the decision to launch the final assault using military vehicles equipped with CS-gas dispensers. {*Congressional Quarterly Weekly Report* 5 Aug}

During the hearings, the Chief Executive Officer, Roger McCarthy, of Failure Analysis Associates Inc, publishes an account of his firm’s investigation, commissioned by the National Rifle Association, of the means and weapons used in the final assault. The CS had been disseminated by FBI agents riding in Bradley Armoured Fighting Vehicles using M79 grenade-launchers to fire through the compound’s windows something approaching 400 Ferret rounds, which are 40mm bursting munitions containing a solution of CS in dichloromethane: a total discharge of some 1.9 and 33 kilograms respectively of CS and solvent. CS had also been disseminated from spray booms on two specially rigged Combat Engineering Vehicles, which are modified tanks that were used in the assault to break through walls; on the booms were mounted ISPRA Protectojet Model 5 Anti-Mob Fog Projectors, of which six were used. Dr McCarthy writes: “our research could uncover no published account of a greater amount [of chemical agent] ever being used against civilians by US law enforcement”. He ends: “Unfortunately, given the extremely high levels of gas exposure, it is entirely possible that innocent parties in the compound were unable to save themselves from the final conflagration due to the effects such overwhelming gas dosages could have.” {*Washington Times* 21 Jul}

During the hearings, there is much testimony on CS gas, its effects, and who knew what about them. Dr David Upshall of the UK Chemical & Biological Defence Establishment reportedly testifies that his study of FBI data on the siege led him to conclude that “the concentrations of CS achieved inside the building were not excessive”. He goes on to say that he and his colleague Dr Paul Rice, an authority on CS, sincerely believe “that CS played no part in these deaths” {*Los Angeles Times* 22 Jul, *Christian Science Monitor* 26 Jul, AP in *Boston Globe* 27 Jul, *New York Times*, 27 Jul, *London Times* 28 Jul, *St Louis Post-Dispatch* 28 Jul}

20 July In France, authorities concerned with the health of French Gulf War veterans have informed the UK Defence Ministry that there have been no reported cases of unexplained illness such as the putative Gulf War Syndrome among French servicemen who served in the Gulf during the war. The Ministry, responding to a Parliamentary question, goes on to state that Nerve Agent Pretreatment Set tablets [see 26 Oct 94 and 7 Jun] had not been issued to French personnel before or during the conflict. {*Hansard (Lords)* written answers 20 Jul}

20 July Peru deposits with the UN Secretary-General its instrument of ratification of the Chemical Weapons Convention [see 19 May], becoming the 32nd signatory state to do so.

21 July The Executive Secretary of the OPCW Preparatory Commission publishes a proposal for reorganizing the method of work of the Commission’s expert groups during the period August–December. The new approach would place greater emphasis on focussed substantive consultations conducted either by the chairmen of the expert groups or by designated

friends of the chair. The proposal sets out clusters of substantive issues on which such consultations might take place. The proposal also includes a detailed schedule for the consultations. {PC-XI/9}

23 July In Hanoi there has recently been a preparatory meeting for the new National Programme on the Studying of the Effects of the Defoliant Agent Orange. The Vietnamese Ministry of War Invalids and Social Affairs, and several other ministries as well, are involved in the programme, which is being implemented by the Vietnam Soviet Tropical Centre. {VNA 23 Jul in BBC-SWB 25 Jul} [See also 20 Jun]

24 July In Chechnya, phosgene gas is used by the separatist forces of Dzhokhar Dudayev against Russian troops in the region of Bamut, according to the commander of Russian RKhB Protection Troops in Chechnya, Valeriy Bashkevich, speaking some three weeks later. He says that two soldiers had been hospitalized as a result, while others had successfully protected themselves. {TASS 12 Aug in BBC-SWB 14 Aug}

24 July In Bosnia-Herzegovina, the Bosnian Serb forces that have been attacking the UN safe area of Zepa for the past ten days have been using "banned chemical agents" according to the Bosnia-Herzegovina Army press centre {Radio Bosnia-Herzegovina 24 and 25 Jul in BBC-SWB 26 and 27 Jul}. Later reports, gathered by the *New York Times* {27 Jul} from people fleeing Zepa and from medical aid workers, are compatible with an anticholinergic agent such as BZ having been spread by Serb artillery bombardments.

The US State Department makes the following statement to reporters at its regular briefing on 27 July: "We are not in a position to confirm these reports right now, but we are certainly going to urge the United Nations and others to look into them... They seem to be reports by a number of people who were doing the fighting inside Zepa." {Federal News Service transcript}

24–28 July In The Hague, the OPCW Preparatory Commission convenes for its eleventh plenary session [see 3-7 Apr]. Participating are 93 of the 159 CWC signatory states. [For further details, see *Progress in The Hague* above.]

25 July In Slovakia, a delegation of Polish chemical defence experts led by Col Wladislav Karcz arrives in Trencin on a four-day working visit to the Department of Radiation, Chemical and Biological Protection of the Army General Staff. On the agenda are options for coöperation and information exchange in particular areas. {TASR 25 Jul in BBC-SWB 27 Jul}

26 July In Bosnia-Herzegovina, "chemical weapons...banned by international conventions" are used by Bosnian Serb forces around Cajnice to the southeast of Gorazde, according to Radio Bosnia-Herzegovina {26 Jul in BBC-SWB 28 Jul}.

27 July The UK Ministry of Defence publishes the "independent clinical audit" of its Medical Assessment Programme for ailing veterans of the Gulf War which it had commissioned from the Royal College of Physicians [see 1 Feb]. The College says of the programme: "The findings at present are hard to assess in the context of the possible existence of a specific Gulf War Syndrome. The plurality of diseases encountered in this group make it difficult to conceive of a single aetiological agent." Exploring so complex a medical riddle needs "far greater re-

sources than have yet been made available". The Ministry announces that it is now recruiting a team of four experts in the fields of epidemiology, immunology, toxicology and tropical diseases, to be nominated by the College. The Ministry also announces acceptance of most of the College's other advice, except for the recommendation that every veteran in the Assessment Programme should also receive a psychiatric examination. A Ministry 24-hour helpline for information on the Assessment Programme is to be opened, on telephone number (0171) 305 5087. {UK Ministry of Defence press release 27 Jul, PA 27 Jul, Reuter 27 Jul}

Commenting on the audit, Hilary Meredith, joint coöordinator of the Gulf War Solicitors' Action Group which is handling claims by 611 veterans, says: "We are glad to see the report indicates there are issues worth investigation — something the Government has, until now, refused to admit". Legal-aid certificates have so far been granted to about a hundred of the claimants, and the first writs claiming damages are likely to be issued against the Ministry of Defence next month. {London *Daily Telegraph* 28 Jul}

28 July In Bosnia-Herzegovina, Croatian regular army troops attacking Bosnian Serb positions in the Grahovo area of southwest Bosnia use "artillery shells filled with chemical substances" according to the Bosnian Serb news agency SRNA {28 Jul in BBC-SWB 31 Jul}. The press office of the Bosnian Serb 2nd Krajina Corps reports use of "asphyxiating poison gas" {Tanjug 28 Jul in BBC-SWB 31 Jul}

30 July President Yeltsin has recently received from the chief of the Russian RKhB Protection Troops, Col-Gen Stanislav Petrov, a report identifying sites where surplus chemical weapons have in the past been buried or otherwise discarded. The President had called for the report in response to mounting public disquiet about health and environmental dangers of the dumps. General Petrov is reported as having stated that "these dumps may cause health problems in 10 regions of the former Soviet Union".

A group of concerned Russian scientists led by Lev Fedorov [see 5 Dec 94] is campaigning for the release of detailed information, having already issued a preliminary report of its own identifying numerous dump sites. {Gabriel Ronay in *Scotland on Sunday* 30 Jul}

31 July The US National Research Council panel that is investigating the Army BW simulant trials conducted over US cities and other regions during the Cold War years [see 20 Jun] holds its second public hearing [see 25 May], this one in Fort Wayne, Indiana, over which some 3500 pounds of zinc cadmium sulphide particles were sprayed in 70 releases during 1964-66. Panel chairman Rogene Henderson says that his team will be relying on available data for its conclusions, but will recommend new studies if it believes them to be necessary. {*Indianapolis Star* 30 Jul and 17 Aug}

31 July–2 August At Harbin in China, a symposium on Unit 731 — the principal biological-warfare element of the Japanese Imperial Army [see 10 Feb] — is jointly sponsored by a the History Research Institute of the Heilongjiang Academy of Social Sciences and a Japanese international symposium committee. There are some 80 Chinese and 100 Japanese participants, the former including victims of BW experiments, the latter including high-school and university educators and

researchers. Participation from other countries is disallowed by Beijing authorities. {*Mainichi Daily News* 26 Jul, Kyodo 2 Aug, UPI 8 Aug, Xinhua 11 Aug in BBC-SWB 14 Aug}

One of the papers to be presented, by Yoshiaki Yoshimi of Chuo University, is reported to cite documentary evidence on biological warfare conducted in China in 1940 with cholera and plague bacteria by Unit 731 showing, for the first time, that it was a campaign staged under the formal chain of command of the Imperial Army, directed by the General Staff Office, and specifically approved by the Emperor {Kyodo 28 Jul}. A researcher from the Chinese Academy of Military Sciences, Guo Chengzhou, has recently concluded that, in all, Japan used BW weapons in 20 provinces and autonomous regions of China during the 1937–45 war, killing hundreds of thousands of Chinese civilians, so the official Chinese news agency Xinhua reports {2 Aug}. Chinese news media are publishing reports from other such studies of Japanese BW {e.g. China Radio International 8 Aug in BBC-SWB 12 Aug}, and, in addition to the Unit 731 museum in Harbin, Chinese authorities are currently building an exhibition room in Changchun on the site of Unit 100, another secret Japanese BW institute {Xinhua 10 Aug in BBC-SWB 12 Aug}

With the approach of the 50th anniversary of the end of World War II, the public record of Japanese human experimentation for BW and other purposes has been increasing, and continues to do so, as additional [see 10 Feb] former members of the Japanese biological-weapons programme, and victims of it, publish reminiscences or talk to journalists. {*Washington Times* 21 May, *San Francisco Examiner* 9 Jul, *US News & World Report* 31 Jul, Kyodo 6 Aug}. [See also 19 May]

1 August In Russia, the government's Commission for Operative Issues, which is chaired by First Vice Prime Minister Oleg Soskovets, considers the country's readiness to implement the Chemical Weapons Convention. It receives a report from the Chief of the General Staff of the Russian Armed Forces, General Mikhail Kolesnikov. Reportedly, the general casts doubt on the country's ability to destroy its stockpile of chemical weapons, and speaks of its increasing vulnerability to theft. He says that only 30 percent of the 1994 chemdemil budget had been funded, while of the R153 billion (\$33 million) requested for 1995 only R13.1 billion had thus far been provided, and in 1996 R509.6 billion will be sought. He is quoted, too, as saying that the cost of destroying the entire stockpile will be less than \$3.5 billion [*sic*; see also 6 Jul], a figure which he contrasts with the \$12 billion that has been quoted [see 13 Jul] for the US chemdemil programme. The Commission has reportedly instructed the Finance Ministry to earmark special funds for eliminating the stockpile. {TASS 31 Jul, and 1 Aug in BBC-SWB 3 Aug}

1 August In the United States, sarin nerve-gas leaking from M55 rockets stored at Anniston Army Depot, Alabama, causes one worker to be kept in hospital for observation and forces the evacuation of sixty others. {Reuter 2 Aug}

1 August In the US Senate, Majority Leader Robert Dole sets aside the Foreign Relations Revitalization Bill, despite its approval by the Foreign Relations Committee in May [see 17 May], as having insufficient support to survive a Democrat-led filibuster. Reportedly, this action later causes the committee chairman, Senator Jesse Helms, to freeze all treaty-ratification and nomination business currently before the Foreign Relations

Committee, including the Chemical Weapons Convention, in order to pressure Democrats to drop their threat of filibuster. Talks between the White House and Congress on a compromise are later said to be under way. Of the currently blocked treaties, Senate consideration of START II is expected to take precedence over the CWC when the deadlock is finally broken. {*New York Times* 20 Aug, *Inside the Pentagon* 24 Aug and 7 Sep}

1 August In Washington, the Operation Desert Shield/Desert Storm Association begins a six-day meeting of veterans, some representing state or local groups, to develop a coordinated strategy for securing better treatment for veterans afflicted by the putative Gulf War Syndrome. {Gannett News Service 2 Aug, London *Guardian* 3 Aug, *Hartford Courant* 3 Aug}

The Defense Department this same day releases a report setting out further findings from its Comprehensive Clinical Evaluation Program [see 9 Mar], in which 10,020 veterans and family members complaining of one or more of a variety of symptoms have now been examined. The Assistant Secretary of Defense for Health Affairs, Dr Stephen Joseph, tells reporters that the on-going study "continues to show no clinical evidence for new or unique illnesses or syndromes among Persian Gulf veterans" — even though veterans have been found suffering from real ailments. {AP in *New York Times* 2 Aug}

Two days later the Defense Department announces that it is setting up *Gulf Link*, a World Wide Web site on the Internet through which anyone can access a data-base of declassified Gulf War documents, mostly intelligence-related information. The URL is <http://www.dtic.dla.mil/gulflink/>. {Reuter 3 Aug}

2 August In Moscow the commander of the Russian RKhB Protection Troops, Col Gen Stanislav Petrov, speaks in interview of the need for additional state expenditure on security at CW weapon sites. He cites the recent publication by an environmentalist group of a map showing the storage locations as an encouragement to the "country's criminals". {TASS 2 Aug in BBC-SWB 4 Aug} [See also 30 Jul]

2 August The US Senate votes down an amendment to the FY 1996 Defense Authorization bill that would have eliminated an expansion of the nationwide anti-ballistic-missile system. Expansion has already been supported by the House of Representatives despite the arguments of Administration officials that it would violate the 1972 ABM Treaty, thus jeopardizing the START agreements. Supporters of the expansion have cited an increasing missile threat to the continental United States from countries with access to weapons of mass destruction. {*International Herald Tribune* 4 Aug}

3 August President Clinton, in a formal report to Congress, states that Iraq remains a threat to regional peace and security, for which reason his administration will "continue to insist that the sanctions be maintained until Iraq complies with all relevant provisions of UN Security Council resolutions". {AFP 4 Aug}

The US Representative to the United Nations, Ambassador Madeleine Albright, in testimony to the Senate Foreign Relations Sub-Committee on Near Eastern and South Asian Affairs, characterizes the compliance of Iraq with UN resolutions as "grudging, slow, sporadic and insufficient". On biological weapons, she says: "We believe that the Iraqis began their biological warfare program much earlier than they have admitted, and that more biological agents were manufactured and many more

facilities and people involved than Iraq has revealed". She states that "the Iraqis have admitted to producing more than 500,000 litres [but see 5 Jul, and see also 17 Jul] of anthrax and botulinum toxin at the Al Hakam facility". She says that, if the oil embargo were to be lifted, "Iraq could then rebuild its weapons of mass destruction programs, a process that would take: less than a year for Iraq's biological weapons program; two to three years for its chemical weapons program; and five to seven years, with foreign help, for a first nuclear device".

On chemical weapons, she adds: "The Habbanayah II facility produced CW agent precursor chemicals before Desert Storm. The Iraqis have rebuilt the main production building and the chlorine plant and have added a phenol production line as well as a ferric chloride line. These production lines contain dual-use equipment that, in the absence of UNSCOM, could easily be converted to CW agent or precursor chemical production." She displays an aerial photograph of the facility [see also 21 Mar]. {Prepared statement on FDCH Congressional Testimony, *New York Times* 4 Aug}

4 August The US Senate votes down an amendment to the FY 1996 Defense Authorization bill that would have eliminated funding for preparations for low-yield nuclear tests. {*International Herald Tribune* 5-6 Aug} Arguments recently heard in America in favour of testing include the need to design such new nuclear weapons as the so-called "counterproliferation weapons" for destroying underground factories or storage depots for weapons of mass destruction {Jessica Mathews in *International Herald Tribune* 14 Jun}.

But President Clinton, a week later, announces a new US position for the Geneva talks on a Comprehensive Test Ban: "The United States will now insist on a test ban that prohibits any nuclear weapons test explosion or any other nuclear explosion. I am convinced this decision will speed the negotiations so that we can achieve our goal of signing a comprehensive nuclear test ban next year." {London *Financial Times* 12-13 Aug}

4 August In the United States, a federal grand jury returns indictments against two Minnesotans on charges of violating the Biological Weapons Anti-Terrorism Act of 1989, which is the legislation that implements the Biological Weapons Convention into US domestic law. The people indicted are associates, in the tax protest group called the "Patriot's Council", of the two men who were convicted under the Act five months previously for producing ricin from castor beans for other than peaceful purposes [see 18 May]. {*Star Tribune* 5 Aug}

4-6 August In Baghdad, UNSCOM Executive Chairman Rolf Ekéus, accompanied by a team of six including three biological experts {AFP 4 Aug}, meets with Deputy Prime Minister Tareq Aziz and Oil Minister Amir Mohammed Rasheed for a further round of talks [see 30 Jun]. Early in the visit, he is given what Iraq describes as the promised full, final and complete disclosure of its past BW weapons programme [see 5 and 17 Jul] {Reuters in *International Herald Tribune* 7 Aug}. On the following day, Tareq Aziz reaffirms [see 17 Jul] his government's deadline of the end of August for UNSCOM to complete its work {Reuter 8 Aug}. At the close of the visit, Ambassador Ekéus speaks to reporters about the new BW disclosure, which is some 530 pages long, saying: "According to our first glance, it is of course not thoroughly complete". However, he goes on to say that his experts have found that it "contains very important

information which will be helpful to sort out remaining problems under the cease-fire resolutions". He also says that, during the talks, the two sides had concentrated on "conceptual clarification", which Iraq still needed to supply. {Reuter 6 Aug}

6 August In Iran, the managing director of Keshavarz Chemical Plant at Alborz industrial city in Qazvin [see 21 Feb 92 and 13-17 Nov 93], Mohammad Nabi Parvin, denies reports that his plant has been producing chemical weapons. He says that it makes only pesticides for farmlands and homes, and that it imports 40 percent of its feedstock from Europe, Japan, India and China. The plant had been damaged by a fire on 14 July. {Xinhua 7 Aug}

8 August From Iraq, Lt-Gen Hussein Kamel Hassan al-Majid, who heads the Ministry of Industry and Minerals to which the Military Industrialization Organization had been attached a month previously [see 30 Jun-2 Jul], flees to Jordan accompanied by his brother. Both are married to daughters of President Saddam Hussein, and arrive in Jordan with their wives, children and 15 army officers. They are granted asylum. {Reuter in London *Guardian* 10 Aug, AFP 12 Aug, London *Observer* 20 Aug} The general is described by UNSCOM Executive Chairman Rolf Ekéus, speaking to reporters in New York two days later, as having been the "mastermind" behind Baghdad's "remarkably successful" missile programme and at various times in charge of its chemical, biological and nuclear programmes. {Reuter 10 Aug}

Among the many explanations being suggested for the general's defection, one is his worsening relations with the President's son Uday {AFP 10 Aug}, the fact of which he confirms during his first press conference in Amman {*New York Times* 13 Aug, CNN News 12 Aug}. An element of this is said to have been a falling out over how much information Iraq should give UNSCOM about its biological-weapons programme. {London *Financial Times* 11 Aug} A spokesman in Damascus for the Iraqi opposition group SAIRI says: "Hassan's group was convinced, contrary to Saddam, that there was no other way around the UN demands and they had to conform to the international resolutions". {AFP 12 Aug}

9 August In Chechnya, an official working for the humanitarian rescue service Exparc, Alexander Gzovsky, tells reporters in Grozny that aid workers had found evidence indicative of toxic chemicals having been used several times during the fighting in Chechnya [see also 8 May and 24 Jul]. Such signs of chemical warfare, including widespread skin complaints, had showed up in the areas of Avtury (50 km southeast of Grozny), Shatoi (80 km south of Grozny), Roshni-Chu (60 km south of Grozny) and Nozhay-Yurt (120 km southeast of Grozny). There were also eye-witness accounts. Samples had been gathered, and were now being analysed in Moscow. Gzovsky says: "It is hard to say at this stage which side used the gas". Exparc volunteer worker Yelena Petrova is reported to have said that "special chemical containers of the kind used for chemical warfare" had been found in the Shatoi area in May by Exparc workers, and two more had recently been found near Avtury. {AFP 9 Aug} She later says that a container found in Avtury with remnants of an unknown chemical has been sent to Switzerland for an "independent analysis". She also says she has information suggesting that the chemical in the container had been used against Avtury's population in May and June. {Interfax 19 Aug in BBC-SWB 21 Aug}

An *Izvestia* reporter is later taken by Chechen militants to a site in the Avtury area where he finds "pieces of green plastic shaped like huge winged maple seeds". Chechens tell him that these had been dropped in clusters from Russian planes during an air raid in May, shortly before the military campaign ceased. Eyewitnesses say that some time after the "seeds" reached the ground they began exploding; inside each one was a small capsule filled with liquid which smelled strongly of garlic and caused severe burning in contact with skin. {Alexander Mnatsakanyan in Moscow *Izvestia* 24 Aug} [See also 8 May]

Moscow Echo radio reports anonymous sources in the Russian secret services as saying that, in several regions of Chechnya, some Russian fighting units had employed household chemicals inserted into conventional shells, and that such weapons had also been used by Chechen forces. {AFP 24 Aug}

9 August UNSCOM Executive Chairman Rolf Ekéus, now back in New York after receiving receiving Iraq's "full, final and complete disclosure" of its BW programme [see 4–6 Aug], tells reporters that the disclosure is incomplete. {*New York Times* 10 Aug} He says that a list of its shortcomings has been handed to Iraq, but doubts the processes of rectifying them and verifying new information can be completed before the Security Council's next 60-day review of sanctions, due on 9 September. {Reuters 9 Aug}

Next day he briefs the Security Council on the disclosure and then speaks about it at a press conference. He says that, although the disclosure includes information on Iraq's biological-weapons research, development and production, it has shortcomings and contradictions, and leaves doubts. Thus there is still no accounting for some 20 percent of the bacterial growth media imported by Iraq, and no convincing evidence (such as the written orders) is presented to show that the BW agents said to have been produced were indeed destroyed in October 1990. Weaponization work on BW agents is not described. {DPA, Reuter and Xinhua 10 Aug}

11 August In Chechnya, at the village of Avtury in Shali, 192 people, mostly women and children, are taken sick apparently after exposure to an unidentified chemical. Doctors at the local hospital speculate that such an exposure might have been due either to a leak from a nearby chemical plant, or to the heavy use of pesticides earlier in the year, or to the employment of chemical weapons in the vicinity, either by Russian or by separatist forces [see 9 Aug]. Next day the Russian government sends in a special joint Russian–Chechen commission to investigate. {TASS 12 Aug}

The special commission soon reports that there has been an outbreak of skin disease in the area. It might have been caused such things as lack of clean water or allergy, but there is no evidence pointing to use of chemical weapons. A special medical investigation is needed. Lt-Gen Vladimir Shumov, who is deputy head of the Russian territorial administration in Chechnya and a member of the commission, tells reporters that rumours about the use of chemical agents by Federal troops are spread by those who do not want the situation in Chechnya to stabilize. {TASS 12 Aug}

A team of Russian doctors and scientists, including CW experts, arrives in Avtury on 19 August to investigate. {Interfax 19 Aug in BBC-SWB 21 Aug} This special commission also includes two people from Worldwide Television News. {*Izvestia* 24 Aug} Five days later, the head of the commission, Dr Yuri

Musiichuk, who is director of the St Petersburg Institute of Hygiene and Occupational Pathology, announces that 110 of the 226 Avtury residents examined by his medical team were suffering from scabies, and that no evidence at all of chemical-weapons use had been found. A final report will be issued after laboratory analysis of the water, soil and vegetation samples collected. Dr Musiichuk reportedly says: "It is obvious that the Russian Army has not used any toxic substances. Those who doubt the competence of my conclusions can carry out their own on-site studies". {TASS 25 Aug, *Segodnya* 25 Aug, Inter Press Service 30 Aug}

13 August Iraqi Deputy Prime Minister Tareq Aziz announces that he has sent an "urgent invitation" to UNSCOM Executive Chairman Rolf Ekéus and IAEA Director General Hans Blix to come to Baghdad in order to receive data on Iraq's past weapons programmes that had hitherto, he says, been withheld from UNSCOM and the IAEA on the orders of Lt-Gen Hussein Kamel Hassan [see 8 Aug]. {AP 13 Aug, London *Financial Times* 4 Sep} Ambassador Ekéus announces his acceptance of the invitation, saying that it "is evident that there is some important and secret information that Baghdad is prepared to disclose" before General Hussein Kamel Hassan [see 8 Aug] makes his own disclosures. Baghdad next day rescinds its end-August deadline for completion of UNSCOM's work [see 4–6 Aug]. {AFP 15 Aug}

13 August In Bosnia-Herzegovina, government forces have been using chemical weapons in artillery attacks on villages and civilian targets in the Ozren-Vozuca area of north-central Bosnia according to the Bosnian Serb news agency: "In these attacks the Muslims used shells filled with caustic soda, as is shown by parched grass and dead cattle. There were no casualties but the damage caused is considerable." {SRNA 14 Aug in BBC-SWB 16 Aug} [See also 9 Aug Chechnya]

13 August In the United States, recently declassified state papers on Japanese use of prisoners, including American ones, for biological-weapons experiments during World War II [see ca 15–17 Apr 92 and 20 Aug 93, and see also 31 Jul–2 Aug] are reported by the California newspaper *Mercury News* (13 Aug). The papers appear to document something of the arrangement whereby, in return for experimental data, the head of the Japanese BW organization, Lt-Gen Shiro Ishii, was protected against prosecution as a war criminal. [See also 17 Dec 94]

14 August Algeria deposits with the UN Secretary-General its instrument of ratification of the Chemical Weapons Convention [see 29 Jan], becoming the 33rd signatory state to do so.

14 August In Washington, the President's Advisory Committee on Persian Gulf War Veterans Illnesses [see 23 May] convenes for its first meeting. It hears presentations from Hillary Rodham Clinton, who elaborates on the mandate of the committee and on the considerations that had guided the selection of its members; from top officials in the Departments of Health and Human Services, Veterans Affairs, and Defense, who pledge cooperation and outline what their officials have been doing, both departmentally and through the interagency Persian Gulf Veterans' Coordinating Board; from representatives of ailing veterans; and from governmental and nongovernmental investigators. {Gannett News Service 14 Aug}

The Institute of Medicine Committee to Review Health Consequences of Service during the Persian Gulf War [see 4 Jan] releases its second report. This had been completed a week previously and is critical of the recently published report from the Defense Department CCEP [see 1 Aug], describing as “not well explained” its conclusion that no new or unique illness exists among the ailing veterans. {*International Herald Tribune* 16 Aug}

15 August The US Army awards an \$18.5 million contract to Hensel Phelps Construction Company of Irvine, California, to build the Life Sciences Test Facility at Dugway Proving Ground, first mooted in 1986 as a ‘biological aerosol test facility’ [see 19 Sep 88 and 29 Jun 93]. Ground will be broken in October, with completion scheduled for April 1997. {*Salt Lake Tribune* 17 Aug}

17 August China needs more than a billion US dollars to dispose of the chemical weapons abandoned by the Imperial Japanese Army [see 6 Jun and 19 Jul], according to an official newspaper, *China Youth Daily*. The newspaper describes how, for 15 years after World War II, the weapons were collected up and buried in deep pits — 1.8 million of them, with another 200,000 still stored in depots awaiting disposal — throughout the northeast of the country, which was the beachhead of Japan’s 8-year occupation. The newspaper also describes research done in Japanese archives by the Chinese historian Bu Ping, deputy director of the Heilongjiang Academy of Social Sciences [see 5 Dec 94 and 31 Jul–2 Aug], who had also conducted interviews with former workers and soldiers of Unit 516, an Imperial chemical weapons organization. Bu had documented the shipping of chemical-warfare agents from Japan to the northern city of Qiqihaer in Heilongjiang where they were filled into munitions. He had also learned of previously unknown Japanese chemical dump-sites in China. {UPI 17 Aug}

17 August Austria deposits with the UN Secretary-General its instrument of ratification of the Chemical Weapons Convention, becoming the 34th signatory state to do so.

17–20 August UNSCOM Executive Chairman Rolf Ekéus is in Baghdad following the “urgent invitation” from Deputy Prime Minister Tareq Aziz [see 13 Aug]. He has a team of ten people with him, experts in nuclear, biological, chemical and missile matters. During the first day Iraqi officials provide him with information in the nuclear and biological areas which he tells reporters is “new”. {AFP 17 Aug} Later, he is given new information on the missile programme. During the third day, a Jordanian official announces what had been widely supposed, that Ambassador Ekéus would shortly be meeting General Hussein Kamel Hassan in Amman. {AFP 19 Aug} On the final day he tells reporters that UNSCOM teams of “very senior experts” will soon be going to Baghdad. He also says that, on chemical weapons, he expected more Iraqi information, but there had not been time for it. {Reuter 20 Aug}

While he is still in Baghdad, the *Washington Post* quotes unidentified “diplomatic sources” as saying that, on biological weapons, the new disclosure included the information that Iraq had worked on aircraft bombs and warheads for ballistic missiles as delivery vehicles for BW agents; that production of BW agents had taken place at a previously undisclosed site; and that the quantity of agent produced exceeded that which Iraq

had declared in July. {R Jeffrey Smith in *Washington Post* 19 Aug}

18 August Iraq has stored hundreds of CBW warheads in underground desert caches as well as at least 32 Scud missiles, so the leader of the London-based Free Iraqi Council, Saad Jabr, tells Israeli television. {*Jerusalem Post* 20 Aug}

21–23 August In Jordan, UNSCOM Executive Chairman Rolf Ekéus is in Amman to speak with General Hussein Kamel [see 17–20 Aug]. Upon arrival he reportedly says to his Jordanian hosts: “We want to see files in his possession and to hear the data he has for us. What we want is to compare documents in his possession with those we have obtained from the Iraqi authorities.” {AFP 22 Aug} Next day he meets with the general, but subsequently declines to tell reporters what transpired. {*London Financial Times* 24 Aug}

At a news conference, and in interviews, Ambassador Ekéus speaks of the disclosures on biological weapons which Iraqi authorities had just made to him in Baghdad: “Now they admit that these types of agents have been put on ammunition, including missile warheads, on bombs, and this is, of course, a major admission. That means also that the Iraqi weapons programme was very much advanced”. {*New York Times* 23 Aug} Also: “Iraq has produced more anthrax than [it had previously] stated”. {AFP 23 Aug} He suggests that Iraqi strategy had been to get the UN sanctions lifted without revealing the secret of the biological weapons: “They kept biology as the prize”. {*Newsweek* 4 Sep}

22 August In Baghdad, a team of six UNSCOM biological-weapons experts arrives for further talks with Iraqi officials [see 17–20 Aug]. Baghdad newspapers are reporting that, at a meeting chaired by President Saddam Hussein on the previous evening, the Iraqi leadership had decided to “continue cooperation with UNSCOM with full transparency to fill in any objective gap in [weapons] files. {Reuter 22 Aug} The new BW team is led by Richard Spurtzel of the United States, who tells reporters: “We are here to follow up on the recent disclosure made by the Iraqis to Chairman Ekéus” {AFP 22 Aug} — when more than a hundred boxes of additional BW information had been furnished. {*Los Angeles Times* 23 Aug}

Something of what the team will be investigating is described in interview by UNSCOM Deputy Executive Chairman Charles Duelfer. He says that the Iraqi government has now acknowledged “a much more extensive programme” than UNSCOM had been able to piece together through the process of gathering independent information outside the country and then confronting the Iraqis with it. Grounds for suspecting BW-agent weaponization work had increased some years previously when Iraq had admitted to the production of two different types of missile warhead both of which were said to be for delivery of chemical agents [see also 29 May–1 Jun and 11–16 Jun]. And he says that the Iraqi government, contradicting an earlier statement [see 5 Jul], now says that its stocks of BW agents and weapons were not in fact destroyed before the start of the Gulf War, in October 1990. {*New York Times* 23 Aug} UNSCOM spokesman Tim Trevan subsequently tells reporters that, according to the latest disclosure, Iraq did not actually destroy its BW weapons until July 1991. {AP 24 Aug}

22 August In Israel, the Chief of Staff of the Defence Forces, Lt-Gen Amnon Lipkin-Shahak, says to the Knesset Foreign Af-

Sense of the US Senate

US ratification of the Chemical Weapons Convention is currently stalled in the Senate Foreign Relations Committee. Along with START II and a number of ambassadorial appointments, it has been held hostage there since the summer by committee chairman Jesse Helms in his battle with the Administration to reorganise the Department of State [see *News Chronology*, 1 August].

Meanwhile the Senate itself is becoming impatient. When it passed its version of the FY 1996 Defense Authorization legislation on 5 September, it included, by unanimous approval, an amendment calling for ratification of the Convention. Originally proposed by Senator Carl Levin and subsequently amended by the Chairman of the Armed Services Committee, Senator Strom Thurmond, the amendment in its final form stated: "It is the sense of the Senate that the United States and all other parties to the START II and Chemical Weapons Convention should promptly ratify and fully implement, as negotiated, both treaties".

The White House at once issued a statement in which President Clinton welcomed the Senate action and said: "We must reduce the threat of weapons of mass destruction, whether nuclear, chemical or biological. START II and the CWC are critical steps on the road toward reaching this objective". The White House statement went on to recall what the President had said in his US Air Force Academy commencement address on 31 May: "Both START II and the Chemical Weapons Convention will make every American safer, and we need them now".

fairs and Defence Committee: "According to our understanding [the Iraqis] have no more chemical weapons, no Scuds and only a very few Scud launchers". {Reuter 22 Aug, *Jerusalem Post* 23 Aug}

23 August Poland deposits with the UN Secretary-General its instrument of ratification of the Chemical Weapons Convention, becoming the 35th signatory state to do so.

25 August UNSCOM Executive Chairman Rolf Ekéus reports to the UN Security Council on the new information about Iraq's biological weapons [see 22 Aug]. Particulars are subsequently disclosed to reporters by the US Representative to the United

Nations, Ambassador Madeleine Albright, and also by Ambassador Ekéus. {Reuter and AFP 25 Aug, AFP 27 Aug, DPA 29 Aug, AFP 3 Sep}

It seems that, during December 1990, Iraq had actually filled 191 munitions — aircraft bombs, artillery shells and missiles — with BW agents and deployed them to two air bases. These munitions included 50 R-400 bombs and a dozen al-Hussein missile warheads charged with anthrax bacteria, and about 100 bombs and 50 other warheads charged with botulinus toxin. There were also munitions charged with aflatoxin. Agent production began in 1989 and by the end of 1990 Iraq had 26,500 litres of culture, according to UNSCOM calculations. Verification of what ultimately happened to the weapons will clearly occupy UNSCOM for a considerable while yet. In addition, research had been proceeding into other mycotoxins and into plant pathogens, including diseases of wheat. Work had also been done on remote-controlled aircraft with spray nozzles, apparently for delivering disease agents. Biological weapons had been tested on sheep and monkeys in the Muthanna region.

27 August Iran, having hired Russian experts, has made a "quantum leap forward" in the development of biological weapons, according to unidentified Western intelligence officials in Washington quoted by the London *Sunday Times* {27 Aug}, which states further that, with this Russian help, the Iranians "have saved years of experiments and have been able to go straight from basic research to production, and the development of an effective delivery system". The newspaper also asserts that "the germs are manufactured at Damghan [see 1 Jun], west of Tehran, and at another facility in Tehran".

30 August In South Africa, the National Assembly votes to ratify the Chemical Weapons Convention. {AFP 30 Aug}

30 August In the United States, the director of the Defense Department Advanced Research Projects Agency, Larry Lynn, speaks in interview of ARPA plans to increase its work on BW defence, seeking to shore up a "serious deficiency" in the Defense Department. He identifies this as one of ARPA's top ten priority areas. {*Aerospace Daily* 1 Sep}

31 August In Baghdad, the latest UNSCOM biological mission [see 22 Aug] completes its visit. Team leader Richard Spurtzel declines to speak to reporters on his way out. {AFP 31 Aug} Later, however, US officials disclose further information about the Iraqi BW programme, seemingly attributing it to this mission. Thus the *New York Times* reports that the programme involved up to 150 scientists and senior technicians plus support and security staff. Agents studied included wheat cover smut, camel pox, haemorrhagic conjunctivitis virus (which causes temporary blindness), a virus causing chronic diarrhoea, Yellow Fever virus and Crimean Congo haemorrhagic fever virus. Weaponization work included adaptation of aircraft auxiliary fuel "drop tanks" for use as agent delivery vehicles. {*International Herald Tribune* 7 Sep}

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